This book is like a three-layer cake. One layer is Russia. Why did the purported market reforms, arguably the boldest in history, end up in one of the greatest peace-time economic contractions? Why, in addition, has Russia lived from one default to another—in fact, has lived off defaults? And, how can Russia be uplifted from contraction and defaults to economic growth and prosperity?

A second layer is socialism. In modern tradition, socialism is equated with big Government (with a capital G). But the Hobbesian jungle, in which predatory animals and predatory humans alike socialize the output of every person and every species by killing and stealing, is also socialism. On reflection, socialization, in the sense of predatory redistribution of output and income, with or without big Government, is socialism by definition. Predation, redistribution, and socialism are synonymous terms. Central planning, which took place under Communism (with a capital C), is only a special case of socialism with very big Government. This fact brings us back to Russia and to the question of its so-called market reforms and subsequent big contraction. Was Russia’s transformation the result of market reforms or, in marked contrast, a mutation of socialism? This is a loaded question. It puts the economic philosophy of the last 300 years under siege. If what transpired in Russia was market reforms that resulted in a market economy, then the market system is not a universal road to prosperity. Indeed, it is not even universally viable.

We submit the case of socialist mutation in Russia in the 1990s. Russia mutated from socialism with big Government (with a capital G), or from Communism with a capital C, into a new, hitherto unknown species of socialism, without big Government. It mutated into communism with a lower-case ‘c.’ Moreover, for perhaps the first time in history, a second, parallel government emerged, which has the full power to tax the public and make the Central Bank print money. This parallel government is a network of enterprises. We will call this new economic species Enterprise Network Socialism, or ENS in short. This term helps to convey that the government lost its traditional dominance which defined socialist regimes under central planning. What happened is that after the abolition of central planning, the inherited network of enterprises took over fiscal and monetary power and has since been redistributing most of the national income.

That the literature en masse has confused this new species of socialism with a market economy, and generally identified socialism with the government, leads us to the third layer of this book. This is the missing link in the evolution of the market economy, which is also the missing link in the attempts of various post-Communist countries to become market economies. We ask: What separates a market from a non-market economy? In the spirit of the earlier point on socialism, it is the absence of socialization of income, the presence of privacy of income, when income is internalized by its earners.

Private income is, admittedly, a contentious idea. It reduces the scope of the market economy to
only that type of voluntary exchange which internalizes income and excludes situations, like today’s Russia, wherein economic liberty intertwines with predatory redistribution. The concept of private income brings back John Locke’s view that only the private fruits of production and exchange, not any private interest and free exchange, create social good.

Can this missing link, which slowly evolved and adapted in Western market economies, be reproduced nowadays through managed public policy? The recent experience of many formerly non-market economies and some post-Communist economies, such as China, suggests an affirmative answer. But what policy set would fit today’s Russia? This takes us back to the first layer, Russia.

The organization of the book contains all three layers in its three parts. Part One introduces the issues sketched above. It discusses private income and its socialist antipode, common income. The latter is the income that is socialized by the government or various predatory forces. Then it places Enterprise Network Socialism among other types of common income. Part Two marshals the data on Russia’s economic experience in the 1990s and explores the causes of serial defaults and protracted contraction. Part Three offers the mechanics of our proposed policy recommendations. We spell out how to break up Enterprise Network Socialism and reroute Russia from predation to prosperity.

A special word is due about the language that appears throughout this book. We found it necessary to define the vocabulary, and sometimes redefine existing vocabulary, in order to understand the new Russian economic species.

Our new concepts cluster around the principal dichotomy of “common and private.” Private means internalized, common means socialized. We apply this dichotomy broadly, employing such opposites as private income and common income, private expenses and common expenses, private finance and common finance, private bills and common bills, private payment and common payment, private prices and common prices, and private balance sheet and common balance sheet. The dichotomy private versus common supplants the traditional dichotomy of market and government. The perspective of a new dichotomy is different. While private income is a foundation of the market economy, individual market measures are ambiguous from this perspective. For example, liberalization of transactions and privatization of assets are not universal productive forces. In the presence of private income, they may create a market economy. In the absence of private income, they only mutate socialism. The role of the government is ambiguous, too. It may protect private income and it may socialize income and manage access to common income. Thus the new dichotomy represents a different observation platform. We drop from usage the familiar terms reform and transition, which have become meaningless cliches in the real world of a variety of post-Communist economies.

In addition, we prefer the term economic species to economic systems, although we may sometimes use them interchangeably. The word species conveys uniqueness, a special station in an order of things, taxonomy, and the spirit of evolution instead of transition. This usage implies that some economic species are viable and others are not. The market economy is viable. Thanks to incentives created by private
income, it adapted human behavior from predation to production, expanded, and spread over the world. In contrast, central planning devolved to extinction. Enterprise Network Socialism in Russia is also not viable over the long run. It moves from one default to another and down the slope of perpetual contraction, causing incredible human misery. This is the point to start the first chapter of the book.
Chapter 1

Russia after the end of central planning represents a case study in income redistribution and economic growth. As an empirical rule, GDP growth is negatively related to redistribution of income in all transactions between all agents. All-transactional income redistribution degrades general productive incentives and retards long-term economic growth. State-forced production under central planning, including forced investment and application of technology, partially substituted for productive incentives. In conjunction with incentives for human capital and technology, this substitution enabled moderate long-term economic growth. Metaphorically, one carrot, one stick. The dissipation of central planning in Russia in 1989-90 did not reduce income redistribution and did not create general productive incentives, unlike the end of central planning in China after 1977. Incentives for human capital and technology started to degrade along the way. This conjunction left the economy with neither incentives nor force. GDP started to slide in 1990-91. The great contraction of 1992-98 occurred when liberalization and privatization opened a new channel of income redistribution through trade credit. The recovery of 1999-2007 took place after the partial policy reversal reimposed government controls which inadvertently narrowed this channel of income redistribution.

This chapter reconstructs the empirical regularities of Russia’s GDP contraction in 1992-98 and recovery in 1999-2007 in relation to income redistribution. It also compares empirical irregularities associated with spurious factors such as the dynamics of global oil and other commodity prices.

Empirical Regularities and Irregularities, Russia, 1992-2007

Russia’s economic policies since the beginning of 1992 added a new channel of broad income redistribution which operates through trade credit. The reconstruction of its mechanism and its evolution will occupy the remainder of this chapter.

Introducing a central empirical regularity

By a way of introduction, figure 1 renders the main empirical regularity of both the great contraction of 1992-98 and the recovery of 1999-2007. The data are reproduced in detail in tables 1 and 2.\(^1\) The figure plots the index of real GDP in 1991-2007 holding the 1991 level as the benchmark 100 percent. The figure compares it with the index which represents a measure of

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inverted income redistribution. The benchmark year is also 1991. The index is truncated between 1991 and 1992 to accommodate its sharp decline in early 1992 due to price decontrol, an inflationary spike, and a multifold decline in the money demand. The composition of the index represents mechanically the ratio of the money stock M2 to the stock of enterprise receivables at each year-end (see the Glossary to this chapter). Accumulation of receivables by the network of enterprises is the central redistributive instrument under Russia’s economic system in 1992-2007 using the trade credit channel. This statement can be proven is the sum of various subsidies to the enterprise network through various channels is equal to the amount of receivables, and this proof is forthcoming below. In this case, accumulation of receivables operates as fiscal claims on subsidies from the government and the public, and the stock of receivables does indeed represents the buildup of redistributive claims. The money stock constitutes loanable funds owned by households. Since the stock of receivables embodies income redistribution, the ratio of the money stock to receivables can stand for the inverted index of income redistribution.

The empirical regularity through both the contraction of 1992-98 and the recovery of 1999-2007 is the match of this index with the index of real GDP. This is true for every year for the period of 17 years, for both the downward slope of the contraction and the upward slope of the recovery, and for minor ups and downs. Mechanically, this empirical regularity is possible if the annual growth index of nominal enterprise receivables operates as the deflator of the money stock and GDP. That is, if it carries a broad price index. It will be documented below that this possibility is real. In which case the index of the ratio of the money stock to receivables constitutes the index of the real money stock which matches the index of the real GDP when the change in money velocity is truncated. The nominal mechanics of this empirical regularity are basic, it is the measure of (inverted) income redistribution that makes is interesting and specific to Russia’s economic system.

As a broad empirical rule, the greater is redistribution of income, the lower is economic growth and the smaller is income redistribution, the higher is economic growth. An abrupt increase in income redistribution, such as an opening of a major new channel, in conjunction with the abolition of forced production of central planning and with retardation of incentives for human capital and technology, can lead to GDP contraction. Reduction of income redistribution, such as narrowing of its major channel, leads to an economic recovery. This empirical regularity fits Russia in 1992-2007.

Empirical irregularities

Many observers attribute Russia’s GDP recovery in 1999-2007 to rising world oil prices. The same rationale can stand for all natural resource and commodity prices. The reasoning for this explanation is the improvement of the terms of trade. In one channel, the rising external demand stimulates domestic production, first in oil, and subsequently through the value-added chain. In an additional channel, the fiscal position of the government improves through higher tax revenues, which reduces inflation, and supports a framework for economic growth. This explanation has an intuitive appeal for short-term economic fluctuations. But it does not constitute a long-term empirical regularity. Even if this explanation worked for the recovery in 1999-2007, it would be specific for the recovery and would not account for the great contraction of 1992-98. But this
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explanation cannot account for the recovery in 1999-2007, either.

Figure 2a indicates that the profile of global crude oil prices in constant terms and the index of Russia’s GDP in 1991-2007 may resemble a correspondence. Taken by periods, prices fell from 1991 to 1998 and increased in 1999-2007, and Russia’s GDP contracted and recovered during the same periods. This correspondence is spurious. It disappears if the steep rise in crude oil prices in 2004-2007 is truncated. Figure 2a shows that real oil prices in constant 2006 dollars fluctuated widely around $27 per barrel in 1991-2003. Figure 2b shows that real oil prices in constant terms also fluctuated around $27 per barrel during 18 years in 1986-2003, including the last four years of moderate economic growth under central planning, 1986-1989, the mild contraction in 1990-91, the great contraction in 1992-98, and the first four years of the recovery, 1999-2003. Annual fluctuations of oil prices and GDP growth do not correspond during both periods of contraction in 1990-98 or 1992-98 and the recovery in 1999-2007. Oil prices increased in 1995-1996 when GDP continued to slide. Oil prices declined in 2001 and 2002 when GDP continued to recover.

More important considerations point to the lack of empirical regularity or even a correspondence between world oil prices and Russia’s economic growth even for one period, that of GDP recovery in 1999-2007. Figures 2a and 2b demonstrate that neither the demand channels nor the supply channels that should transmit the impact of world prices to economic growth were operating. Crude oil prices started to recover in 1999 after the Asian crisis. Russia’s GDP also started to recover in 1999. But neither Russia’s export revenues from oil, natural gas, and in total on the demand side (see figure 2a and table 3) nor oil and natural gas output on the supply side (see figure 2b) recovered in 1999. Russia’s GDP recovery started in 1999 without oil output rise, without natural gas output rise, and without export revenues increase from either of them and in total.

GDP recovery accelerated in 2000 which saw a 10 percent growth and continued rapidly in 2001-2002 and oil output also increased, along with other products in the economy, but natural gas output declined and, most importantly, export revenues from each of these commodities and total export revenues increased only in 2000 and remained flat in 2001-2002 as global energy prices declined. In all, the trigger of the economic recovery in 1999 and the entire rapid economic recovery in the first five years, 1999-2003, have no indication for being attributed to the rise in global oil and other commodity prices. Finally, the rapid appreciation of world oil prices in 2004-2007 in constant terms and the corresponding more than twofold increase of Russia’s oil export revenues and total export revenues was not accompanied by an acceleration of GDP growth rates which fluctuated in 2003-2007.

Absence of an empirical regularity on these scores corresponds to the cross-national data in figure 3 on the GDP dynamics both among major global oil exporting economies and among former Soviet states, oil exporters and oil importers alike.

Figure 3a documents the heterogeneous economic performance of the six major petroleum-exporting countries around the world in 1992-2007. In Russia and across countries, it is uncorrelated with oil price fluctuations. Figure 3b illustrates how economic recovery synchronized in Russia, Ukraine, Kazakhstan, and other former Soviet states, both net oil exporters (Russia,
Kazakhstan, Azerbaijan) and importers (Ukraine, Belarus, Moldova). The oil factor was neither necessary (viz., Ukraine) nor sufficient (viz., Venezuela) for economic recovery and growth in the early 2000s. The oil connection abstracted from the economic system and policy is specious.

Russia’s economic recovery raises a more fundamental, flammable, and incendiary issue than oil. Figure 4 illustrates it. In Russia and similar post-central plan economies, liberalization and privatization coincided with the great economic contraction in 1992-98. Partial de-liberalization and de-privatization in Russia, starting with mandated repatriation of export revenues, coincided with economic recovery in 1999-2007. This chapter will address this theme at the end. It will discuss how the impact of economic freedom and of private property rights institutions is ambivalent with respect to income redistribution, general productive incentives, and long-term economic growth. It depends on the economic system. If it entails freedom from income redistribution, it is the freedom to create new wealth, and it is eminently productive. If it coincides with freedom to redistribute income from the government, firms, and households, it suppresses productive incentives and economic growth. Government restriction of such freedom, e.g., in China or in Russia after 1998, fosters economic performance.

Socialism from Below: Third Party Billing

To start with a quick frame of reference, one can view Russia’s economy as third party billing. X sells products to Y and charges Z. This operation is familiar on the sectoral scale in U.S. health care services and higher education. Health care providers charge insurance companies or the government. State colleges charge student tuition to the state government. Buyers receive products for free and don’t economize on quantity and prices. Sellers can overcharge for their products when the third party pays. This incentive structure is responsible for rapidly rising health care costs and tuition. Vernon L. Smith thus summarized this systemic market distortion:

Here is a bare-bones way to think about this situation: A is the customer, B is the service provider. B informs A what A should buy from B, and a third entity, C, pays for it from a common pool of funds. Stated this way, the problem has no known economic solution because there is no equilibrium. There is no automatic balance between willingness to pay by the consumer and willingness to accept by the producer that constrains and limits the choices of each.2

After the abolition of central planning, a novel system of third party billing evolved in Russia. It is national in scope and runs from below. Enterprises bill the government and the public.

Aggregate third party billing

Figure 5 and box 1 join forces on the next pages to explore step-by-step how this novel

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system had adapted and how it operates. In essence, enterprise X sells goods and services to enterprises Y and Z, receives some payments, and implicitly charges the unpaid balances to the government. Enterprise Y sells goods and services to enterprises Z and X, receives some payments, and implicitly charges the unpaid balances to the government. Enterprise Z sells goods and services to X and Y and to retailers, receives some payments, and implicitly charges the unpaid balances to the government. Circularly, all enterprises except retailers, various services, and outliers charge the government. In practice, enterprises X, Y, and Z issue invoices to buyers and receive payments over time. As in the universal practice of trade credit, sales and their invoices precede payments. (See the Glossary for definitions). In accounting terms, the balances of the amounts invoiced net of payments constitute the outstanding balances of accounts receivables, or simply receivables. In most economies, the outstanding balances of receivables are paid by buyers. In Russia and similar countries, enterprises charge these balances to the government and the public at large, take the subsidy, and then pay each other. Enterprises Z, Y, and X take the subsidy and pay X, Y, and Z with public funds. This unique subsidy is taken, not given, charged, not solicited.

The monthly data in figure 5 cover the period 1992-97 and truncate in 1998, for both presentation and substantive reasons. This was the period of the unfettered operation of aggregate third party billing, before enterprise freedom to charge the government was restricted. Herewith a brief preview. When invoices outgrow payments, enterprises amass the balances of receivables. Enterprise income winds up to a great extent in receivables instead of cash. For many enterprises, receivables exceed net income. Enterprises increase payables—do not pay bills—lest their net cash flow turn negative. Tax arrears supplement payment arrears, especially for industries where receivables exceed payables. Enterprises appropriate taxes withheld from workers and collected from consumers, which they do not remit to the government. The government cannot enforce full tax remittance when enterprise bank accounts are drawn down. Tax non-remittance on a national scale rules out government crackdown, seizing assets, or bankruptcy for it will wipe out the tax base. The government is forced to monetize tax remittance and enterprise payments (even if the government monetizes its budget deficit, itself due to tax non-remittance, the money is fungible). The banks transmit monetization through credit for payments, roll over and expand this credit.

Figure 5 highlights a regular empirical match between receivables and the subsidy they enforce. It shows how over time the outstanding balances of enterprise receivables match the sum of (1) tax non-remittance and (2) monetization multiplied through the banking system (approximated as the domestic money balances M2). These are the two principal channels of the subsidy wrung from the government. They sum up into a self-enforceable subsidy. The simple point of figure 5 is that the government and, ultimately, the public are forced to pay the enterprise bill.

The difference of aggregate third party billing

The national scale, across industries and enterprises, shifts third party billing towards the government and the public (households, consumers) as the ultimate payers. In the supply chain over the stages of processing, every enterprise is both buyer and seller of products, and most enterprises, except retailers, various services, etc., issue invoices. The national scale aggregates third party billing and enables the entire enterprise network to charge the government and the public at large.
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This marks the basic difference between sectoral and aggregate third party billing. The former is voluntary and contractual. The latter forges a symbiotic bond in which enterprises take the initiative and the government is forced to pay. This feature is unique and extreme. Aggregate third party billing charges from enterprises to the government, that is from below to above (in economic terms, it is endogenous). The subsidy is taken by the enterprise network from below, not given by the government from above. Ironically, yet evolutionary, this system represents a total socialist economy in reverse, as if central planning flipped topsy turvy. Box 2 depicts this evolution.

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3 Third party billing on the national scale is unique and extreme. It aggregates (1) various sectoral cases of third party billing and (2) cross-sectoral subsidies between enterprises and industries through the mechanism of trade credit. The latter between individual sectors redistributes income from sellers to buyers without billing the government. See Robert A. Schwartz and David K. Whitcomb, “Implicit Transfers in the Extension of Trade Credit,” in Kenneth E. Boulding and Thomas F. Wilson, eds., *Redistribution Through the Financial System: The Grant Economics of Money and Credit* (New York: Praeger Publishers, 1978), pp. 191-208. Aggregate third party billing, wherein the government is the third party, extends cross-sectoral subsidies to total industry cross-sectoral operations. This creates the national scale of income redistribution from the government to the enterprise network.

4 In the taxonomy borrowed by social sciences from biology, this represents parasitic symbiosis. Symbiosis means cohabitation of different and dissimilar organisms. The taxonomy consists of three types of symbioses: 1) mutualist, that is, mutually beneficial for survival, e.g., bees and flowers, flowers provide nutrients to bees, bees pollinate flowers; 2) commensal, that is, one organism benefits and the other is neither helped nor harmed, e.g., birds and trees; and parasitic, in which one organism corrodes, consumes, and destroys the other. See Kim McQuaid, *Uneasy Partners: Big Business in American Politics, 1945-1990* (Baltimore: Johns Hopkins University Press, 1994), p. XV and passim.

Central planning integrated a uniform assembly line. Individual enterprises acted as the floor shops on the assembly line of forced production under government output quotas. This was a veritable nation-enterprise. This system necessitated aggregate third party paying. Whenever enterprise Y under-produced output or overspent inputs, lost income, run into a negative net cash flow problem, and missed the due date to pay its bills to enterprise X, the government financed enterprise Y to enable it to make payments to X. The government then punished enterprise Y for failing central plan output and input quotas. This financing of payment arrears (dubbed in the literature as the soft budget constraint) represented an automatic credit line. It served the government to enforce an uninterrupted flow of output, forced exchange, and forced delivery on the vertical assembly line from X to Y and to enforce performance of Y. Third-party paying was from above, from the government to enterprises (in economic terms, exogenous). It was the government means to enforce forced production/exchange/delivery under central planning. It was thus a unique forced subsidy from the government. Like in making foie gras, it was the force-feeding of immediate production units in order to increase output quotas.6

Abolition of central planning could come in various ways. The government could phase-out the inherited nation-enterprise by phasing-in the new-entrant market sector and thus shrinking the share of the old state sector in GDP. China chose this strategy bypassing liberalization and privatization of the preexisting state sector. Russia opted for liberalization of transactions and privatization of preexisting enterprises. This strategy subsumed the abolition of central planning. Inadvertently, it enabled the inherited assembly line of enterprises to adapt into a subsidy-extracting network. Individual enterprises (more exactly, owners and managers) were free to join within the subsidy network or survive and perish without.

The enterprise network adapted aggregate third-party paying into aggregate third-party billing. This amounted to socialist devolution of fiscal and monetary authority from the government to the enterprise network. Aggregate third party billing empowers the network to enforce its own subsidy from the government and the public. In effect, the enterprise network collects a tax from the public. This subsidy and this tax is one and the same, to wit, the tax subsidy. It represents the parallel taxation of the public by the enterprise network. One can dub this new economic system Enterprise Network Socialism.7


6This treatment of the soft budget constraint under central planning is opposite to the standard literature which views the government as the benevolent and weak-willed dictator unable to commit himself to not subsidizing enterprises. See Janos Kornai, Eric Maskin, and Gerald Roland, “Understanding the Soft Budget Constraint,” Journal of Economic Literature 41, no. 4 (December 2003): 1095-1136. This view is inconsistent with the very fact that he is able to keep forced production. The standard view fits individual and sectoral bailouts in Western and developing economies, a species systemically different from central planning.

7A quick taxonomic distinction. Aggregate third party billing (1) is collective, all-encompassing, not of sectoral special interests; (2) entails a subsidy taken from below, not given from above; endogenous, not exogenous; (3) works automatically, not through the political process; and (4) subsidy extraction is cost-free to enterprises, does not involve spending resources of time, effort, and money. On each of these four counts aggregate third party billing is opposite to
How a mechanism operates often tells why it exists and how it came into existence. The evolution from central planning to Enterprise Network Socialism transpires from that the inherited national assembly line, not scattered sectors or enterprises, can enforce third party billing from below. This approach dissects what had evolved historically as an adaptive operation of learning by doing. The next pages dissects what had evolved historically as an adaptive operation of learning by doing. The next pages follow box 1 and figure 5 in laying out this operation step-by-step.

**Step 1. Surcharge**

Step 1 is the easiest for enterprises to undertake and the hardest for observers to see and to explicate. It reveals itself through a chain of empirical observations. They compare the operation of accounts receivable in the U.S. and Russia. The U.S. data merely exemplify the standard practice of trade credit in market economies and serve as a benchmark to highlight Russia’s difference. The stock of accounts receivable in figure 5 and in various subsequent figures and the flow of receivables in the flows of funds in tables 4 and 5 list nominal values in current dollars or rubles. To eliminate the influence of inflation, several diagrams of figure 6 deflate nominal receivables and plot real receivables in inflation-adjusted values. This decomposition of various indices of nominal receivables into the indices of real receivables and the price index in figures 6 and 7 opens a Pandora’s Box—not for the U.S. data obviously, but for Russia’s.

- **Observation 1. Separation**

The first observation may seem to be blase and trivial. Figure 6 contrasts two patterns of trade credit, in the U.S. and Russia. To define these patterns, figure 6 juxtaposes the annual indices of nominal or real receivables in 1991-2007 and the annual indices of real GDP. The latter serve as reference points. Figures 6.1 and 6.2 compare the indices of nominal receivables in current rubles or dollars in the U.S. and Russia against GDP growth. Figures 6.3 and 6.4 offer a sharper picture with real receivables in inflation-adjusted dollars or rubles on the same backdrop of GDP.

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what the literature calls rent-seeking. Also, the above point (2) indicates that aggregate third party billing charges from below, endogenously, and is thus opposite to what the literature calls the soft budget constraint, which is operationally third party paying. The latter can be total under central planning or sectoral in many other economies (e.g., bailouts), but it streams from above, is exogenous in all cases. These are the taxonomic systemic differences between aggregate third party billing under Enterprise Network Socialism and various other species of socialism (income redistribution). Ignoring these systemic differences leads to wrong diagnostics which begets wrong policies.

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8The Consumer Price Index (CPI) is used as the deflator in figures 6 and 7. The choice of an appropriate deflator is a complicated specialist issue beyond the scope of this work. The Producer Price Index (PPI) might have been more pertinent for deflating receivables but in Russia this index is available for industrial output only, which constitutes about one-third of GDP. For completeness, the CPI is used and, for consistency, it is used for both Russia and the U.S. Another option is the GDP deflator. Unlike the CPI, it includes prices of exports, which makes it less appropriate for this exercise, and excludes prices of imports, which makes it more appropriate. Further research may try alternative deflators. The choice of the deflator does not affect empirical findings beyond figures 6 and 7.

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9They are converted from annual rates of growth of real GDP.
Only figure 6 and the discussion around it alternate nominal and real receivables. The rest of the figures, tables, and discussion employ nominal receivables in current rubles or dollars. The qualifier ‘nominal’ is dropped for brevity except in figure 6 and the surrounding discussion.


The choice of the period 1971-1984 is both substantive and presentational. Substantively, it is the period of the highest U.S. inflation in the recent decades since the annual data on receivables are available. The choice of the specific years, 1971-1984, is a matter of presentation. They start 20 years before the observation period 1991-2007.
great contraction of 1992-1998 and continued to increase moderately in 1999-2007. These increases correspond closely to increases in the annual price indices in figure 7.1. This leaves real receivables vis-a-vis real economic activity in figure 6.4. The indices of real receivables lack any relationship with the indices of real GDP. Real receivables saw increases during the years of the great contraction of 1992-98 except 1993 and 1998 and declined or held unchanged during the years of the recovery of 1999-2007 except 2006-2007. The pattern that arises here is detachment of real receivables from economic activity. Output declines and recovers but real receivables exhibit no participation in or reaction to production and sales. Trade credit and productive activity walk their own separate paths as if they operate on different planes of existence, detached from each other. Russia exhibits a unique pattern of separation of trade credit from production and sales.

Observation 2. Alignments

The path of real receivables in Russia in figure 6.4 is not only detached from output but, with the exception of the years 1991 and 1996, nearly stagnant. The year 1991, when real receivables fell significantly during contraction, similarly to the cyclical pattern, ended the previous economic system. It was the last year of central planning passing away, before liberalization of transactions and privatization of productive assets commenced in 1992, and its pattern is different. 1991 is included in figure 6 and other documentation for comparison only. The year 1996 when the index of real receivables shows a spike is an evidential outlier. It may be a statistical error or a genuine

13 There was an extraneous reduction of nominal receivables in August-September 1992 due to the clearing (settlement) conducted by the Central Bank. Consult the Glossary for definitions and description.

14 The index of real receivables is a mechanical result. It derives from dividing the index of nominal receivables by the price index. It is thus sensitive to the price index in a given year. In 1996, the Russian State Committee on Statistics changed its methodology of calculating the Consumer Price Index (CPI). It replaced the basket of goods and services on which the CPI is based, replaced the so called “old basket” with the “new basket.” A series of empirical studies found that the value of the new basket which started to serve as the baseline for CPI estimates was lower by 1.5 times than the value of the old basket (see Moscow Institute of Electronics and Mathematics, Laboratory of Econometric Studies, V. Zhikharev et. al., “How to Measure Living Standards,” at http://www.rau.su/observer/N05_99/5_15.HTM). If this estimate is correct, the price index in 1996 was understated by 1.5 times and the index of real receivables is overstated in figure 6.4 by the same 1.5 times. Then the spike of 1996 in figure 6.4 is an error. Indirect evidence leads to a similar conclusion. GDP deflator was 1.5, implying the inflation rate more than twice as high as 21.8 percent rise of the CPI (Russian State Committee on Statistics, Rossiiskii Statisticheskii Ezhegodnik 2004, Moscow, 2004, pp. 627, 303). If one views the price index in Russia as inflationary expectations embodied in the growth of nominal receivables, in the consistent relationship illustrated in figure 7.1, the inflation rate of 21.8 percent in 1996 is low in comparison with the growth of nominal receivables by 91 percent in that year. If one rather views the price index in Russia as a lagged response to money growth, the latter was higher in the reference period than 21.8 percent. The monetary aggregate M2 increased by 70.4 percent from July 1995 to July 1996, if one looks for the six-month lag, by 53.6 percent from October 1995 to October 1996 if one looks for the three-month lag, and by 30.6 percent from January 1996 to January 1997 if one discounts any lag, at the time of GDP decline of 3.6 percent. (The data derive from the Central Bank of Russia, various releases). If one abstracts of the differences between the CPI and GDP deflator, to reconcile these numbers with the CPI in 1996, the velocity of money circulation must have declined by 10 to 30 percent (the demand for money balances increased by 12 to 45 percent) in 1996. This might be plausible because disinflation was rapid or not plausible because inflation was still high. This is a technical issue which remains unclear. The empirical impact of the 1996 outlier is limited to decomposed relationships between real receivables and economic growth (figure 6.4) and between nominal receivables and the price index (figure 7.1). This does not affect the composite relationships between nominal
exception, for reasons unknown, from an otherwise narrow stable range around unity. Clipping the 1996 data from the path of real receivables charts a trend through 1992-2007 spanning the gap of 1996. All fluctuations in 1992-1995 and 1997-2007 are minor, random, and cancel each other over time. The index of real receivables actually hovered around unity and was stable within a narrow range. The indices of real receivables are nearly invariant to GDP decline or growth. Real receivables in Russia seem to align with the index equal to unity, which implies zero growth of real receivables over time.

Figure 7.1 displays the complementary part of this relationship during the same period 1992-2007. It shows that the separation pattern in Russia closely relates, indeed matches on the annual basis, the path of nominal receivables with the price index. Minor annual fluctuations which deviate from this match move randomly. A closer match of the two indices smooths over time and forms a continuous relationship. This continuous relationship is consistent with the indices of real receivables hovering around unity and converging towards it. Tautologically, if the index of real receivables hovers around unity, the index of nominal receivables must align with the price index. Figure 7.1 documents the latter alignment.

The outstanding stock of nominal receivables in the U.S. increased from $1,033.1 billion in 1990 to $2,405.6 billion in 2005, that is, by the factor of 2.33. The Consumer Price Index increased by the factor of 1.51 in 1990-2007. The real (inflation-adjusted) growth of receivables was 2.9 percent per annum. GDP in chained 2000 dollars increased from $7,112.5 billion in 1990 to $10,841.9 billion in 2004, that is, by 2.9 percent per annum. Extending this exercise to the 25-year period 1980-2004 yields the average growth rate of about 2.9 percent per annum for real receivables and 3.0 percent for real GDP. Going back 50 years and covering the period 1955-2004, gives annual growth rates of GDP at 3.2 percent and real receivables at 3.3 percent.

The cyclical pattern of trade credit in the U.S. in figure 7.2 bears no regular relationship between nominal receivables and price indices. The lack of their relationship showed also in 1971-84 in figure 6.5. This dissociation is mechanically consistent with the alignment of growth of real receivables with the growth of real GDP.

Box 3 in the top matrix summarizes the contrasting alignments over time. Under the cyclical pattern of trade credit in the U.S., growth of real receivables aligns with growth of real output. Tautologically, growth of nominal receivables aligns with growth of nominal output. Under receivables and the combined subsidy (figure 5 and similar subsequent figures 13 and 14) and between economic growth and nominal receivables acting as a deflator of money balances (figure 1). That is, this does not affect central, principal relationships.

15See sources in figure 6.3. These estimates are crude and serve as an illustration only. They rely on disparate deflators because the real GDP data from National Income and Product Accounts apply the GDP deflator but real receivables, to be consistent in the comparative context with Russia’s measures, are deflated by the CPI. This problem can be avoided if one compares growth indices of nominal GDP and nominal receivables. Still, a rigorous test of this regularity (the growth of output aligns with the growth of receivables) requires numerous multi-period combinations at various intervals. It is beyond the theme and the scope of this book.
the separation pattern in Russia, real receivables stagnate within a stable narrow range and growth of nominal receivables aligns with price increases. The next observation is mechanical. Receivables are balances of invoices net of payments. It is price increases in invoices in excess of payments that make up these balances in Russia and make receivables grow in alignment with the price index.

- Observation 3. Invoicing

Box 3 and figure 8 explore this mechanical connection. It is depicted in the lower half of Box 3 and its side bars.

Mechanically, trade credit is the same everywhere since its inception. Two mechanical points of reference apply to both the cyclical and the separation patterns. They apply to each seller and to the economy as a whole. They apply in both nominal and real terms held consistently.

1. Invoices precede payments in the overlapping flows of invoices and payments.

2. Receivables constitute the balances of invoices net of payments. Receivables increase when invoices exceed payments. Receivables decline when payments exceed invoices.

This decomposition shifts focus from receivables to invoices as the source of empirical alignments. It is what is in invoices when they exceed payments and make up an increase in the outstanding balances of nominal receivables. It can be output growth in current prices under the cyclical pattern in the U.S. Or it can be price increases per se under the separation pattern in Russia. This decomposition makes both patterns mechanically consistent in the same mold.

Under the cyclical pattern in the U.S., the mechanics transpire in real terms. When the economy contracts and sales decrease, new invoices are smaller than past invoices. Payments on past invoices exceed new invoices. The outstanding balances of receivables decline. When the economy expands and sales increase, new invoices are greater than past invoices. New invoices exceed payments on past invoices. The outstanding balances of receivables increase.16 This is how, mechanically, in the long run real receivables grow at the rate of growth of real output.17

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16This cyclical pattern of trade credit contains a paradoxical lag. When spending tightens, payments decelerate. This is cyclical. But decelerated payments mean that even if new invoices are smaller than past invoices, new invoices may exceed current payments, and receivables continue to increase in the beginning of recessions. When spending expands, payments accelerate. This is cyclical. But accelerated payments mean that even if new invoices are greater than past invoices, current payments may exceed new invoices, and receivables decline in the beginning of recoveries (e.g., in 2002; see figures 6.1 and 6.3). The paradox of this lag is that because payments are cyclical, receivables look counter-cyclical in the very short run. But there is no counter-cyclical pattern here because this relationship is intermittent and the lags are periodic, temporal, and discontinuous. They do not extend beyond the beginnings of recessions and recoveries and dissipate thereafter. The literature discovered the lags but mistook them for a counter-cyclical pattern in the very short term. See footnote 9 above.

17The constraints and incentives behind these cyclical mechanics in a market economy such as the U.S. will be addressed shortly, in the next observation 4 on collection of payments and in step 2 on payment arrears.
Under the separation pattern in Russia, the mechanics transpire in nominal terms. New invoices raise prices and exceed past invoices valued at the previous price level. Price increases make up the excess of new invoices over payments on past invoices. When spending grows (the government never failed to print money) and payments increase, enterprises raise prices higher so that new invoices exceed payments on past invoices almost continuously. Sometimes it takes a month or two for price increases in invoices to catch up with spending growth and payment acceleration. Of the 156 months during the period 1992-2004, here were 16 months when nominal receivables declined slightly for one month or more, including twice for two months and once for three months in a row, but their growth resumed at an accelerated pace afterwards. Over time, in the overlapping flows of invoices and payments, invoices not only exceed but continuously outgrow payments by price increases. This is the underlying mechanical meaning of the empirical observation in figure 7.1 that the outstanding balances of nominal receivables grow at the rate of price increases. In short, all price excesses are in invoices.

These mechanics and their interpretation in the next observation may seem to be overwrought, obscure, picayune, and distant from real life. Three pages later they will return to real life. They will connect figure 7.1 with the central theme in figure 1. They will connect price excesses in invoices over payments with the pendulum of the Russian economy in 1992-2007.

- Observation 4. Collection

Figures 8 and 5 hint, perhaps indicate, what strategies of U.S. firms and Russian enterprises stand behind their invoicing mechanics. One strategy makes possible the growth alignment of real receivables with real output in the U.S.. The other strategy, in Russia, makes possible the alignment of the indices of nominal receivables with the price index (which holds real receivables nearly stable). These strategies are summarized in the left and right side bars in Box 3. They compare how and when (and hence why) invoices exceed payments by output growth in the U.S. and by price increases in Russia.

Figure 8 plots the ratio of nominal receivables to GDP in 1990-2007 in the U.S. (figure 8.1) and in Russia (figure 8.2). Annual growth rates of real GDP serve as reference points. Since this ratio normalizes nominal receivables by GDP, it eliminates the influence of inflation. By itself, this measure merely supplements the findings already observed. The U.S. data in figure 8.1 infer that

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19 The constraints and incentives behind these mechanics follow in the next observation and the next step. Earlier, the sections on aggregate third party billing on pages 2-4 introduced how this mechanical process started.
(1) the ratio of nominal receivables to nominal GDP fluctuates within a stable narrow range of 17 to 23 percent in a cyclical pattern, hovering around 20 percent of GDP; and (2) therefore, smoothed over time, nominal receivables grow in alignment with nominal GDP. This implies again that real receivables grow in alignment with real GDP. In contrast, the Russian data in figure 8.2 reconfirm that receivables are detached from productive economic activity, the paths of receivables and GDP separate, and nominal receivables fluctuate randomly and widely between 18 and 46 percent of nominal GDP during contraction and recovery. But the ratio of receivables to GDP can be employed more usefully. It can serve as a proxy variable to explore different invoicing strategies.

As a measure, the ratio of receivables to GDP in figure 8 can stand as a proxy for the average collection period. This is a key variable under all patterns of trade credit. As the Glossary describes, the average collection period, also called the collection ratio or days sales outstanding (if one can pronounce that), is the ratio of nominal receivables to daily sales on trade credit. It usually calculates as the ratio of receivables to annual sales (or receipts) times 365 days. It reports how many days of unpaid sales (the balances of receivables—of invoices net of payments) are outstanding to collect the balances. The average collection period may be longer than what is sustainable. It is lengthier than a business can survive in the cash flow sense, pay its bills to suppliers and creditors, wages, and taxes, without going bankrupt. This is a vital (deadly) measure.

Figure 8.1 demonstrates the U.S. pattern. The ratio of receivables to GDP, the proxy for the average collection period, holds within a narrow stable range. The cyclical pattern of fluctuations is also visible. If the average collection period is short and stable, fluctuating cyclically within a narrow range, firms optimize cash flow. This means that sellers would let invoices exceed payments in alignment with output growth and not by sheer price increases.

One can apply the conversion procedure described in the footnote below to the data in figure 8.1. This yields the average collection period decreasing from 29 days in 1990 to 27 days in 1992-
1994, rising steadily with GDP growth to 37 days in 2000, and then gradually shortening to 31 days in 2003 and going up to 32 days in 2004. This is consistent with the pattern which Encyclopedia Britannica cites to typify trade credit in market economies. This is indeed the strategy of cash flow optimization: short collection periods, stability of payments collection, a narrow range, and a cyclical pattern.

Firms in the market economy strive to optimize their cash flow. This operation includes managing accounts receivable, that is, collecting payments and gearing invoices to payments collection. The average collection period is one of the major signs of the viability of the firm and a key indicator of its market valuation and credit worthiness. It literally pays to optimize the average collection period. Simpler yet, the firm cannot survive on income on the accrual basis alone. It is not sustainable. In brief, if its buyers do not pay their bills for a lengthy period (payments are in arrears), while the firm duly pays its bills within the due period, its net cash flow may run negative. When net cash flow is persistently negative, firms may face bankruptcy and no one would lend to them, or no one would lend them and firms may face bankruptcy, whichever sequence unravels. Most firms issue invoices in a cyclical pattern in order to receive payments within the due period and thus hold a manageable balance of receivables from the cash flow standpoint. Figure 8.1 implies that sellers make invoices exceed payments and increase the balance of receivables in alignment with output growth. They do not raise prices to make invoices exceed payments and expand the balances of receivables. Figures 6.5 and 7.2 testify to that in the U.S.

Figure 8.2 demonstrates the Russian pattern. The same procedure as above yields that the average collection period more than doubled from 24 days in 1991 to 51 days in 1992, shortened to 45-46 days in 1994-95 only to lengthen to 63 days in 1996, 66 days in 1997, and to a whopping 104 days in 1998. Then a reversal, down to 69 days in 1999 and 54 days in 2000 and gradually to 44 days in 2003 and 40 days in 2004. The last column of table 1 reproduces an incomplete series of the direct data derived by the Russian State Committee on Statistics from enterprise records. It reveals an even higher length of the average collection period (Days of Sales Outstanding, or DSO). This indicator rises from 68 days in 1995 to 99 days in 1996 to 136 days in 1997, and 122.8 days in 1998. The reversal comes between 1998 and 1999. The average collection period declines to 93.7 days in 1999, 74.5 days in 2000, 67.8 days in 2001, 64.0 days in 2002, 59.2 days in 2003, 55 days in 2004, and 61 days in 2005.

If the average collection period is lengthy and fluctuates separately from output, enterprises maximize nominal receivables subject to how much subsidy they expect to enforce in lieu of payments. They make invoices exceed payments to that end by price increases which amass the balance of receivables. It is this practice that undergirds the alignment of receivables and price indices in figure 7.1. It also indicates that the causation in figure 7.1 goes from growth of

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21 Encyclopedia Britannica in the article “Business Finance,” section “Accounts Receivable,” summarizes that the ratio of receivables to sales in U.S. manufacturing ranges between 8 and 12 percent, yielding the average collection period of approximately one month (around 36.5 days, to be exact).

22 The next step (Step 2, two pages below) explicates these accounting, incentives, and constraints in detail.
receivables (indeed from invoices) to price indices, not vice versa.

The mechanism of this subsidy extraction was introduced on pages 2-3 and in figure 5. Figure 5 demonstrates how during the period from 1992 to 1998 the outstanding balances of receivables matched over time the sum of various subsidy channels, such as tax non-remittance and monetization multiplied through the banking system. This mechanism became more complicated in 1999-2007, but the pattern remained within, of which later. The next steps through Box 1 and its accompanying figures 9 to 15 explore and document the mechanism of this subsidy extraction in detail.

- Observation 5. Indexation

The final observation of step 1 is straightforward, if unconventional. Box 3 summarizes it at the bottom. Optimization of cash flow in the U.S. implies that firms index invoices to payments and through them to spending in the economy (that is, to the combined changes in the money supply and the velocity of its circulation). In the process, output and prices increase or decrease in one or another combination between them in the cyclical pattern. This indexation to payments and ultimately to spending does not let invoices exceed payments by separate price increases. That would expand the balance of receivables and undermine cash flow optimization. This is not sustainable. Firms could not survive thus.

In Russia, enterprises maximize nominal receivables by making invoices outgrow payments via price increases. This implies that, as they increase prices to make up the balances of nominal receivables, enterprises index invoices not to payments and hence not to spending. They index invoices to fiscal targets—how much subsidy enterprises expect to enforce. They learn by doing, by trial and error, as described earlier (see pages 2-4 above), and learn continuously over time, what these fiscal targets are. Those who learn survive and socialize the experience on the national scale. This is the collective survival of the fittest.

Ultimately, enterprises index invoices to fiscal expectations. In this pattern, price increases are detached from spending. Excess of invoices over payments, which is made up of price increases, is detached from spending. Fiscal expectations bypass current spending (money times velocity and their combined changes) and generate inflationary expectations directly\(^2\), through price increases.

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\(^2\) A burgeoning literature inaugurates a new wave, which its practitioners call “the fiscal theory of the price level.” It is possible that the Russian experience may fit as a special case with its own systemic particulars (the subsidy from below) and mechanics (trade credit). Only specialists in this innovative, sophisticated, and extremely technical (not to say inscrutable) field can adjudicate if their approach is what explains the Russian case. The present authors believe so, but a true test would require substantial modeling and econometric analysis, beyond the scope of this book. Of a large body of literature, one can list only a few references here. Thomas J. Sargent and Neil Wallace, “Some Unpleasant Monetarist Arithmetic,” Federal Reserve Bank of Minneapolis Quarterly Review 5, no. 3 (Fall 1981): 1-17; Kiminori Matsuyama, “Endogenous Price Fluctuations in an Optimizing Model of a Monetary Economy,” Econometrica 59, no. 6 (November 1991): 1617-1631; Eric M. Leeper, “Equilibria Under Active and Passive Monetary and Fiscal Policies,” Journal of Monetary Economics 27, no. 1 (February 1991): 129-147; Michael Woodford, “Price Level Determinacy Without Control of a Monetary Aggregate,” Carnegie-Rochester Conference Series on Public Policy 43 (December
in invoices in outgrowth of payments. These are self-fulfilling inflationary expectations. They materialize in the outstanding balances of receivables.

The simplest way to describe this procedure is to view price increases in invoices as a price surcharge added to the prior price listed in past invoices. This is a third party surcharge, to be billed to the government and the public at large (households, consumers) in pursuit of the subsidy. One more inference which may seem outlandish but, on reflection, fits. Since this subsidy is collected (see figure 5 again), the price surcharge in invoices constitutes a special tax levied by enterprises on the government and, eventually, on consumers and households. It acts like a quasi-value-added tax on sales over the stages of processing. It is quasi and not genuine value-added tax in the national income accounting sense because this tax is additive on enterprise fiscal expectations, not multiplicative at a preset rate. Hence it applies equally to output with the positive and the negative value-added. Which makes this unique tax from below (the endogenous tax) especially distortionary for, on top of income redistribution, it finances and perpetuates value subtraction.

The relevance of these tedious observations comes to the fore with a quick reality check. It is the confluence of figure 1 and figure 7.1. Figure 1 relates the pendulum of Russia’s GDP in 1992-2007 to the index of the ratio of money balances to receivables. Figure 7.1 relates the index of receivables and the price index. Since the index of receivables merely embodies price surcharges in the balances of invoices in excess of payments, which makes the two indices match, the index of the ratio of money balances to receivables in figure 1 acquires real-life meaning. It stands for the real money balances deflated by the price increases in excess invoicing, in pursuit of the subsidy. Fiscal expectations of the subsidy generate self-fulfilling inflationary expectations, namely surcharged invoices. They materialize in the outstanding balances of receivables in figure 7.1, whence they are transplanted as the denominator in the index of the money balances to receivables in figure 1.

Figure 1 relays how these inflationary expectations embodied in receivables interact with nominal spending (the money supply times the velocity of money circulation). They outgrow nominal spending and contract real money balances in 1992-98. When fiscal (and hence inflationary) expectations subside in 1999-2007 and the index of receivables decelerates, nominal

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24Surcharge and surcharged invoicing seem to be the best terms to express this unique, perhaps ineffable process. Other terms can include overcharge, overbill, overinvoice, overdraft invoicing, excess invoicing. The term surcharge is mechanical, value-neutral, and contains marginal (additive) and fiscal connotations.

25The persistence and extent of the negative value-added, or value subtraction, in the Russian economy will be discussed later in this chapter.

When the real money balances contracted in 1992-98, real output (GDP) contracted in alignment. When the real money balances recovered in 1999-2007, real output (GDP) recovered in alignment, given the idle supply capacity after the great contraction and improved incentives. Less subsidy extraction, less socialism, more production.
Step 2. The payment jam

What happens when receivables amass? One can internalize the problem by setting up and running a business on this page. Then tables 4 to 6 aggregate this case and apply it to Russia.

Suppose revenues (gross sales, receipts) are $100,000, expenses $85,000, and net income $15,000. At the end of the period, the outstanding balances of receivables were $9,000, of trade payables $6,000, and of taxes payable $3,000. Receivables constitute 9 percent of sales, implying 33 days of the average collection period. Depreciation aside, if total (trade and tax) payables are equal to receivables, net cash flow is equal to net income (the Glossary provides definitions).

Suppose in the next period businesses surcharge invoices. In nominal terms, revenues and expenses double, trade payables triple, taxes payable increase by one-third, and receivables grow sixfold. Revenues are $200,000, expenses $170,000, and net income $30,000. The outstanding balances of receivables are $54,000, of payables $18,000, and of tax payables $4,000. The average collection period jumped to 99 days ($54000/200000 x 365). Its counterpart, days payables outstanding, rose to 39 days ($18000/170000 x 365). In both cases, all wages have been paid off.

The flow of receivables (its increment) during the period was $45,000, the flow of trade payables $12,000, and the flow of taxes payable $1,000. These are the four numbers to reckon with: net income is $30,000, the flow of receivables, $45,000, the flow of trade payables, $12,000, and the flow of tax payables $1,000. In the cash flow sense, net income less receivables is -$15,000. This is a minus sign, not a dash. This is the income yet to be collected while the cash gap widens. The flow of trade payables and tax payables compensates for this gap but incompletely.

- Net income $30,000
- Minus Accounts Receivable (flow) $45,000
- Plus Accounts Payable (flow) $12,000
- Plus Taxes Payable $1,000
- Equals Net Cash Flow -$2,000

This is a minus sign. Net cash flow turns negative. With negative net cash flow, this business has no cash profit for its owners. Moreover, minus $2,000 means $2,000 less than needed to pay the bills of the period. If the dynamics of negative net cash flow persists, this business cannot pay all its bills to suppliers, lenders, the government, and workers in the due period. It draws on cash balances in the bank and runs them down. This is not sustainable. If no financing flows in and creditors (suppliers, lenders, or the government) call in the debts owed them, this business is bankrupt.

The same calculations apply to the aggregate economy, the U.S. in table 4 and Russia in tables 5 and 6. They will enter the discussion shortly. Meanwhile, let us try to save the above business. Mechanically, there are four potential responses to the problem of negative net cash flow:
reduce receivables, obtain outside financing, increase trade payables, and increase tax payables.

* Potential responses

(1) One can reduce receivables by factoring them (selling at a discount to factor agencies) or by altering the invoicing strategy towards cash flow optimization described above. Factoring can help occasionally, not continuously. It has no economic rationale continuously for it amounts to deflating invoices after inflating them. In the long run, it is efficient to alter the invoicing strategy and stop surcharging invoices. This solves the problem once and for all. But this is a secular matter of economic system, policy, incentives, and choices. It is beyond mechanics.

(2) One can obtain outside financing by borrowing and/or issuing equity. Both are problematic when net cash flow is negative. The net discounted present value of a profitless business is zero. Financial markets measure earnings on the cash, not accrual, basis. Negative earnings per publicly offered share on the cash basis do not sell shares. Borrowing increases future payables (interest and principal). It cannot be a sustainable solution to the negative net cash flow problem. Bank lending in this situation on a national scale is risky beyond the banking system. Banks may rollover non-performing loans to business running negative cash flow but this is terminal. Potential non-performing loans expose banks themselves to insolvency and jeopardize the deposit base. Furthermore, borrowers’ failure to make interest payments in due intervals may cause liquidity frictions and bank panics, with subsequent spillovers to the monetary system and the economy at large. Only a continuous government subsidy can induce continuous lending, credit rollover and extension under these conditions.

(3) One can increase trade payables. Initially, negative net cash flow does not halt operations because the business can draw on the money balances in the bank and dispose of other assets. After cash balances and other assets are run down, bills cannot be paid in full within the due period. Payables fall into arrears. Thus this business does automatically increase trade payables when its net cash flow turns negative. This happens by default. Unpaid bills automatically increase the outstanding balance of payables. Payment arrears (increased trade payables) turn net cash flow non-negative. Suppose in the example in the box on the previous page, payables quadrupled instead of tripled. Days payable outstanding rose to 52 days (24000/170000 x 365). Net cash flow from operations increased to $4,000 (30000 - 45000 + 18000 + 1000). Receivables became aged (88 days in the example in the box above), payables are in arrears (52 days), and operations can continue and even earn positive net income in cash. (Consult the Glossary for definitions of accounts receivable aging, aged receivables, and related terms). Increasing trade payables helps trade debtors in the short run. This practice can last as long as trade creditors can and will sustain aging and accumulation of their own receivables. Eventually, on a broader scale, trade creditors may find themselves in the same box on the previous page. Their own flow of receivables may exceed net income and net cash flow may turn negative. If and when trade creditors call in the debts owed them, bankr uptcy arrives.

(4) One can increase taxes payable. The business can stop or delay paying corporate income or profit tax. For quick cash, it can stop or delay remitting payroll and income taxes withheld from
workers and value-added or sales taxes collected from consumers. This is illegal. If the government can enforce tax remittance and tax payments, it will, and this business will be no more.

- Actual observations

The same considerations apply to national economies. Tables 4 and 5 compile the annual flows of funds of nonfinancial firms or enterprises in the U.S. and in Russia in 1992-2003. Table 6 converts the Russian data into the statement of cash flows to sharpen the point.

The U.S. data in table 4 flatly rule out negative net cash flow arising from the amassment of receivables. In accordance with the cyclical pattern of trade credit, the flow of receivables was negative during the years of economic slowdown (the years with some quarters of recessions). Most importantly, net income of firms exceeded the annual flows of receivables by about an order of magnitude on the average during 1992-2003. The flows of receivables slightly exceeded the flows of trade payables. There were no payroll arrears to register in the national statistics. The flows of taxes payable were on the average less than one percent of net income and signified regular tax liabilities in the process of payment. The flows of receivables exceeded the sum of the flows of trade and tax payables. This difference, to be subtracted from net income in calculating net cash flow, is minuscule in comparison with net income itself. In all, net cash flows were on par with net income after minor adjustments for the flows of receivables and trade and tax payables.

When individual U.S. firms or industrial segments occasionally fell into a negative net cash flow position, like public utilities in California during the electricity crisis of 2001, it was due to under-charged, not surcharged, output prices and to low, not massive, receivables. Negative net income on the accrual basis caused negative net cash flow despite timely cash payments by buyers. Bankruptcies in the U.S. stem from negative net income, not from negative net cash flow. The latter is only a mechanical outcome of the former.

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26Russian sources contain two data series on receivables and payables. The broader series includes trade credit between the holding companies and their wholly owned subsidiaries. The narrow series excludes it. All our figures and tables 1 and 2 employ the narrow series. It is more suitable for analytical purposes because internal receivables between the holding companies and their subsidiaries would not influence third party billing and subsidy extraction. Tables 4 and 5 use the broad series because it is more suitable for the complete flows of funds.

27This is a mechanical result typical for most economies. Sales to the government and some sales to households (e.g., utilities and communications) are conducted on trade credit. They enter accounts receivable. There are no accounts payable to match because the government and households are not treated as firms in these tables. In Russia, for the same mechanical reasons, receivables exceeded payables in the 1990s. Since 1999, trade payables slightly exceeded receivables in the Russian accounts. This fact is of little consequence but it fits the overall reversal of accounts in late 1998. One untested explanation points to government budget surpluses. They started after the Central Bank policy in September-December 1998 mandated repatriation and sales of foreign exchange revenues by exporters. This version of capital controls (of outflows, not inflows) liquified enterprise cash balances in the banks, which, in turn, empowered the government to enforce tax remittance by enterprises and run budget surpluses. The latter, in their own turn, enabled the government to pay its bills to enterprises for various supplies within the due period. This reduced receivables across industries without affecting payables. In a chain reaction, it then decelerated both payables and receivables, but the combined result was that the outstanding balances of payables still exceeded those of receivables.
Russia’s data in tables 5 and 6 imply that net cash flow was bound to turn negative in 1992-1998 for all or at least some industries. This did not happen because of the amassment of payables, both trade payables and tax payables. To highlight this observation, figure 5 pulls the receivables data hidden in line item 10 of the flows of funds in table 5 and lists it directly under the data on net income in the statement of cash flows in table 6. Ditto for the data on trade payables and tax and payroll payables.

The flows of receivables exceeded net income in 1994, 1996, 1997, and 1998 for the entire economy. The flows of receivables were almost as high as net income in 1992, 1993, and 1995. Given disproportional distribution of receivables in relation to net income by industries, the flows of receivables significantly exceeded net income for many enterprises and in a number of industries. Those were primarily the net trade creditor industries such as fuel energy, electric power, engineering (machine building), construction, and transportation.

Recall from table 4 that in the U.S. the flows of receivables constitute about 10 percent of net income. In Russia during 1992-97, the flows of receivables exceeded net income by 25 percent; in 1992-98, by a factor of 2.7. Since 1999, net income steadily exceeded the flows of receivables by a factor from 1.6 to 2.9. Thus over the period 1992-1998, net income of Russian enterprises wound up in receivables, not cash. In terms of cash, net income of Russian enterprises was negative. They were able to operate entirely on cash from trade payables and taxes payables left not paid, which compensated for cash not received from receivables.

The flows of trade payables roughly corresponded to the flows of receivables. The flows of tax payables, that is, tax arrears and tax non-remittance, grew so fast that they caught up with net income in 1996. The flows of tax non-remittance constituted a whopping 85 percent of net income over the period 1992-1998 (474.5 and 561.3 billion rubles, respectively). Recall that the flows of taxes payable hover around one percent of net income of U.S. businesses. Tax non-remittance supplemented trade payables in counter-balancing receivables. This applies especially to net trade creditor industries referenced above (fuel energy, electric power, engineering, construction, and transportation), whose receivables exceeded payables. Tax non-remittance was a major source of positive net cash flow which enabled enterprises to render net income (profits) in cash.

The chain reaction

One man’s receivables are another man’s payables. Money is fungible. These two basic propositions explicate that maximization of receivables (subject to the expected subsidy) was the source of the amassment of trade payables and that tax arrears supplemented payment arrears. As

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28 For the distribution of the balances of receivables and payables by industrial sectors see, e.g., Russian State Committee on Statistics, Rossiiskii Statisticheskii Ezhegodnik 1997 (Moscow, 1997), p. 538; Russian State Committee on Statistics, Rossiiskii Statisticheskii Ezhegodnik 2000 (Moscow, 2000), p. 536.

29 Alternative dates are used for comparison because net income in 1998 was negative. The point holds with and without inclusion of 1998.
noted earlier, the average collection period expanded from 24 days in 1991 to 51 days in 1992, shortened to 45-46 days in 1994-95 only to lengthen to 63 days in 1996, 66 days in 1997, and to a 104 days in 1998. It reversed to 69 days in 1999 and 54 days in 2000 and gradually decreased to 44 days in 2003 and 40 days in 2004. The direct official data in the last column of table 1 cite the rise from 68 days in 1995 to 99 days in 1996, 136 days in 1997, 122.8 days in 1998, and a reversal to 93.7 days in 1999 with the subsequent decline to 74.5 days in 2000, 67.8 days in 2001, 64 days in 2002, 59.2 days in 2003, 55 days in 2004, and 61 days in 2005.

Since 1992, accounts receivables became and remained past due, or aged. Their counterpart is payment arrears. Days payable outstanding measure the average payment period (or non-payment period, as it were) the same way as the average collection period measures the unpaid length of receivables. Days payables outstanding doubled from 17 days in 1991 to 36 days in 1992, increased gradually to 55 days in 1996 and 61 days in 1997, and leaped to 102 days in 1998. A downward reversal started slowly afterwards, 72 days in 1999 and 56 days in 2000 and gradually shortened to 45 days in 2003, and 40 days in 2004. Since 1992, payables were in arrears.

Receivables amassed due to surcharged invoices generate payables that fall into arrears. It follows from the above discussion that maximization of receivables increases payables on two intertwined counts.

1. First, when receivables amass among sellers, trade payables amass among buyers. Aged receivables generate payment arrears.

2. Second, sellers themselves delay payments and thus increase payables and turn them into arrears to compensate for cash shortfalls when receivables take up the bulk of their net income.

A critical mass of payment arrears and aged receivables creates a payment jam. This is a situation on the brink of cessation of operating activities. A marginal increase in payment arrears improves the cash flow position of buyers but worsens the cash flow position of sellers to the point where their net cash flow runs down to zero. They, in turn, have to increase their payment arrears to stay afloat. But this worsens the net cash flow position of their respective sellers and runs it down to zero. One can extend this exercise in rounds through the flow of funds until operating activities of some clusters of enterprises cease. This is a chain reaction.

There is a recourse. Enterprises can maximize tax arrears, tax non-remittance.

**Step 3. Third party payables**

One can think of trade payables as second party payables. Most enterprises except retailers, various services, etc., are both sellers of output and buyers of inputs. In the flow of funds over the
stages of processing, sectoral increases in payment arrears unleash a chain reaction of cash flow shortfalls. Tax arrears, in contrast, can be viewed as third party payables. They harm the cash flow position of the government, reduce revenues and increase the budget deficit, which, in turn, delays government procurement payments, ages receivables of government suppliers, and hurts their cash flow position. But the government can sell bonds and/or print money to finance its budget deficits.

Tax non-remittance and expected monetization not only offer enterprises a supplemental strategy of improving their cash flow position. They also constitute a pure subsidy. This is why enterprises which maximize profit in cash terms must maximize tax non-remittance.

Other third party payables include payroll arrears. Enterprise owners and managers treat them similarly to tax arrears but accumulate them to a lesser extent, if they want to maintain their core labor force. We include payroll arrears in tables 5 and 6 but omit them from diagrams because of their relatively small size. The operational word is relative. By the end of 1998, payroll arrears constituted 3 percent of GDP, a significant income transfer from workers to enterprise owners and managers. Unfortunately, their size is still insufficient to be visible in diagrams due to the much larger size of other variables such as the outstanding balances of receivables, tax non-remittance, and monetary aggregates.

Tax non-remittance is separate from tax evasion. It adds to tax evasion. Tax non-remittance is explicit and recorded. Enterprises withhold payroll and income taxes from workers and collect value-added and sales taxes from consumers. After that, enterprises impound part of this tax collection. In addition, they impound and do not remit their corporate income or profit tax which is also collected from households—consumers, workers, and shareholders. In short, tax non-remittance is explicit confiscation of the tax base.

Table 7 documents that the outstanding balances of tax arrears in Russia rose from 0.6 percent of GDP in 1992 to 18 percent of GDP in 1998 and then reversed and declined to 2.2 percent of GDP in 2004. The outstanding balances of taxes payable in the U.S. ranged between one and 1.5 percent of GDP.


32We list managers on par with owners because, in Russia, state-owned enterprises did not remit profits or dividends to the government and, in terms of accrual of net income, qualified as private property of managers. One can also add state managers such as ministers of nuclear energy, rail roads, etc. State enterprises also partially qualified as private property of managers in terms of exclusive control of the disposal value of net assets (equity). The existence of assets stripping of state enterprises effectively disqualifies the government as the owner. From this perspective, privatization of productive assets in Russia in the 1990s was nearly universal.
Figure 9, panel 1 plots the relationship between tax non-remittance (the balances of tax payables, tax arrears) and the outstanding balances of receivables. This relationship is direct, strongly correlated, and consistently proportional.

The balances rather than flows are employed to smooth short-term lags between these variables without arbitrarily choosing a particular lag. The data are monthly from January 1992 through July 1999. This choice of dates takes Russia from the beginning of liberalization of transactions through the great default of August 1998 and twelve months of its aftermath. The reversal of policies, of which shortly, occurred in September-December 1998, and economic recovery started in 1999, but many empirical structural relationships of 1992-98 between receivables, tax non-remittance, and monetization maintained their momentum. Later on, figure 15 will extend the same bivariate regressions as in figure 9 through the end of 2007. It will cover the entire period 1992-2007 and show the actual reversal of some of the relationships since mid-1999. Meanwhile, to give a pointer, all panels of figure 9 contain an arrow which points to January 1999 when the new policy (of which, again, shortly) was fully installed.

The bivariate ordinary least squares regression in panel 1 shows that most observations except the last months of 1997 fit the regression line closely. The functional form is quadratic, to check for possible acceleration, deceleration, and non-monotonic concavity and also to be consistent with other polynomial regressions in figure 9. But it is almost identical with the linear regression plotted with the same data in panel 1A of figure 9. Both regressions account for 99 percent of the variation between receivables and tax non-remittance.

These panels do not prove that amassment of receivables causes tax non-remittance. Correlation is not a causality. But no proof of a one-directional causality is necessary. On the contrary, the relationship between the balances of aged receivables and tax arrears form a feedback loop as depicted in arrow 2 and the sequence of arrows 8 and 1 in the flow chart in figure 5. Enterprises maximize receivables subject to expected subsidy (fiscal expectations), while tax non-remittance is part of this expected subsidy in the data plotted in figure 5. An increase in tax non-remittance raises subsidy expectations and stimulates surcharged invoices (arrow 8 in the flow chart in figure 5) which build up aged receivables (arrow 1 there). In turn, amassment and aging of receivables render net cash flow negative without an automatic increase in trade payables and supplemental maximization of tax non-remittance (arrow 2 in the same flow chart). Figure 9, panel 1 offers evidence for these relationships in both directions and for the entire feedback loop.

Under the payment jam, on the margin, the government cannot enforce tax remittance in full. All fiscal instruments are blunted. (It took the Central Bank of Russia to invent a sharp one in late

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33Panels 1A to 3A in figures 9 and 15 replicate the same data as panels 1 to 3 in the linear functional form. The comparison checks if the polynomial regressions were used for a better fit, given the complex dynamics of the data under changing policies, or were selected to manipulate the data for the benefit of the authors’ hypothesis. The linear regressions distinguish when they find the same relationship as the polynomials but a weaker fit and when they do not fit at all due to the reversal of policy followed by the reversal of relationships between key variables. This tedious background comparison of statistical tests serves the principal intention of this work to discover, not to advocate.
1998 and reverse the situation, but of this in due course). Of the possible menu of enforcements, one can think of fines and penalties, sequestration of enterprise money balances in the bank, lien and seizure of assets, placing in receivership, forced bankruptcy, prosecution of owners and managers, and any other legal or fiscal recourse. During 1992-98, especially in 1996-98 when tax non-remittance exacerbated, the government tried, or at least tried to apply, all of these measures. They temporarily improved tax remittance by individually targeted enterprises, for a few months, but had all failed over time.

On the national scale, the effect of enforcements was even smaller. Of the 156 months of 1992-98, there were only six intermittent months (December 1994, June and September 1995, December 1997, and June and December 1998) when the balances of tax arrears slightly declined, never two months in a row, and their build up resumed thereafter. On the national scale, under the payment jam, when enterprise X had to remit more taxes, it had to simultaneously reduce payments to enterprise Y, which then reduced its own remittance, netting little, if anything, for the government enforcement effort.

Not that the government did not try. Not that it was soft or weak-willed. Rather, it was impotent. Piling up fines and penalties could not induce payments when, as table 7 shows, tax arrears in 1992-98 were growing unabated anyway. The data in table 7 suggest why sequestration of enterprise money balances in the banks was not workable. Tax arrears were outgrowing enterprise money balances rapidly in 1992-98. Already in 1994, the ratio of money balances to tax arrears fell to two. The government had to seize 50 percent of enterprise money balances to discharge tax arrears. But then the payment jam would have deteriorated, payments shifted to barter, and the tax base severely undermined. After 1994, even that sequestration was not possible. In 1995, tax arrears were equal to enterprise money balances. The government could hypothetically seize bank accounts and thus close down operations throughout the economy, but it did not. The government could apply this measure to selected enterprises as a deterrent to all, but it was not credible exactly because it could not have been applied to all or many, for reasons just stated. Since 1996, the sequestration option evaporated altogether when tax arrears significantly exceeded enterprise money balances.

Lien and assets seizure, placement in receivership, forced bankruptcy, change of ownership, changing the form of ownership, prosecution of owners and managers, etc., are overlapping measures. In practice these measures meant re-nationalization. Apart from political constraints, 34 re-nationalization of enterprises and replacement of managers could not enforce tax remittance without changing incentives throughout the economic system. This implies no change without preventing surcharged invoices and accumulation of receivables. Both privately owned enterprises

34 The government whose claim to existence was liberalization and privatization, could not re-nationalize enterprises and remain in power. Moreover, tax non-remittance was similar among enterprises which were de jure state-owned fully or partially (e.g., in oil, natural gas, electric power, and other industries) and also among profit-making government agencies (nuclear energy, rail roads, etc.). Re-nationalization of state-owned enterprises is absurd even under the Russian economic system. In sum, the government could not seize assets because it either already owned them, slated them for privatization, or just privatized them.
and those owned de jure by the government acted in the identical mode within the same network. Different ownership, different owners, and different managers could not change the underlying systemic incentives. They indeed did not when the government made such changes from time to time in various industries.

Overall, under the payment jam, on the margin, any fiscal crackdown could improve tax remittance in specific sectors in the short run but jeopardize the flow of payments across the economy and the tax base in the long run. A major attempt to enforce tax remittance would have substituted additional payment arrears for tax arrears. A spillover effect through the flows of funds across industries would have brought down the net cash flow positions of net creditor enterprises and industries. This would have halted economic activity and wiped out the tax base.

The government options were between partial tax remittance by enterprises and the loss of the tax base. The options of the enterprise network were between partial tax remittance to the government (that is, maximization of receivables and the subsidy subject to fiscal constraints) and unpredictable consequences otherwise. Both the government and enterprises chose partial tax remittance. They were continuously engaged in the game of chicken over the extent of tax remittance, not over its completeness. As a rule, the government blinked.

This symbiotic arrangement worked for both until it engendered the great default of August 1998, of which shortly. The situation reversed in late 1998 after the Central Bank mandated repatriation and domestic sales of foreign exchange revenues. This reduction of capital outflow rapidly increased enterprise money balances (see table 7). This, in turn, enabled the government to enforce more tax remittance in 1999-2000 in the flow sense, slow down the buildup of tax payables, and even reverse the trend and draw down the outstanding balances of tax arrears since 2001. This time, the enterprises blinked, first specific exporters, then the export sector at large, and, eventually, the entire enterprise network.

Step 4. Third party debt transfer

Figure 10.1 extends this exploration to one of the consequences of surcharged invoicing, maximization of receivables (subject to expected subsidies), and tax non-remittance. It links tax non-remittance to government debt in terms of bonds. The monthly plot starts in January 1995 and ends in August 1998 when the government repudiated its bonds and defaulted. The two curves converge in 1995-96, slightly diverge in 1997, when debt accelerated relative to tax arrears, and converge again ruble for ruble in 1998. They reach the same amount of about 430 billion rubles at the time of the default. One can conclude that in the absence of tax non-remittance, which is a revenue shortfall, and barring additional spending, there would have been no need to issue bonds. The default of August 1998 would not have happened.

A revenue shortfall due to tax non-remittance created additional budget deficit which needed

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financing. All other sources of budget deficit being equal and another source of financing, monetization, being also equal, the government had to issue bonds to finance this additional budget deficit. That is, the government had to securitize tax non-remittance.

Tax non-remittance is a pure subsidy. It is a transfer of income from workers and consumers to enterprise owners and managers. In the flows of funds, it is also a transfer of income from the government as the recipient of tax revenues, to the enterprise network. It is a subsidy because it would have been the same amount if all taxes were remitted and the equivalent outlay given to enterprises.

The only difference with the latter case is that the subsidy via tax non-remittance is taken, not given. This subsidy is forced onto the government in the symbiotic arrangement discussed above. The government was then forced to securitize the tax non-remittance subsidy. Figure 10.1 merely illustrates this point.

Enterprise arrears were billed to the government via tax non-remittance and then charged to bond-holders when the government defaulted. This is a two-stage third party debt transfer.

Figure 10.2 broadens the theme of third party debt transfer. It shows that from 1994 until early 1998 the outstanding balances of receivables matched ruble for ruble the balances of total government debt such as bonds and money balances. The claims of the enterprise network on the government subsidy, which is what receivables are, matched the aggregate government debt. can observe in figure 10.2 that the growth of surcharged invoices, congealed in the stock of receivables, accelerated over time in 1994-98, except for the second half of 1997, and exploded in the first half of 1998. The growth of government debt moved along the same trajectory, but slowed down in the first half of 1998. Thus came the time when the government could no longer place additional bonds to cover the growing tax subsidy and its commensurate true budget deficit. There is always an upper bound at which the public is willing to hold government bonds. After this upper bound has been reached, a default occurs in one or another form, usually an implicit default, when the government prints money to monetize the debt.

The government could print money and substitute one form of debt, bonds, with another form, money. That option was not feasible because the Russian government ran a pseudo-fixed (pegged) exchange rate, and printing more money would have crashed the currency even before the devaluation of August 1998 (simultaneously with the default on domestic government debt). An early devaluation would have led foreign and domestic bondholders to dump bonds. This, in turn,

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36 They diverged on the eve of the default of August 1998 (figure 10.2 plots August 1998 as a separate observation point on par with annual points in previous years). Accumulation of receivables accelerated at that point. If one believes in rational fiscal and monetary expectations with perfect foresight, one can infer that enterprises expected the default, currency devaluation, and subsequent monetization and thus expanded their subsidy claims in advance.

would have left the government no other option but more monetization. Replacing the bulk of the bond stock with freshly printed money would have led to more than a mere hyperinflation—to a complete loss of currency, the tax base, and the ability to spend, when the population would have shifted to dollars as the currency of choice and abandoned rubles. The real choice was between repudiating government bonds before, or at the same time with, devaluation, and government abdication and chaos.

Empirically, figures 5, 10.1, and 10.2 are consistent. The balances of receivables correspond separately to the sum of government subsidy and the sum of government debt. The former sum consists of tax non-remittance and the monetary aggregate M2. The latter sum consists of government bonds and the monetary aggregate M2. Since the outstanding balances of tax arrears and government bonds grew in alignment, the figures are consistent. Third party debt transfer is the other side of the coin of aggregate third party billing.

**Step 5. Forced monetization**

A striking feature of panel 2 of figure 9, which also shows in figures 5 and 10, is that tax non-remittance and the money stock M2 were long-term complements and short-term substitutes in 1992-99. They grew in tandem at the same long-term rate and at different short-term rates. In 1992-95, money grew faster than tax non-remittance. In 1996-98, at a time of rapid bond financing of budget deficits, tax non-remittance grew faster than money. Since late 1998, money growth accelerated again relative to that of tax non-remittance. The semi-concave, semi-convex curve in panel 2 of figure 9 fits the close correlation between the balances of tax arrears and money balances on identical scales. The third degree polynomial formula accounts for 98 percent of the variation of monthly observations. Most observations are on or close to the regression line.

A linear regression in panel 2A of figure 9 accounts for 90 percent of the variation. Linearization of this relationship between tax non-remittance and the money balances makes vivid their long-term convergence in 1992-99. To wit, they grew together ruble for ruble smoothed over time in the long run, substituting for each other ruble for ruble in the short run, as if they were fungible in the fiscal pool. And they were indeed, via endogenous determination at the margin, in the continuous–daily and hourly–process by trial and error. At the margin, enterprises increase receivables by $1 and increase tax non-remittance by $1 and they wait. If no additional $1 in credit follows, they stop increasing receivables. If $1 in credit expansion follows to reduce $1 in tax non-remittance (to increase tax remittance by $1), enterprises increase receivables by the next $1 and increase tax non-remittance by $1, and so on. This is why there was ruble-for-ruble substitution in tax non-remittance and the money stock during this period. It is not because the government decides ex ante to split the subsidy 50-50 between the channels of tax non-remittance and credit, but because the endogenous enterprise behavior at the margin leads to this outcome. Enterprises do not split the subsidy 50-50 by different channels on purpose. They are indifferent concerning the composition of the subsidy, because a ruble is a ruble. But their behavior within the systemic mechanism achieves this split and the ruble-for-ruble substitution between channels of the total subsidy.

Arrows 4 and 5 in the flow chart in figure 5 capture this long-term and short-term feedback.
loop. It is not surprising that the government monetized budget deficits created, among other sources, by tax non-remittance—hence the plus sign from non-remittance to money. It is also not surprising that monetization dissipated the payment jam and reduced tax non-remittance in the short run—hence the minus sign from money to tax non-remittance. But figure 10.1 suggested that bond receipts roughly matched tax non-remittance, which looked like their financed budget shortfalls from tax non-remittance. Why this double coincidence between money growth and tax non-remittance and between bonds and tax non-remittance?

There is no double indemnity. The government does not finance the fiscal cost of tax non-remittance twice, by issuing bonds and money. Recall the short-term trade-offs between money growth and that of tax non-remittance in panel 2 of figure 9 and other figures. When the money supply increased more, tax non-remittance increased less, and vice versa. One suggestion reconciles all the above observations. Under the payment jam, on the margin, a ruble of bonds financed a ruble of tax non-remittance and a ruble of money growth financed a ruble of tax remittance. There was more subsidy than even a reconstructed budget would tell, roughly a double amount.

Consider a hypothetical case of total tax revenues transmitted through enterprises (no personal income tax and other taxes paid directly by households, no non-tax revenues).

Option 1: Tax non-remittance is 50 percent of taxes withheld and collected. Budget expenditures are equal to the total tax levy. The budget deficit, equal to 50 percent of expenditures and 100 percent of revenues, is securitized and monetized. Suppose there is an even split in financing budget deficits between bonds and seigniorage, 25 percent of expenditures each. Monetization of budget deficits requires direct seigniorage ruble for ruble.

Option 2: The government gives enterprises a subsidy in the amount of 25 percent of taxes withheld and collected. This subsidy consists of 12.5 percent of this amount in currency printed by the Central Bank and transmitted to banks for enterprise credit and 12.5 percent multiplied through the banking system by a factor of two and extended to enterprises as credit (for simplicity, we leave aside the issue of reserve requirements). For this, enterprises must remit, and the government can enforce this remittance, 25 percent of taxes withheld and collected in addition to the 50 percent in the first option. The official budget deficit, equal to 25 percent of expenditures and 33 percent of revenues, is securitized. The difference between the two options is that the combined fiscal cost is 50 percent of expenditures in the first case and 37.5 percent of expenditures in the second case.

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The official budget numbers are of little use until and unless Russian fiscal accounts, especially for 1992-98, are reconstructed. Due to revenue offsets, which were treated as cash on the revenue side but were not accounted for on the expenditure side, the budget deficit was understated by about 5 percent of GDP in various years. Quasi-fiscal subsidies from the Central Bank to enterprises were not accounted for. Foreign and domestic borrowing was treated as revenues, not financing. Sale of liabilities such as bonds was treated as sale of assets on the revenue side. The list can go on and on. In all, the debt accounts do not match the fiscal flow accounts by a wide margin. The government part of net domestic assets on the balance sheet of the Central Bank, the amounts of publicly held government bonds, and foreign debt raised in 1992-98 do not match cumulative budget deficits in 1992-98. The default of August 1998 buried these discrepancies for posterity.
The subsidy via tax non-remittance and the combined subsidy via tax non-remittance and financing additional tax remittance are the same. If one counts, as the practice of Western economies suggests, the entire money stock as implicit government debt, the debt created by both options is also the same. Still, the second option is preferable because (1) the government can print less money and because (2) it gives the government more flexibility and more instruments to enforce tax remittance on the margin under the payment jam. This prevents extra non-remittance and bond financing.

Factor (1) was especially important under the fixed exchange rate in 1995-98. It helped postpone devaluation. Factor (2) was especially important because it minimized or at least limited the bond issue at any point in time and stretched out over time. This helped postpone the default.

To recapitulate, tax non-remittance forces bond financing of the resulting budget deficits. It forces government debt and leads to a default. The government is interested to delay this eventuality. It enforces tax remittance as much as it can under the payment jam. When this fails, the government monetizes tax remittance. That is, the government pays enterprises to remit taxes they impounded. In other words, the government subsidizes the amounts that would have become tax non-remittance but has thus become tax remittance. There is a ruble for ruble trade-off evidenced in the data in figure 9, panel 2 and other figures.

This secondary subsidy via monetization is forced onto the government by the first subsidy via tax non-remittance. Forced monetization of tax remittance is merely preferable to rapid default and devaluation. Greater tax non-remittance can push bonds to the upper bound beyond which they cannot be placed and can induce direct seigniorage, ruble for ruble, of budget deficits. As before, the government and the enterprise network were engaged in the game of chicken, this time over monetization and tax remittance rather than over tax non-remittance.39

Figures 11 and 12 illustrate the fiscal mechanics of imminent monetization in any economy with unsustainable budget deficits and forced monetization under Enterprise Network Socialism in Russia. The readers familiar with the Sargent-Wallace framework will find these figures self-explanatory.40

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39The game of chicken is there because three extreme outcomes are not feasible. (1) It is not possible for the government to enter into an implicit contract with enterprises to monetize total remittance. The government cannot enforce this contract, cannot enforce total remittance when enterprises could recreate the payment jam by simply surcharging invoices greater. (2) It is not feasible for the government to monetize total aged receivables and payment arrears and dissipate the payment jam, because enterprises will stop producing about 99 percent of output and still receive subsidies for one percent output by surcharging invoices to high heaven. (3) It is not feasible for enterprises to raise non-remittance to 100 percent of withheld and collected tax revenues because the next government will end Enterprise Network Socialism. After the policy reversal of late 1998, mandated repatriation and sale of foreign exchange revenues increased enterprise money balances and eased the payment jam. This enabled the government to enforce tax remittance, started to dissipate tax non-remittance, and made the government a much stronger actor in the game of chicken.

Step 6. Credit transmission, extension, and rollover

Banks transmit, extend, and roll over credit to enterprises on the basis of the monetary base created by the Central Bank during monetization of tax remittance. They multiply monetization of tax remittance through re-intermediation between enterprises. Credit is issued for payments, not for investment. This proposition was covered and documented at length in the addendum to Chapter 4 of From Predation to Prosperity, “Fixing China’s Banks, not Russia’s.”\textsuperscript{41} When inflation is high and nominal interest rates are low, and hence real interest rates are highly negative, credit rollover and extension represent a pure subsidy.

Credit transmission follows automatically from monetary expansion but goes nearly exclusively to the enterprise network, not to other agents, because tax non-remittance is the collateral for the rollover of credit. Thus the network is self-reinforcing and the tax subsidy to the network is self-enforceable. New entrants cannot practice tax non-remittance and cannot compete for subsidized credit because of their position outside of the network. They are not part of the preexisting supply chain and the payment flows. The government can enforce their tax remittance because it can shut them down without revenue loss spillovers.

Step 7. Aggregate third party billing pays. The self-enforceable tax subsidy

Various trade-offs between tax non-remittance and monetization of tax remittance, followed by credit rollover and extension, wind up in the self-enforceable subsidy. Tax non-remittance and monetization multiplied through the banking system sum up to the outstanding balance of receivables. Figure 5 demonstrated a close match in 1992-98 between enterprise subsidy claims through surcharged invoices, embodied in the balances of receivables, and the subsidy they force from the government through tax non-remittance and monetization.

Continuous short-term trade-offs between tax non-remittance and the money balances in the game of chicken between the government and enterprises (see again figure 9, panel 2) make the subsidy self-enforceable. Fiscal expectations to which enterprises index invoices in pursuit of the subsidy become self-fulfilling. At the same time, long-term complementarity between tax non-remittance and the monetary aggregate as subsidy components makes the subsidy self-reinforcing over time until the policy reversal downgrades it.

This self-enforceable subsidy can be called the tax subsidy not only because it finances tax

\textsuperscript{41}http://www.russianeconomy.org/predation/pdf/ch4add.pdf
remittance and the fiscal costs of tax non-remittance. Also, when enterprises surcharge invoices they levy a tax over the stages of processing. The price surcharge in invoices which ends up in the balances of receivables is ultimately a tax on consumers and households. On top of that, it is the taxpayers who bear the cost of the subsidy through inflation and fiscal defaults. By forcing government subsidy, the enterprise network ultimately taxes the public at large.

The mechanism of the self-enforceable tax subsidy on the edge of a payment jam is automatic. Let us consider various possible situations. We will observe the convergence of their results to the same initial position in a full circle:

1. Suppose the government undertakes a partial crackdown to enforce tax remittance. It forces selected enterprises to remit full current tax liabilities or taxes past due. The government succeeds at that. Affected enterprises automatically reduce payments to suppliers in the same amount. The latter automatically reduce their tax remittance in the same amount.\(^{42}\) Losses are equivalent. The government gains nothing.

2. Suppose the government conducts a large or an across-the-board complete crackdown on tax non-remitters. Payments between enterprises seize up and a chain reaction of shipment stoppages and supply breakdowns begins. Large suppliers of energy, fuel, and other resources halt supplies to non-paying customers. The tax base narrows quickly. The government may face greater incremental losses of revenues due to output contraction than incremental gains from forced remittance of taxes.

3. Suppose the government starts selective bankruptcies. The government could readily achieve this. All requisite bankruptcy laws had been on the books. The government could enforce them. Selective bankruptcies reduce payments to suppliers who, in turn, reduce their tax remittance and increase their tax subsidy in the same amount. The government gains nothing in the short run and narrows the tax base for the future.

4. Suppose the government reduces Central Bank credit to enterprises for remitting tax revenues. Enterprises increase tax non-remittance ruble-for-ruble of foregone monetization. They lose the modest multiplier that the banking system creates when it makes credits and opens deposits on the basis of newly printed money. For this reason, their tax subsidy declines. But the government gains nothing even if enterprises lose part of the subsidy.

5. Suppose the government increases Central Bank credit to enterprises for remitting tax revenues. This increases payment between enterprises and tax remittance to the government.

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\(^{42}\)Political connections do not matter in this exercise. Suppose the government targets the less politically connected enterprises. They increase tax remittance and reduce payments to suppliers, getting more inputs without paying. This does not worsen their financial position. Suppose better politically connected enterprises escape the government wrath of tax enforcement. They receive smaller payments from their buyers and increase the self-taken tax subsidy in the same amount. Their financial position does not improve. On the edge of the payment jam, political connections turn out to be fungible and their benefits socialized.
But this does not constitute a special gain for the government because it could just as well issue bonds in the same amount and sell them to the Central Bank or simply arrange direct Central Bank credit to the government.

6. Suppose the government increases tax rates or levies new taxes. This reduces the free (after-tax) cash flow of enterprises and their mutual payments, either directly or indirectly, through declining consumer demand. Then enterprises increase tax non-remittance. The government may end up with little or no revenue gains.

7. Suppose the government reduces regular expenditures, outside of the tax subsidy, in order to compensate itself for lost tax remittance and to reduce the budget deficit. This is possible up to a point—until the point is reached when enterprises provide inputs for which they are not paid to parties that have lost government payments. These may be the military, non-profit organizations (schools, hospitals, etc.), and households that use public utilities. Then enterprises collect the tax subsidy from the government in the amount of unpaid supplies.

8. In addition to self-enforcement of the tax subsidy, an automatic is also at force. Self-enforcement of the tax subsidy limits what the government can do. An automatic regulation limits what enterprises can do. Suppose enterprises increase tax non-remittance, and take a higher tax subsidy than they need for payments. In this case, they have more free cash flow and higher money balances to increase payments to suppliers and mitigate the payment jam. After that, the government can enforce more tax remittance without jeopardizing production flows and future tax flows. An increase in the current tax subsidy reduces the future tax subsidy by the same amount.

It follows that fiscal policy and monetary policy are powerless under this fiscal system. This conclusion is simply another way of saying that the tax subsidy is self-enforceable and self-regulating in the payment jam, on the edge of halting production and tax revenue flows. If the government deviates or enterprises deviate in the very short run from the level of the tax subsidy under a given level of receivables, the above mechanism quickly enforces the equalization of the cumulative amounts of receivables and the tax subsidy.

Figures 13 and 14 break out of the 1992-98 time frame and extend the same relationship through the entire period of 1992-2007. Figure 13 uses the linear scale and figure 14 the logarithmic scale. Panel 1 of each figure plots the monetary aggregate M2 as a proxy for the monetary component of the subsidy. Panel 2 plots M1 for reference because it includes only demand deposits and excludes saving deposits, which may closer correspond to payments. The linear scale enables us to show tax non-remittance and the monetary aggregate M2 as interacting components of the subsidy. But because of high inflation in the early 1990s, the linear scale makes the data before 1994 invisible. The logarithmic scale demonstrates that the postulated relationship held since the beginning of 1992. It took only the first three months of 1992 for receivables to explode and outgrow the inherited and rapidly inflating nominal money stock. But the logarithmic scale presents only the sum of the two principal channels of the subsidy without their itemization. It also underestimates the divergence between the variables which started in 2002 and expanded during 2002-
2007.

Tax non-remittance slowed down in 2000-2001 and started to decline steadily in absolute terms since October 2001. The new policy initiated by the Central Bank which we mentioned earlier and will attend to shortly started to take effect. Most importantly, due to this policy we lost the monetary component of the subsidy variable. The part of the monetary base created through purchases of repatriated foreign exchange revenues does not represent a subsidy, at least not completely. It is no longer possible to monitor the self-enforceable subsidy with simple empirical variables. The subsidy has declined substantially in 2002-2007. In the spirit of figures 5, 13, and 14, one can estimate the claim on the subsidy as the ratio of the annual flows of receivables to GDP. This is not an actual subsidy which may be collected with a short lag but an annual claim on this subsidy. Figures 5, 13, and 14 show that this subsidy had been always extracted, at least until 2002, after which simple empirical evidence becomes blurred.

Table 2 estimates that the subsidy claim (and hence the subsequent subsidy) constituted 21.8 percent of GDP in 1992, gradually declined to 13.1 percent of GDP in 1996 and 5.3 percent in 1997, and then increased to 19.8 percent of GDP in 1998. Its gradual decline began from 5.5 percent of GDP in 1999 to 2.1 percent in 2002 and 2003. The claim increased to 2.8 percent in 2004 but this upturn may represent a short-term fluctuation. It is only possible since 2002 to estimate the subsidy indirectly, through the claim via the flow of balances of receivables. If the subsidy dissipated completely, the relationship between nominal receivables and the price index in figure 7.1 and other consistent correlations in figures 6 to 8 would have ceased to hold.

Most importantly, the principal empirical regularity in figure 1 between the balances of receivables and money balances versus contraction and recovery of real GDP continues to hold throughout 1992-2007.

**Step 8. The circuit of aggregate third party billing**

Step 8 is identical to step 1. Invoices outgrow payments and fall into the balances of aged receivables when enterprises surcharge invoices. They add a third party surcharge to the price, subject to fiscal expectations, and bill the government. Surcharged invoices carry a network tax on consumers and households. Now it is more evident why. The subsidy is self-enforceable under the payment jam created by aged receivables and payment arrears.

Fiscal expectations are self-fulfilling. The feedback from the subsidy to enterprise invoicing activity validates surcharged invoicing activity and stimulates more of it. It stimulates maximization of receivables subject to fiscal expectations.

Arrows 7 and 8 in the flow chart in figure 5 depict the feedbacks from the subsidy

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43 This point does not apply to the monetary base created in 1996-98 through purchases of foreign exchange from international investors who bought Russian bonds. This monetary base financed government debt, although in exchange not for domestic assets (bonds) but for international reserves, and thus monetized tax non-remittance.
components, tax non-remittance and monetization, to surcharged invoices. Panels 1 and 3 of figure 9 test empirical evidence for these feedbacks. Bivariate regressions can indicate causation running either and both ways. The flow of causation from receivables to tax non-remittance and monetization (multiplied by credit transmission) was discussed above. Now, this is a test of fiscal expectations stemming from the eventual subsidy to maximization of receivables.

A strong correlation between the balances of receivables and tax arrears in panel 1 was discussed earlier. Panel 3 regresses the monthly balances of receivables in 1992-mid-1999 against the monetary aggregate M2, the second major component of the subsidy. The functional form is quadratic as it offers a better fit. A linear regression between the same variables makes a reality check in panel 3A of figure 9. The polynomial formula in panel 3 accounts for 96 percent of the variation. The linear regression accounts for 92 percent of the variation. Both show a strong positive relationship between the balances of receivables and the money balances. This implies that a mechanical short-term effect, that monetization and credit would dissipate payment arrears and aged receivables, is totally overwhelmed by subsidy expectations. Panels 3 and 3A demonstrate a strong incentive for the subsidy-extracting strategy of the enterprise network. Panels 1 and 1A offer the same finding on the side of the tax non-remittance channel of the subsidy.

This discussion has come full circle. It is convenient to incorporate the fiscal circuit in the flow chart in figure 5 into a general mechanism of Enterprise Network Socialism. This mechanism in Box 4 connects the fiscal circuit of aggregate third party billing with its impact on real output (GDP) and with policy reversals in 1999-2007. The arrows numbered in blue, from 1 to 11, represent the fiscal circuit augmented by the policy forces of 1999-2007. The arrows numbered from 1 to 8 encompass the self-contained and circular system of aggregate third party billing. They retrace the eight steps summarized in Box 1. Arrows 9 to 11 add the policy reversal in 1999-2007, to which the discussion turns below. The arrows numbered in brown, from 1 to 7, incorporate a simplified transmission to real output. Plus and minus signs on the side of the arrows indicate positive and negative relationships between variables.

In the beginning, enterprises maximize receivables subject to the expected subsidy. They index invoices with price surcharges to fiscal expectations. Invoices outgrow payments and—arrow 1, the plus sign—their balances end up in aged receivables. This creates the payment jam and may render net cash flow negative and halt operations across the economy. Under the payment jam—arrow 2, the plus sign—enterprises endeavor non-remittance of taxes withheld from workers and collected from consumers. The government engages in the game of chicken to enforce tax remittance and—arrow 3, the plus sign—has to securitize tax non-remittance, issue bonds. To minimize and limit tax non-remittance and delay the default of on the ever-growing debt the government is forced to monetize additional tax remittance (arrow 4, the plus sign, from tax non-remittance to the money supply and arrow 5, the minus sign, from the money supply to tax non-remittance). Monetization multiplied and transmitted through the banking system to enterprises—arrow 6, the minus sign—dissipates payment arrears and aged receivables in the short run. In the long run, both monetization—arrow 7, the plus sign—and tax non-remittance—arrow 8, the plus sign—as the complementary embodiment of fulfilled fiscal expectations, stimulate surcharged invoices and maximization of receivables.
The entire system of aggregate third party billing sketched in Box 4 is circular, self-enforceable, and self-reinforcing. It had met its match in the policy introduced by the Central Bank of Russia in September-December 1998.

The Reversal of Powers and the Fall of the Freedom to Charge

This is a story of an accidental series of policy decisions with systemic consequences. It is a story of how a peripheral policy of the Central Bank, control of capital outflows aimed at accumulation of foreign exchange reserves, hit the fiscal feedback loop at the core.

In September-December 1998, the Central Bank of Russia initiated a concerted effort to accumulate foreign exchange reserves. The simplest and quickest policy instrument was compulsory repatriation of export revenues. The policy has succeeded over the years in its intended objective. Russia’s foreign exchange reserves increased from nearly zero in the late 1998 to nearly $600 billion by mid-2008.

Beyond this specific facet, two issues intertwine. First, this policy shift was flagrantly illiberal. It was an act of de-liberalization in reversal of the policies of 1991-98, an act of imposition of government controls. Second, on the surface, this was a sectoral and peripheral policy. It affected one direction of the flows on the capital account. It imposed control of capital outflows in order to build up reserves. It did not affect capital inflows. It did not touch the current account and international trade. Outside foreign trade, it was not a deliberate fiscal policy or economic growth-related policy. Beneath the surface, however, this illiberal policy shift inadvertently changed the very mechanics of Russia’s fiscal system, restoring solvency to the-then bankrupt government. Unexpectedly, this policy launched a rapid economic recovery of 1999-2007 from the bottom of the great contraction of 1992-98.

A policy reversal

In the second half of 1998, the Russian government was, for all practical purposes, bankrupt and dysfunctional. After the great default on domestic debt on August 17, 1998, there was for several weeks a sequence of acting cabinets, none permanent. The President of Russia, the head of state and the chief executive, was nowhere to be found, and the CBS and other Western media reported that he either resigned or was dead. The Central Bank’s foreign exchange reserves were almost depleted. In order to rebuild its stock of foreign reserves, in September 1998, the Central Bank started to enforce mandated repatriation and domestic sale of the foreign exchange revenues of exporters. The timing was crucial.

By a sheer extraneous coincidence, interest and principal payments on the external debt of the Russian government, which had been rescheduled several times over the previous seven years, were due in September 1998 and thereafter. Less than a month before this day of reckoning, Russia’s domestic bond market was annihilated. On August 17, 1998, the government defaulted on its domestic, ruble-denominated bonds. Simultaneously, it shifted from a crawling peg to a flexible
exchange rate and devalued the ruble by one-third. The currency market responded with a further, rapid and sharp devaluation. When less than a month later the time came to make the foreign currency payment, a bankrupt and illiquid government found that it could not purchase the billions of dollars of foreign currency with its tax receipts in devalued rubles. Whence followed several technical defaults on external debt service.

The government appealed to the Central Bank as the lender of last resort of foreign exchange. The Central Bank extended the government a foreign currency loan of $6.7 billion in exchange for a dollar-denominated Russian bond, that is, a promise of the government to repay the bank $6.7 billion in foreign currency. The loan nearly depleted the foreign exchange reserves of the Central Bank and rendered its net international reserves (net of IMF loans) negative. More payments on the government’s external debt were coming due and the Central Bank could expect more requests from the government for foreign exchange. Some measures had to be taken quickly lest the news of the Central Bank’s foreign exchange void create a panic, further fall of the ruble, and defaults on the government’s external debt.

Rapid accumulation of foreign exchange reserves became the Central Bank’s top priority, indeed a survival strategy. Its first moves were experimental, by trial and error. As a stopgap measure, on August 26, 1998, the Central Bank enacted a provisional decree “On Introduction of Temporary Restrictions on Operations on the Capital Account by Residents.” In extension, on September 1, 1998, the Central Bank enacted an ordinance “On the Rules of Making Payments in Foreign Currencies in the Export and Import Operations by Residents of the Russian Federation.” This order was soon countermanded as it was superceded by the next, final decree which locked in the new policy.

On September 11, 1998, the Central Bank issued a new decree which acquired the force of law on the day of its publication, September 16, 1998. The decree represented a seemingly minor and innocuous procedural adjustment to a long-standing regulation that required Russian enterprises to sell 50 percent of their export revenues in foreign exchange for rubles. The new decree carried a subtle (and perhaps a deliberately obscure) bureaucratic title: “On Introducing Amendments and

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44For the balance sheet and discussion, see our “How Big Are Russia’s Foreign Exchange Reserves?” at http://www.russianeconomy.org/comments/091100.pdf.

45No. 328-U, The Circular of the Bank of Russia, no. 63 (318), September 2, 1998. All bylaws and regulations of the Central Bank of Russia are published in its official circular, The Circular of the Bank of Russia (Vestnik Banka Rossii), once to thrice a week except banking holidays. There are four types of regulations: instructions (I), ordinances (P), decrees (U), and telegrams (T). They have the same legal force of a bylaw and differ only in the genre and the method of distribution, which both depend on the length and content of the document. The documents have the date of issuance and the date of publication in The Circular of the Bank of Russia, which becomes the official date of being in force. Various secondary sources often mix up these dates. For consistency, we cite the date of issuance in the text and the date of publication in the footnotes.


47Ibid.

Before September 16, 1998, Russian enterprises were obligated to sell 50 percent of their foreign exchange revenues at the market exchange rate, but this foreign exchange could be sold through the Russian banking system. From September 16, 1998 on, mandated sale could only be conducted through designated currency exchanges, the Moscow Inter-Bank Currency Exchange and seven regional exchanges. The adjustment in the regulation halted sales through the banking system and inter-bank sales of foreign exchange revenues.

What’s the difference? To put it simply, from September 16, 1998, foreign exchange revenues of Russian enterprises had to be sold inside Russia. Foreign exchange had to be brought and wired to Russia to be sold. The new rule meant mandated repatriation of foreign exchange revenues, indeed forced repatriation and forced exchange of export revenues. This amounted to an imposition of capital controls on the outflow side of the capital account.

Before September 16, 1998, foreign exchange revenues of Russian enterprises could be sold outside of Russia through correspondent accounts of various Russian banks abroad. They could be sold to subsidiaries of exporters themselves. Exporters could repurchase dollars at the cost of a banking transaction fee and deposit dollars abroad. They sold for rubles, but rubles did not enter their bank accounts in Russia. The preexisting rule mandated 50 percent sale of foreign exchange revenues, not 50 percent repatriation and deposit of ruble-denominated proceeds in enterprise accounts with Russian banks inside Russia. The preexisting rule could not address capital outflow. Most importantly, while foreign exchange revenues of Russian exporters, either sold to subsidiaries or repurchased, were deposited abroad, their money balances with Russian banks remained drawn to low levels. Enterprises could amass billions of dollars abroad while withholding tax remittance from the government in Russia. Due to the low money balances of enterprises and the payment jam, the government could not enforce tax remittance. The monetary authority was compelled both to monetize tax remittance, in order to force enterprises to remit taxes withheld from workers and consumers, and to monetize tax non-remittance, to enable the government to finance the budget.

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49 The legal and institutional part of the story is reconstructed by bits and pieces from various Central Bank instructions and explanations circulated by Russian financial organizations. For a succinct account by one of them see [http://www.vergen.ru/archive/docs/full/1999/02/cb1102.html](http://www.vergen.ru/archive/docs/full/1999/02/cb1102.html).

50 Capital controls in developing and newly industrialized economies are usually associated with control of capital inflows. These are, specifically, short-term foreign portfolio investment, which may create currency risks upon quick withdrawal, and foreign bank lending, which may create excessive debt exposure and assets/liabilities misalignments (dollar-denominated liabilities and domestic currency-denominated assets) and thus create domestic bank failures. The type of capital control introduced by the Central Bank of Russia in late 1998 applies to capital outflows only.
deficit. Both tax non-remittance and monetization of tax remittance, which was multiplied by the banking system through credit transmission, summed up as a subsidy to the enterprise network. Figures 1 and 2 illustrate how these fiscal (tax non-remittance) and monetary (monetization multiplied by the banks) components of the subsidy added up in response to accumulation of enterprise receivables.  

What was the true rate of foreign exchange sales before September 16, 1998, when the mandated rate was 50 percent of export revenues? It could have been zero except when enterprises themselves needed rubles to reduce payroll arrears and pay wages. The decree of September 16, 1998, raised it from nearly zero to 25 or 30 percent initially, when enforcement was incomplete, to close to 50 percent when enforcement strengthened. The Central Bank enforced its rule strictly through its regional branches by matching foreign trade accounts of enterprises with physical volume and world prices against resulting repatriation and sale of foreign exchange. Commercial banks, even the banks owned and controlled by exporting enterprises, had to cooperate in this process and regularly furnish all the necessary information lest their license be revoked. From September 16, 1998, the new rule was in force. Dollars and other foreign exchange flowed into Russia, were sold for rubles, and deposited in enterprise bank accounts. As the resulting ruble receipts entered enterprise bank accounts, enterprise money balances increased enabling the government to enforce tax remittance. The government’s fiscal position started to quickly improve.

Restoring fiscal solvency was not an aim or intention of the Central Bank. The Central Bank did not intend to run fiscal policy, to become the effectual fiscal authority in lieu of the Finance Ministry. All that the Central Bank sought was to bring dollars to Russia so that the bank could purchase them to accumulate reserves. This focus of the Central Bank policy is clear from its next move. On September 28, 1998, the Central Bank issued an ordinance entitled “On the Rules and Conditions for Conducting Trades of U.S. Dollars for Russia’s Rubles at the Special Trading Sessions of the Inter-Bank Currency Exchanges.” Foreign exchange revenues first had to be sold at special trade sessions of the Moscow Inter-Bank Currency Exchange, with the Central Bank commanding the right of first refusal at those sales. At the same time, this move tightened enforcement of mandated repatriation.

Further tightening was enacted on December 2 and 7, 1998, when the Central Bank closed the foreign exchange resale—and hence repurchase—window between domestic enterprises. Finally, on December 31, 1998, the Central Bank raised the rate of mandated repatriation of foreign

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51 In hindsight, it is interesting to recall that these issues were already discussed in August 1992, even if in a preliminary mode, due to lack of a lengthy experience and data, by the board of governors of the Central Bank of Russia, including its three concurrent and subsequent chairs, and one of the present authors. See Appendix.

52 No. 57-P, The Circular of the Bank of Russia, no. 69 (324), October 1, 1998.

exchange revenues to 75 percent of receipts and shortened the operation from two weeks to one.\textsuperscript{54} The latter detail was hardly necessary except for intimidation as a means of enforcement.

As the terms of trade for Russian exports improved, reinforced by the rise of world oil prices, the bank reduced the rate from 75 to 50 to 30 to 25 percent.\textsuperscript{55} Finally, it came down to zero as the direct fiscal device of export duties could be enforced. It could not be enforced at a time of tax non-remittance because export duties and other tax payments, or rather non-payments, are fungible, and enforcement of export duties would have led to commensurate reductions of remittance of other taxes. Once enterprise bank balances in domestic banks were restored due to a period of mandated repatriation, and complete tax remittance became enforceable, the real enforcement of export duties became possible without reducing remittance of other taxes. Over the course of 1999-2007, the Central Bank fulfilled its objective, increasing its foreign exchange reserves from almost zero to nearly $600 billion by mid-2008. But the unintended fiscal consequences and real economic effects on output went much beyond that.

\textit{A reversal from contraction to recovery}

The Central Bank printed rubles when it purchased foreign exchange reserves, that is, expanded the monetary base. These increases in the money supply in response to forced repatriation of export revenues produced an effect different from, indeed opposite to, monetization of the buildup in enterprise receivables in 1992-98. Three implications of this Central Bank monetary expansion in 1999-2005 ensued in the following sequence. Let us first describe their transmission mechanism and then submit evidence available in their support.

(1) Enterprise money balances in bank accounts expanded. This reduced the balances of payables and receivables, thereby dissipating the payment jam. This process continued through the flow of funds across enterprises and industries, reversing the chain reaction of payment arrears and aging of receivables.

(2) \textbf{Enterprise export earnings started to monetize tax remittance.} The government could enforce tax remittance. The balances of tax arrears slowed down in 1999-2001 and declined significantly since October 2001. Figure 13.1 and table 7 document this trend in detail. This implies that the flow of tax non-remittance started to decline since 1999, that is, tax remittance increased,

\textsuperscript{54}No. 476-U, \textit{The Circular of the Bank of Russia,} no. 1 (345), January 12, 1999. In addition, to reduce currency risks and to strengthen enforcement, the Central Bank on January 10, 1999 reduced the foreign exchange exposure of Russian banks. It reduced open currency positions to 10 percent of each bank’s equity capital and established caps on foreign exchange contracts. No. 479-U, \textit{The Circular of the Bank of Russia,} no. 2 (346), January 20, 1999.

\textsuperscript{55}It follows that no level of and no increase in world oil prices would have mattered if effective repatriation of foreign exchange revenues was zero. At the same time, the effect of mandated repatriation of foreign exchange revenues was strong already in 1999 even though an increase in world oil prices was modest. This effect strengthened in 2001 and 2002—the balances of tax non-remittance started to decline, see figure 13.1—even though world oil prices declined (see figure2). These considerations indicate that the connection between world oil prices and Russian economic recovery in 1999-2007 is specious if one abstracts from the economic system and policy.
and since October 2001 enterprises started to pay off past tax arrears. Government fiscal accounts reversed from deficits to surpluses.

(3) The link between monetization and the tax subsidy was weakened. Expansion of the monetary base, inasmuch as it was created by purchasing foreign exchange from enterprises, does not represent a subsidy. Only multiplication of money through financial re-intermediation between enterprises, through credit rollover and expansion continued to subsidize the enterprise network. Thus the overall money creation was, to a significant extent, no longer a subsidy. It did not stimulate a continuous major expansion of receivables. It only validated their moderate accumulation.

These effects reduced the actual tax subsidy and fiscal expectations. Accumulation of receivables slowed down, surcharged invoicing slowed down, inflationary expectations subsided. Real money balances started to recover and real output followed suit.

The top row and blue arrows 9 to 11 in Box 4, “The Mechanism of Enterprise Network Socialism,” incorporate these effects into the prior framework. They show a new loop through which the reversal of policy shifted the outcomes. Figure 15 presents the data to explore the new developments and reversed relationships. It extends bivariate regressions in figure 9 from 1992-mid-1999 to the entire period 1992-2007. As before, panels 1 to 3 use the polynomial functional forms and panels 1A to 3A test the same data in the linear form.

Panels 1 to 3 show that all principal bivariate relationships reversed from positive to negative some time after 1999. Their curves are non-monotonic concave and decreasing. However, there is an ambiguity concerning panel 3, the regression of the balances of receivables against the money balances.

In panel 1, the balances of tax non-remittance and receivables were positively related before 1999 and some time thereafter, they slowed down together soon after 1999, and tax arrears started to decline thereafter (in October 2001, says figure 13.1), their relationship with receivables turned negative. The polynomial of the third degree accounts for 98 percent of the variation (the quadratic formula accounts for 96 percent of the variation, and the linear regression in panel 1A of figure 15, for 77 percent).

The relationship between tax non-remittance and monetization also turned from positive to negative some time after 1999 in panel 2 of figure 15. The quadratic formula accounts for 74 percent of the variation. Their linear bivariate relationship in panel 2A simply breaks down (adjusted R² is 0.26). The quadratic regression in panel 2 implies that monetization started to work to dissipate tax non-remittance. This suggests that forced repatriation of foreign exchange earnings

indeed started to monetize tax remittance.

The relationship between the money balances and the balances of receivables in panel 3 of figure 15 became ambiguous. Notice in panel 3 of figure 15 as well as in figure 13.1 that both the money balances (obviously) and the balances of receivables (not necessarily obviously) continued to grow in 1999-2007. But the growth of receivables slowed down significantly relative to money growth. A comparison between the quadratic equation in panel 3 and the linear regression in panel 3A is suggestive. The quadratic formula accounts for 94 percent of the variation, the linear for 78 percent. In Panel 3, the implied shape of the quadratic curve, which represents a better fit, is non-monotonic concave and decreasing. That is, the acceleration coefficient in the quadratic formula is negative and, after a slow down relative to the money supply, the balances of receivables are predicted to decline. Monetization does not significantly stimulate amassment of receivables any more and may even discourage it in the future. However, the polynomial of the third degree which accounts for 98 percent of the variation (not shown in figure 15) and makes the best fit, accords more with the linear regression. They suggest that the relationship between the money balances and receivables remains positive and the subsidy component in monetization persists, just to a lesser degree.

Judging from the data in figures 1, 7.1, and 15, a symbiotic relationship between the enterprise network and the government remains in place, but the positions of power have reversed. The Central Bank snatched fiscal power from the enterprise network. In effect, it started to run fiscal policy and delegated its execution, tax remittance, to the government. The latter started to reinforce its executive capacity to enforce tax remittance by additional crackdowns on the enterprise network, including partial and exemplary de-privatization and re-nationalization. The Central Bank also started to run independent monetary policy—independent, that is, from the enterprise network. This was a major reversal of powers. The enterprise network continues to maximize the tax subsidy, subject to fiscal expectations, but its power to do so significantly diminished. It was no longer as free to charge the government and the public at large in 1999-2007 as it was in 1992-98.

Output Suppression and Recovery

The self-enforceable tax subsidy to the enterprise network enabled the great contraction in 1992-98 after the dissipation of central planning in 1989-91. This contraction was an anomaly in view of the negative value-added typical for central plan economies. A rapid GDP recovery in 1999-2007, after a policy reversal, utilized the preexisting capacity and the embedded growth potential.

Value Subtraction and an Accounting Impossibility of Contraction

Under central planning, the system of forced production (output quotas) and forced delivery between enterprises and industries made prices embody cross-subsidies. Given government priorities, many manufacturing, construction, and agricultural enterprises received subsidized inputs from natural resource enterprises and public utilities. In turn, enterprises in manufacturing, construction, and agriculture produced subsidized output whose market value in world prices would
have been lower than the market value of resource inputs. This means that value was subtracted across industries beyond mining and utilities, that is, in a significant part of the economy. The negative value-added, or value subtraction, is widespread in many economies with cross-industry, cross-sectoral price distortions and cross-subsidies, in both central plan and less developed economies.  

Under network arrears and the self-enforceable tax subsidy, cross-subsidies from natural resource enterprises and utilities to downstream industries retain and perpetuate value subtraction. However, the initial value subtraction inherited from central planning carried an invisible growth advantage.

Elimination of value subtraction is in itself value addition, that is, one-time economic growth. Other vast inefficiencies of central planning contained inborn opportunities for efficiency improvements and thus for additional growth. Market prices and incentives automatically eliminate value subtraction and other inefficiencies and should—indeed cannot fail to—generate instant growth. This made the lack of substantial economic growth in Russia and elsewhere, let alone the Great Contraction, impossible on accounting grounds.

Arithmetically, subtraction of subtraction is addition. This means that simply closing down the value-subtracting enterprises and industries and reallocating (initially, simply selling on the world market) resources wasted by them, automatically generates one-time economic growth. Its potential extent was substantial. For example, if the negative value-added constituted 33 percent of the value of resource inputs, its elimination could produce an instant 50 percent growth of real GDP (in constant prices).

From this perspective, even 28 percent growth achieved in Poland in the 1990s, after a big contraction in 1990-92 and a subsequent recovery, can be viewed as a success only relative to Russia.

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Paradoxically, from this perspective, even the end of Russia’s subsidization of Eastern Europe and the former Soviet Republics with underpriced energy must have helped economic growth in both Russia and its former beneficiaries. Input pricing at world levels should have eliminated value-subtracting, not value-adding, output, and thus contributed to growth, not contraction.

Elimination of value subtraction and automatic, instant growth were easy not only from an accounting but also from a socio-political perspective. As a matter of fact and accounting, the total subsidy pays not only for value subtraction but also for 100 percent of wages of workers engaged in value subtraction. It is a matter of fact because waged workers, not robots, are working in the value-subtracting enterprises. It is a matter of accounting because value subtracting output is somehow produced. This means that the public pays for the difference between input and output prices (value subtraction per se) and also for wages and profits of producers. These wages and profits are subsidized on top of value subtraction. Therefore, if the market closes down all value subtracting enterprises, the government can tax the public and pay 100 percent of wages to displaced workers for not working and for retraining, and the total subsidy will still be lower than before because value subtraction will not be subsidized. Thus substantial, instant, one-time economic growth can be achieved without making workers financially worse-off, at about zero social cost, indeed with a social gain.

Not only was the great contraction not a necessary part of transformation, the opposite is true: The great contraction was structurally impossible as a matter of accounting. Economic expansion immediately after the end of central planning was a historical windfall and a missed opportunity.

A uniform view of contraction and recovery

Recall figures 1 and 7.1 to the witness stand. They reveal what happens to the supply side in the world of aggregate third party billing. Incentives are mixed. They combine maximization of

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60 Paradoxically, from this perspective, even the end of Russia’s subsidization of Eastern Europe and the former Soviet Republics with underpriced energy must have helped economic growth in both Russia and its former beneficiaries. Input pricing at world levels should have eliminated value-subtracting, not value-adding, output, and thus contributed to growth, not contraction.
real profit from production and maximization of redistributed income, specifically maximization of the tax subsidy from surcharged invoicing.

Given technological possibility and existing capacity, production is bolstered by real spending, that is, mechanically, real money balances times their velocity of circulation. But real money balances are not independent (exogenous) under Enterprise Network Socialism. Maximization of the tax subsidy operates through maximization of nominal receivables, subject to fiscal expectations.

Figure 7.1 displays how growth of nominal receivables (the balances of invoices in excess of payments) aligns with price increases. Surcharged invoices automatically increase the price level. Fiscal expectations materialize as self-fulfilling inflationary expectations bypassing monetary policy. They contract real money balances. The converse is also true. When fiscal expectations are lowered by aggressive government policy of subsidy cutting (i.e., suppressing enterprise freedom to charge, enforcing tax remittance), real money balances can grow.

One can view the index of the ratio of money balances M2 to receivables in figure 1, as well as later in figures 16 through 19, as a proxy for the index of real money balances.61 This proxy curve of the index of money balances to receivables in figure 1 shows the pendulum of real money balances on the downward path from 1991 through 1998 and on the upward path from 1998 through 2007. This pendulum corresponds to contraction of real money balances in 1992-98 when receivables outgrew nominal money balances and to recovery of real money balances in 1999-2007 when the course reversed and nominal money balances outgrew receivables.


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61 The monetary aggregate M2 stands for nominal money balances in domestic currency. Measures of broad money which include foreign exchange deposits are not relevant for this study. The real value of foreign exchange is not affected by fiscal (subsidy) pursuits and inflationary expectations of Russian enterprises, although the amount of foreign exchange deposits with Russian banks may be so influenced to an unknown extent. Instead of M2 one could employ a narrower monetary aggregate M1 which includes demand deposits and excludes saving deposits. Both are close in Russia because saving deposits are low. The latter constituted about 20 percent of M2 in the 1990s and increased to about 35 percent in 2005 (as opposed to over 60 percent in China). For a detailed discussion see addendum to chapter 4 of From Predation to Prosperity, “Fixing China’s Banks, not Russia’s,” especially figure 4. Since savings deposits as a component of M2 (as opposed to large time deposits in M3) are of low maturity and money is fungible, it is more conventional to use M2 in simple, general-purpose studies. Milton Friedman summarized his multi-decade-long experience with the choice of monetary variables: “I use M2 rather than either narrower aggregates, such as the base or M1, or broader aggregates, such as M3, because in prior research I have found M2 to have a more reliable relation to other economic magnitudes than the other monetary aggregates.” Milton Friedman, “A Natural Experiment in Monetary Policy Covering Three Episodes of Growth and Decline in the Economy and the Stock Market,” Journal of Economic Perspectives 19, no 4 (Fall 2005), p. 146.
A uniform empirical relationship holds consistently for both contraction and recovery. When the outstanding balances of receivables outgrow nominal money balances, the economy contracts. When nominal money balances outgrow the balances of receivables, the economy recovers. It is important, in our view, that this is a uniform and unified empirical regularity, with a unified mechanical and systemic explanation behind it. Nothing is left to ad hoc reasoning. Notice, however, that nothing in the discussion above suggests that this relationship should hold for economic growth beyond recovery from a great contraction under aggregate third party billing. Indeed, the above mechanics and systemic dissection are idiosyncratic and specific to the unique system of Enterprise Network Socialism.

Figure 1 and all prior discussion focused on the impact of subsidy maximization by surcharged invoicing on the real money balances. For simplicity, we abstracted from the independent impact of velocity of money circulation on overall spending in 1992-2007. There were already too many complicated variables to consider and to plot, and velocity (the inverse of the money demand) is one of the most difficult analytical issues which only specialists in that field can handle. But it is, in fact, real spending (money times its velocity), not just real money balances, that is approximated empirically in figure 1. In fact, another figure, figure 16, separates real money balances and shows in full their collapse from 1991 to 1992 from which they never recovered throughout the period 1992-2007.

Only figure 16 relays the meaning and the scope of the explosion of subsidy and inflationary expectations immediately after liberalization of January 1992 and shows how this brought down the real money balances in 1992 to about one-fifth of their level in 1991. Figure 16 plots the same data as figure 1 plus adds the year 1990 for reference. The difference is that figure 16 uses the same full scale for both indices of real GDP and the ratio of money to receivables and does not truncate the scale for the latter index. Figure 1 truncated the index of the ratio of M2 to receivables between 1991 and 1992 and truncated the latter’s scale accordingly. By doing so, figure 1 in effect imitated a nearly fourfold increase in the velocity of money circulation in 1992 which did not let real GDP collapse by almost 80 percent on par with the real money balances. Such a rapid increase in money velocity often accompanies episodes of high inflation when the real value of money balances depreciates and money holders reduce their money demand accordingly. Thus figure 1 implicitly incorporates changes in velocity and compares the index of real GDP with a proxy for the index of real spending.

Figure 17 takes a closer look at annual fluctuations in 1992-2007. It uses different scales for the indices of real GDP and the ratio of M2 to receivables to implicitly account for an increase in money velocity in 1992. It adds a flow chart which summarizes the above discussed relationships between surcharged invoices, the price index, nominal money balances, the velocity, nominal spending, real spending, and, ultimately, real output. The left side of Box 4 incorporates this transmission mechanism with other mechanics of subsidy extraction under Enterprise Network Socialism.

Figures 18 and 19 apply the same comparison of the indices of real GDP and the ratio of M2 to receivables to the quarterly data in 1995-2007. The quarterly GDP series before 1995 are not
The quarterly comparisons are more sensitive to short-term fluctuations and various lags. Figure 18 plots crude, not seasonably adjusted index of GDP. Figure 19 uses seasonably adjusted data. GDP in the first quarter of 1995, seasonably adjusted, is used as the benchmark 100 value. The quarterly indices of real output and the ratio of money balances to receivables in 1995-2007 do not always closely match. They broadly correspond to each other over time during both the contraction years and the recovery years. The same empirical regularity applies on the quarterly basis smoothed over time: When receivables outgrow money balances, GDP declines. When money balances outgrow receivables, GDP recovers. This persistent empirical rule supercedes short-term fluctuations.

The Ambivalence of Liberalization and Privatization

Aggregate third party billing in Russia in 1992-2007 generated a large degree of income redistribution. Table 2 documents that the self-enforceable tax subsidy alone claimed, on the average, 15 percent of the shrinking GDP in 1992-98. It was around 20 percent of GDP in 1992, 1993, and 1998. This is a net transfer from households and consumers to enterprise owners and managers. In the process, this subsidy extraction involved a near-universal gross redistribution of national income in the flows of funds. This gross redistribution of income is more important than net transfer because it is gross, not net redistribution that thwarts productive incentives and fosters counter-productive and predatory behavior. Enterprise enforcement of the tax subsidy involved at least two accompanying subsidies: (1) price cross-subsidies between industries and (2) subsidization of value subtraction and retention of inefficient operations.

(1) Price increases in surcharged invoices are based on fiscal expectations, not on market signals. Prices always transmit information—a great insight of Friedrich A. Hayek. But information about what? It can be information about market value or it can be information about a valuable subsidy. As informational devices, prices are neutral between the two. They are above the fray. Enterprises and industries that can extract greater subsidy through tax non-remittance and monetization of tax remittance, add higher price surcharges to their invoices. Hence, relative prices change differently under fiscal-cum-inflationary expectations than under regular inflation. Which means that decontrolled, free relative prices are not free market relative prices. Relative prices can be free and redistributive at the same time. Recall that most enterprises, except retailers and various services, are both sellers and buyers of output. Therefore industrial cross-subsidies permeate trade credit many times over in the overlapping flows of surcharged invoices and payments.

(2) Enterprises and industries with relatively high payables and low receivables have a better cash flow position than others. They have to remit more taxes and they extract a lower tax subsidy as a result. But their further tax remittance and hence, in the fungible flows of funds, their trade payables are monetized. Since their payables are greater than their receivables, their subsidy covers not only price surcharges by sellers but also (after allowing for the difference between their

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increased prices and those of their sellers) real resources. As a result, on the margin, they obtain effectively additional inputs for free, at public expense. This especially involves inputs of natural resources. As we discussed earlier, natural resource industries are net creditors, their receivables exceed their payables, and hence they benefit from the tax subsidy primarily through the tax non-remittance channel. Users of natural resources are net debtors, their payables exceed their receivables, and hence they benefit from the tax subsidy primarily through the monetization (including bank credit) channel. Subsidization of their inputs in the world of free and distorted relative prices enables them to continue to engage in negative value-added production, that is, retain value subtraction. In less egregious cases, this merely subsidizes inefficient enterprises and industries.

Integrating (1) and (2) over the entire flows of funds leads to the conclusion that most transactions under Enterprise Network Socialism redistribute income. The self-enforceable tax subsidy and the accompanying cross-subsidies redistribute income in favor of enterprise decision-makers, namely owners and managers. Otherwise, these subsidies would be of little value to them. These subsidies end up in a net transfer from workers to owners and managers (that is, de jure managers and de facto owners).

Figure 20 compares factor income shares in non-redistributive economies such as Western market economies, particularly the U.S., the U.K., and Germany, and Spain, and post-central plan China vs. redistributive economies such as the Soviet union (specifically Russia in 1989 as part of the USSR), post-central plan Russia in 1992 and 2005, Kazakhstan in 2005, and less developed economies, specifically Mexico, Argentina, and Egypt. The examples include free market economies (the U.S., the U.K., and Spain), a non-free market economy in China, a central plan socialist economy (Russia as part of the USSR), a free non-market, socialist economy (Russia under Enterprise Network Socialism), and non-free non-market non-central plan socialist economies of Mexico, Argentina, and Egypt. In the spirit of Arthur C. Pigou, factor income shares approximate convergence or divergence between agents’ productive contribution to the economy and their remuneration from the economy. In the tradition of Arthur C. Pigou and in the language of the literature he inspired, it is a comparison between social returns and private returns, or, to put it differently, between returns to the economy and returns to producer and non-producer agents. Under central planning, in Russia as part of the USSR, and in less developed economies wages and agricultural prices were suppressed. Suppressed wages and agricultural prices were the principal source of income redistribution. The enterprise network in post-central plan Russia retained this mechanism in the absence of central planning. Accordingly, the shares of labor income in all these countries were low and the ratio of labor income to capital income was close to 1:1. In non-redistributive Western market economies and in post-central plan China, wages and agricultural prices were commensurate to their market value and hence the ratio of labor income to capital income was about 2:1. This implies about 15 percentage point factor income redistribution. This

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is a massive net transfer of income from workers to owners of privatized industries in post-central plan Russia, similar to such transfer in less developed economies and also similar to such transfer to the government as owner of capital in the central plan economies, e.g., the Soviet Union.

Socialism from below, Enterprise Network Socialism, is just as ubiquitous and near-universal as socialism from above, central planning. Decontrolled transactions and privatized assets are not necessarily market prices and market assets. Freedom from government restriction is not necessarily freedom from income redistribution. Free socialism is still socialism, and free near-total socialism which redistributes the bulk of GDP is still near-total socialism. Socialism from below can be just as much socialism as from above. Freedom to charge is merely socialist devolution.

The Russian experience in 1992-2007 opens a new perspective on liberalization and privatization. Their high time in the 1990s coincided with the great contraction of GDP and their partial rollback in 1999-2007 coincided with partial economic recovery. The uniform assembly line inherited from central planning inverted the expected positive effects of liberalization and privatization. This discussion suggests that liberalization and privatization are ambivalent. They can decrease and they can retain (or even increase) income redistribution. Government restriction is also ambivalent. It can increase or decrease income redistribution. In Russia after September 1998, government restriction reduced freedom to charge and hence decreased income redistribution.

The following tables summarize these ambivalent relationships.
The Coase Theorem states that under market conditions (and provided that assets are easily transferrable), property always ends up in the hands of most productive users. This happens because the most productive users are willing to pay the highest price for a given asset, since it is they who can derive the highest return. Therefore, the initial allocation of property rights does not matter because the most productive users will be the ultimate owners. See Ronald H. Coase, “The Problem of Social Cost,” *Journal of Law and Economics* 3, no. 3 (October 1960): 1-44. It follows that even if there was an initial theft of property, the most productive owners will bid it away from thieves and create wealth for everyone. It also follows that under market conditions asset stripping on the part of legal owners is uneconomical: Why strip assets if they can gain more by selling the firm intact to the most productive (and thus highest paying) users?

The corollary to the Coase Theorem states that the rationale changes diametrically if the market economy does not exist and income is common while property is private. Then the value of the asset derives not from its market return but from the share of redistribution it entails. After the abolition of central planning and in the presence of the inherited enterprise network, the true asset is access to public income, to the tax subsidy. Property rights, ownership of enterprises provide privileged access to common income. Property rights on productive assets become fiscal property rights on the tax subsidy. The corollary to the Coase Theorem states thus: Under enterprise network socialism, property always ends up in the hands of most capable predators on public income, masters of redistribution, subsidy extractors, because they are willing to pay the highest price (apply the greatest force and influence). See the introduction of this corollary in Michael S. Bernstam and Alvin Rabushka, *Fixing Russia’s Banks* (Stanford: Hoover Institution Press, 1998), pp. 14-15. It follows that stripping productive assets by legal owners is most profitable under these conditions, because it is not from production but from access that they derive their gains. They want to keep the titles to continue to exploit their privileged access to common income and they add asset stripping as a dessert to the main course. It also follows that it matters little how privatization was conducted and what methods were used, which is the subject of a voluminous literature. The best (worst) predators always come on top in the end.

### The effects of privatization:

<table>
<thead>
<tr>
<th>Positive</th>
<th>Negative</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Property rights prevent runs on common resources</td>
<td>1. In the presence of subsidies from above or from below, privatization of assets permutates income redistribution which suppresses output</td>
</tr>
<tr>
<td>2. Ownership of output enables trade</td>
<td>2. Under these conditions, selects the most capable subsidy extractors (the corollary of the Coase theorem&lt;sup&gt;64&lt;/sup&gt;)</td>
</tr>
<tr>
<td>3. Ownership stimulates investment, invention, and innovation</td>
<td>3. Given the subsidy alternative, de-stimulates investment, invention, and innovation</td>
</tr>
<tr>
<td>4. Multiple property rights create competition</td>
<td></td>
</tr>
<tr>
<td>5. Private property selects the most efficient owners and the most efficient allocation of resources</td>
<td></td>
</tr>
</tbody>
</table>

Points 1-3 apply to all types of property rights  
Point 4 applies to non-state property rights  
Only point 5 applies to private property

<sup>64</sup>The Coase Theorem states that under market conditions (and provided that assets are easily transferrable), property always ends up in the hands of most productive users. This happens because the most productive users are willing to pay the highest price for a given asset, since it is they who can derive the highest return. Therefore, the initial allocation of property rights does not matter because the most productive users will be the ultimate owners. See Ronald H. Coase, “The Problem of Social Cost,” *Journal of Law and Economics* 3, no. 3 (October 1960): 1-44. It follows that even if there was an initial theft of property, the most productive owners will bid it away from thieves and create wealth for everyone. It also follows that under market conditions asset stripping on the part of legal owners is uneconomical: Why strip assets if they can gain more by selling the firm intact to the most productive (and thus highest paying) users? The corollary to the Coase Theorem states that the rationale changes diametrically if the market economy does not exist and income is common while property is private. Then the value of the asset derives not from its market return but from the share of redistribution it entails. After the abolition of central planning and in the presence of the inherited enterprise network, the true asset is access to public income, to the tax subsidy. Property rights, ownership of enterprises provide privileged access to common income. Property rights on productive assets become fiscal property rights on the tax subsidy. The corollary to the Coase Theorem states thus: Under enterprise network socialism, property always ends up in the hands of most capable predators on public income, masters of redistribution, subsidy extractors, because they are willing to pay the highest price (apply the greatest force and influence). See the introduction of this corollary in Michael S. Bernstam and Alvin Rabushka, *Fixing Russia’s Banks* (Stanford: Hoover Institution Press, 1998), pp. 14-15. It follows that stripping productive assets by legal owners is most profitable under these conditions, because it is not from production but from access that they derive their gains. They want to keep the titles to continue to exploit their privileged access to common income and they add asset stripping as a dessert to the main course. It also follows that it matters little how privatization was conducted and what methods were used, which is the subject of a voluminous literature. The best (worst) predators always come on top in the end.
The one and only productive use of income redistribution is compensation of producers of ideas for knowledge spillovers from invention and innovation. This exceptional case of income redistribution is necessary for technological progress.

The effects of liberalization:

<table>
<thead>
<tr>
<th>Positive</th>
<th>Negative</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Minimizes income redistribution by the government and its disincentives</td>
<td>1. In the presence of subsidies from below, liberalization enables income redistribution by private and collective predators and thus suppresses output</td>
</tr>
<tr>
<td>2. Removes barriers to economic activity set by governmental income redistribution</td>
<td>2. Under these conditions, makes productive activities less gainful and crowds them out</td>
</tr>
<tr>
<td>3. Removes barriers to economic activity set by the government besides income redistribution</td>
<td>3. Diverts talent to predatory activities</td>
</tr>
</tbody>
</table>

The ultimate question is about the optimal measure, the optimal dosage of government restriction. How much government is optimal? The experience surveyed here and in this book in general suggests: As much as necessary, as little as sufficient to minimize income redistribution.

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65 The one and only productive use of income redistribution is compensation of producers of ideas for knowledge spillovers from invention and innovation. This exceptional case of income redistribution is necessary for technological progress.
Box 1
The Operation of the Total Third Party Billing under Enterprise Network Socialism

One can follow the arrows in the flow chart in figure 5 and proceed step-by-step thus:

**Step 1.** Trade credit separates from sales and production. Invoices outgrow payments when enterprises add a third party surcharge to the price and bill the government. See figures 6, 7, 8

*Arrow 1 in the flow chart leads to step 2*

**Step 2.** The flow of receivables for many enterprises exceeds net income. See tables 4 and 5. They increase payables lest their net cash flow turn negative. Aged receivables increase payment arrears and vice versa. This chain reaction circulates the payment jam across the economy. Enterprises whose flow of receivables exceeds that of trade payables must increase tax payables.

*Arrow 2 in the flow chart leads to step 3*

**Step 3.** Enterprises do not remit taxes withheld from workers and collected from consumers. The government cannot enforce full tax remittance, as in the game of chicken. See table 6, figure 9.1

*Arrow 3 in the flow chart leads to step 4*

**Step 4.** The government is forced to issue debt, i.e., securitize tax non-remittance. See figure 10

*Arrows 4 and 5 in the flow chart lead to step 5*

**Step 5.** To delay the default, the government is forced to monetize budget deficit, to wit, monetize enterprise tax remittance, as in the game of chicken. See figures 11 and 12 and figure 9.2

*Arrow 6 in the flow chart leads to step 6*

**Step 6.** Banks transmit, extend, roll over credit, which reduces aged receivables, but see step 8

**Step 7.** Variable trade-offs between tax non-remittance and monetization of tax remittance, followed by credit rollover and extension, wind up in the self-enforceable subsidy. It sums up to the outstanding balances of receivables. See figures 5, 13, and 14

Corollary: A complementary array of cross-industry price subsidies accompanies this subsidy

*Arrows 7 and 8 in the flow chart lead to step 8*

**Step 8,** which is identical to step 1. Stimulated by all these components, enterprises surcharge invoices with a network tax to extract the self-enforceable subsidy. See figures 9.1 and 9.3. Corollary: This system becomes circular and self-reinforcing
BOX 2
THE EVOLUTION FROM CENTRAL PLANNING TO ENTERPRISE NETWORK SOCIALISM

Central planning

Forced production

Third party paying – from above

Socialist devolution

Liberalization and privatization

Third party billing – from below

Enterprise Network Socialism
## Box 3

### Facts and Mechanics of Two Patterns of Trade Credit

#### Facts

<table>
<thead>
<tr>
<th></th>
<th>U.S.: Cyclical pattern</th>
<th>Russia: Separation pattern</th>
</tr>
</thead>
<tbody>
<tr>
<td>Real receivables</td>
<td>Align with growth of real output</td>
<td>Invariant, stable within a narrow range</td>
</tr>
<tr>
<td></td>
<td>Figures 6.3 and 6.6</td>
<td>Figure 6.4</td>
</tr>
<tr>
<td>Nominal receivables</td>
<td>Align with growth of nominal output</td>
<td>Align with price increases</td>
</tr>
<tr>
<td></td>
<td>Figure 6.5</td>
<td>Figure 7.1</td>
</tr>
</tbody>
</table>

#### Mechanics

- How can growth of real receivables align with growth of real output? Firms optimize cash flow. The ratio of nominal receivables to GDP is cyclical within a narrow stable range. **Figure 8.1**
- How can real receivables stay invariant, stable? Enterprises maximize nominal receivables by price increases, subject to expected subsidy, which renders real receivables stable. The ratio of nominal receivables to GDP fluctuates. **Figure 8.2**

- New invoices exceed payments in real terms when output expands; payments exceed new invoices in real terms when output contracts.
- New invoices exceed payments in nominal terms by price increases. Invoices continuously outgrow payments by price increases.

- Firms index invoices to payments and through them to spending. Output and prices increase (decrease) in one or another combination.
- Enterprises index invoices not to payments, not to spending but to fiscal expectations. They add a surcharge to prior prices.
BOX 4
THE MECHANISM OF ENTERPRISE NETWORK SOCIALISM

Note: The red arrows emphasize the relationship which became empirically dominant in 1999-2007
Notes: 1. The break in the right scale truncates the index of the ratio of M2 to receivables between 1991 and 1992, which truncates its sharp decline in 1992.
Figure 16 presents the full scale.
2. The difference between the scales of the two axes indicates the changes in the velocity of money circulation.
3. The scales are made to align at the origins of both indices at 100 percent.
Sources: Gross Domestic Product and enterprise receivables: Russian State Committee on Statistics, various releases
The monetary aggregate M2: Central Bank of Russia, various releases
The data are reproduced in table 1
The relationship between export revenues and GDP dynamics, Russia, 1991-2007

Sources:
3. GDP index (1991=100): Calculated from Russian State Committee on Statistics, various releases
Sources:
- Oil and natural gas output: Russian State Committee on Statistics, various releases, and British Petroleum, at http://www.bp.com/productlanding.do?categoryId=6848&contentId=7033471
- Crude oil prices in constant 2006 dollars: British Petroleum at http://www.bp.com/productlanding.do?categoryId=6848&contentId=7033471
Sources:
FIGURE 3b

Sources:
FIGURE 4

Mandated repatriation of foreign exchange revenues enabled the government to enforce tax remittance

Liberalization and privatization

Partial de-liberalization and de-privatization

Source: Russian State Committee on Statistics, various releases
The data are reproduced in table 1
FIGURE 5
THE GOVERNMENT AND THE PUBLIC ARE FORCED TO PAY THE ENTERPRISE BILL:
RUSSIA, 1992-1997

Note: All data are denominated in billion 1998 nominal rubles.
Sources: Receivables and tax non-remittance: Russian State Committee on Statistics.
Money: Central Bank of Russia.
FIGURE 6.1

FIGURE 6.2

Source: Russian State Committee on Statistics
FIGURE 6.3

FIGURE 6.4

Source: Russian State Committee on Statistics
FIGURE 6.5

Notes: The index fraction in the price index is the inflation rate. The index fraction in the GDP index represents annual growth rate.
FIGURE 6.6

Notes: The index fraction in the price index is the inflation rate. The index fraction in the GDP index represents annual growth rate.
Note: The index fraction of the price index over unity is the inflation rate.
Source: Russian State Committee on Statistics
FIGURE 7.2
RECEIVABLES GROW OR DECLINE WHEN THE PRICE INDEX INCREASES:

Notes: The index fraction in the price index is the inflation rate.
FIGURE 8.1

Sources:
FIGURE 8.2

Sources: Gross Domestic Product and enterprise receivables: Russian State Committee on Statistics
The data are reproduced in detail in tables 1 and 2
FIGURE 9
PANELS 1-3. TAX NON-REMITTANCE, MONEY STOCK, AND RECEIVABLES, IN BILLION RUBLES, MONTHLY DATA, RUSSIA, 1992--MID-1999


Sources:
Receivables and tax non-remittance: Russian State Committee on Statistics
Money: Central Bank of Russia
FIGURE 9
PANELS 1A-3A. TAX NON-REMITTANCE, MONEY STOCK, AND RECEIVABLES, IN BILLION RUBLES, MONTHLY DATA, RUSSIA, 1992--MID-1999

Panel 1A. Tax Non-Remittance against Receivables, 1992--mid-1999

Panel 2A. Money Stock against Tax Non-Remittance, 1992--mid-1999

Panel 3A. Receivables against the Money Stock, 1992--mid-1999

Sources:
Receivables and tax non-remittance: Russian State Committee on Statistics
Money: Central Bank of Russia
FIGURE 10.1
THE ROAD TO THE GREAT DEFAULT: TAX NON-REMITTANCE, MONEY, AND GOVERNMENT BONDS, RUSSIA, 1995-98

Debt (Government bonds)
M2
Tax non-remittance

Sources:
Money and government bonds: Central Bank of Russia
Tax non-remittance: Russian State Committee on Statistics
FIGURE 10.2
RECEIVABLES AND GOVERNMENT DEBT, RUSSIA, 1994-98

Note: Government debt consists of the money stock M2 and domestic government bonds GKO and OFZ. It does not include other domestic bonds, with less than three-month maturity. The stock of money implicitly includes part of the external debt, which the government sells to the Central Bank, for which the latter prints currency.
Sources: Government bonds and enterprise receivables: Russian State Committee on Statistics
Money: Central Bank of Russia
FIGURE 11
THE CASE OF IMMINENT MONETIZATION OR DEFAULT

Case conditions:
1. The primary (net-of-interest) budget is balanced
2. Economic growth rate $R$ is smaller than the real interest rates, $r$

FIGURE 12.1
THE CASE OF FORCED MONETIZATION OR DEFAULT

Case conditions:
1. The primary (net-of-interest) budget is balanced
2. Economic growth rate $R$ is smaller than the real interest rates, $r$
3. The budget net of the tax non-remittance subsidy and interest is balanced
4. The dashed portion of seigniorage monetizes the tax non-remittance subsidy

The public’s demand for bonds: GDP times the relative stock of bonds the public is willing to hold

Revenue and financing

- Seigniorage
- Net bond receipts
- Bond rollover (receipts equivalent to redemption)
- Sale of assets
- Tax revenues net of tax non-remittance
- Tax non-remittance

Expenditures

- Real interest payments
- Redemption (retirement) of mature bonds
- Expenditures net of interest payments and net of the tax non-remittance subsidy

Budget deficit

Total debt outstanding held by the public (outside of the central bank)

Source: Figure 11 with modifications
FIGURE 12.2
THE CASE OF FORCED MONETIZATION AND FORCED LOANS OR DEFAULT

Case conditions:
1. The primary (net-of-interest) budget is balanced
2. Economic growth rate $R$ is smaller than the real interest rates, $r$
3. The budget net of the tax non-remittance subsidy and interest is balanced
4. Tax non-remittance is greater than government payroll arrears
5. The dashed portion of seigniorage monetizes the tax non-remittance subsidy

Revenues and financing

Forced loans (payroll arrears)
Seigniorage
Net bond receipts
Bond rollover (receipts equal to redemption)
Sale of assets
Tax revenues net of tax non-remittance
Tax non-remittance

Real interest payments
Redemption (retirement) of mature bonds
Expenditures net of interest payments, net of the tax non-remittance subsidy, and net of government payroll arrears
Government payroll accrual in arrears

Total debt outstanding held by the public (outside of the central bank)

Source: Figure 11 with modifications
FIGURE 12.3.
THE CASE OF FORCED MONETIZATION OR DEFAULT

Case conditions:
1. The budget (including interest payments) is balanced net of subsidies for tax non-remittance and for tax remittance
2. Economic growth rate $R$ is smaller than the real interest rates, $r$
3. Bonds finance tax non-remittance
4. Seigniorage finances tax remittance (hence the dashed portion of tax revenues)

Source: Figure 11 with modifications
Note: 1. All data are denominated in billion 1998 nominal rubles
2. An increase in the deposit multiplier during 2000-2008, when tax non-remittance decreased and became negative and the subsidy to finance enterprise receivables decreased accordingly, makes the monetary aggregate M2 less suitable than M1 (see figure 13.2) for approximating the quasi-fiscal component of the subsidy, which, together with tax non-remittance as a fiscal component, matched the outstanding balances of enterprise receivables until 2006
Sources: Receivables and tax non-remittance: Russian State Committee on Statistics; money: Central Bank of Russia.
FIGURE 13.2

Note: All data are denominated in billion 1998 nominal rubles.
Sources: Receivables and tax non-remittance: Russian State Committee on Statistics.
Money: Central Bank of Russia.
The Sum of Tax Non-Remittance and M2

Note: All data are denominated in billion 1998 nominal rubles.

Sources: Receivables and tax non-remittance: Russian State Committee on Statistics.
Money: Central Bank of Russia.
FIGURE 14.2

Note: All data are denominated in billion 1998 nominal rubles.
Sources: Receivables and tax non-remittance: Russian State Committee on Statistics.
Money: Central Bank of Russia.
FIGURE 15
PANELS 1-3. TAX NON-REMITTANCE, MONEY STOCK, AND RECEIVABLES, IN BILLION RUBLES, MONTHLY DATA, RUSSIA, 1992-2008

Panel 1. Tax Non-Remittance against Receivables, 1992-2008

Panel 2. Tax Non-Remittance against the Money Stock, 1992-2008


Sources:
Receivables and tax non-remittance: Russian State Committee on Statistics
Money: Central Bank of Russia
FIGURE 15
PANELS 1A-3A. TAX NON-REMITTANCE, MONEY STOCK, AND RECEIVABLES, IN BILLION RUBLES, MONTHLY DATA, RUSSIA, 1992-2008

Panel 1A. Tax Non-Remittance against Receivables, 1992-2008

Panel 2A. Tax Non-Remittance against the Money Stock, 1992-2008

Panel 3A. Receivables against the Money Stock, 1992-2008

Sources:
Receivables and tax non-remittance: Russian State Committee on Statistics
Money: Central Bank of Russia
Sources: Gross Domestic Product and enterprise receivables: Russian State Committee on Statistics
The monetary aggregate M2: Central Bank of Russia
The data are reproduced in table 1
FIGURE 17

Sources: Gross Domestic Product and enterprise receivables: Russian State Committee on Statistics
The monetary aggregate M2: Central Bank of Russia
The data are reproduced in table 1
FIGURE 18
QUARTERLY INDICES OF GROSS DOMESTIC PRODUCT (GDP) (QI 1995=100) (NOT SEASONALLY ADJUSTED)

Sources: Gross Domestic Product and enterprise receivables: Russian State Committee on Statistics, various releases
The monetary aggregate M2: Central Bank of Russia
FIGURE 19

Notes:
1. The index of quarterly GDP is calculated from two discontinuous overlapping data series and contains random biases.
2. The basis for the index of quarterly GDP is the GDP in the first quarter of 1995 not seasonally adjusted.

Sources:
Gross Domestic Product and enterprise receivables: Russian State Committee on Statistics, various releases
The monetary aggregate M2: Central Bank of Russia
Figure 20
Income Shares of GDP (in Percent), Ten Economies, Latest Available Year, and Russia in Retrospect


<table>
<thead>
<tr>
<th>Year</th>
<th>GDP at current prices (billion rubles)</th>
<th>Growth rate of real GDP (%)</th>
<th>Index of real GDP (1991=100)</th>
<th>Consumer Price Index</th>
<th>Monetary aggregate M2 (billion rubles)</th>
<th>Enterprise receivables (billion rubles)</th>
<th>The ratio of M2 to receivables, year-end (percent)</th>
<th>The ratio of receivables to GDP, year-end (percent)</th>
<th>DSO</th>
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<td>n.a.</td>
<td>n.a.</td>
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</table>
Notes:
1. All nominal values are denominated in billion 1998 rubles.
2. The data on nominal GDP at current prices derive from three discontinuous series in which overlapping data points do not match exactly. The consolidated continuous series includes the latest published data for each year. The series can serve as an approximation for the denominator in the ratios of various indicators to GDP but cannot serve as the basis for deriving the index of implicit GDP price deflator.
3. DSO stands for days of sales outstanding, also called the average collection period and the collection ratio. It constitutes outstanding balances of receivables divided by the average trade credit sales per day; or receivables divided by total sales on trade credit times 365 days.

Sources:
Money: Central Bank of Russia, various releases
GDP, prices, and receivables: Russian State Committee on Statistics, various releases
Table 2
Receivables and their Financing as a Share of GDP: Russia, 1990-2008

<table>
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<tr>
<th>Year</th>
<th>Enterprise receivables (billion rubles)</th>
<th>Receivables flow (billion rubles)</th>
<th>GDP (billion rubles)</th>
<th>Receivables flow as a percent of GDP (Claim on the tax subsidy)</th>
<th>Enterprise receivables including foreign and internal receivables within holding companies (billion rubles)</th>
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<td>2,450.8</td>
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Notes: All nominal values are denominated in billion 1998 rubles
Sources:
Receivables and GDP: Russian State Committee on Statistics, various releases
<table>
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<tr>
<th>Year</th>
<th>GDP Index (1991=100)</th>
<th>Export Revenues in Constant 2007 Billion $</th>
<th>Export Revenues in Current Billion $</th>
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Sources:
1. GDP index (1991=100): calculated from Russian State Committee on Statistics, various releases
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<td>163.8</td>
<td>63.9</td>
<td>28.8</td>
<td>126.4</td>
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Note: The table is abridged from Tables F.101 and F.102 of the Flow of Funds Accounts of the United States, by the Federal Reserve Board
Source: [http://www.federalreserve.gov/releases/z1/current/data.htm](http://www.federalreserve.gov/releases/z1/current/data.htm)
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Note: The table of the flows of funds is modeled on Tables F.101-F.104 of the Flow of Funds Accounts of the United States, by the Federal Reserve Board. Source: Derived and calculated from Russian State Committee on Statistics and Central Bank of Russia, various releases.
Table 6. The Statement of Cash Flows, Nonfinancial Enterprises: Russia, 1992-2003 (Billions of rubles)

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Source: Derived and calculated from Russian State Committee on Statistics and Central Bank of Russia, various releases
### Table 7
Enterprise Money Balances and the Stock of Tax Non-Remittance, Russia, 1992-2008

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<td>1.08</td>
<td>3.4</td>
</tr>
<tr>
<td>2004</td>
<td>509.7</td>
<td>444.7</td>
<td>1.15</td>
<td>2.1</td>
</tr>
<tr>
<td>2005</td>
<td>679.4</td>
<td>363.2</td>
<td>1.87</td>
<td>1.4</td>
</tr>
<tr>
<td>2006</td>
<td>865.2</td>
<td>309.2</td>
<td>2.80</td>
<td>0.8</td>
</tr>
<tr>
<td>2007</td>
<td>1,109.0</td>
<td>209.8</td>
<td>5.29</td>
<td>0.5</td>
</tr>
<tr>
<td>2008</td>
<td>1,369.0</td>
<td>154.4</td>
<td>8.87</td>
<td></td>
</tr>
</tbody>
</table>

Note: All nominal values are denominated in billion 1998 rubles

Source: Russian State Committee on Statistics, various releases
Glossary
Selected Terms of Trade Credit and Related Accounting, Dichotomized and Synchronized by Two Trading Parties

Trade credit encompasses open account relations between sellers (trade creditors) and buyers (trade debtors) of goods and services. In trade credit, sales and their invoices precede payments. Invoices add to the income of sellers and bills add to the expenses of buyers on the accrual basis accounting, with cash payments (liquid funds) to be remitted by buyers and collected by sellers before or on due date.

<table>
<thead>
<tr>
<th>Stock or flow</th>
<th>Sellers, trade creditors</th>
<th>Buyers, trade debtors</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flow</td>
<td><strong>Invoice</strong>: An instrument of trade credit with the amount charged to the buyer, technically the list of goods shipped and services rendered, itemized by units and unit prices, and with the sum due</td>
<td><strong>Bill</strong>: An instrument of trade credit with the amount charged by the seller in the invoice</td>
</tr>
<tr>
<td>Flow</td>
<td><strong>Charge</strong>: The amount, sum, or price for goods supplied and services rendered in the invoice and the bill</td>
<td></td>
</tr>
<tr>
<td>Flow</td>
<td><strong>Payment</strong>: The complete or partial discharge of the invoice, the amount remitted in cash (liquid funds) by the buyer</td>
<td></td>
</tr>
<tr>
<td>Stock</td>
<td><strong>Accounts receivable</strong>, trade receivables, receivables: Outstanding balances (due by buyers) of amounts invoiced minus amounts paid, balances of invoices net of payments, a current asset of sellers</td>
<td><strong>Accounts payable</strong>, trade payables, payables: Outstanding balances (due to sellers) of amounts billed minus amounts paid, balances of bills net of payments, a current liability of buyers</td>
</tr>
<tr>
<td>Flow</td>
<td><strong>The flow of trade receivables</strong>, receivables flow, period receivables: Balances of invoices net of payments during a given period, the difference between receivables at the beginning and the end of the period</td>
<td><strong>The flow of trade payables</strong>, payables flow, period payables: balances of bills net pf payments during a given period, the difference between payables at the beginning and the end of the period</td>
</tr>
<tr>
<td>Flow</td>
<td><strong>The average collection period</strong>, collection ratio, days sales outstanding: Outstanding balances of receivables divided by the average trade credit sales per day; or receivables divided by total sales on trade credit times 365 days</td>
<td><strong>Days payable outstanding</strong>: Outstanding balances of payables divided by purchases times 365 days</td>
</tr>
<tr>
<td>Flow</td>
<td><strong>Accounts receivable aging schedule:</strong> Accounts receivable tabulated by the length outstanding—by the number of days until due and past due</td>
<td><strong>Due period:</strong> The number of days after issuance of the invoice (or receipt of the bill) allowed to remit payment</td>
</tr>
<tr>
<td>------</td>
<td>---------------------------------------------------------------------------------------------------------------------------------</td>
<td>-------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Stock</td>
<td><strong>Aged receivables:</strong> Accounts receivable past due</td>
<td><strong>Payment arrears,</strong> arrears: Accounts payable past due</td>
</tr>
<tr>
<td>Flow</td>
<td><strong>Net income, surplus, profit:</strong> Revenues (total earnings) minus expenses, on the accrual or cash basis accounting</td>
<td></td>
</tr>
<tr>
<td>Flow</td>
<td><strong>Net cash flow,</strong> cash flow, net cash from operating activities: Net income adjusted for non-cash charges; net income minus receivables flow plus trade payables flow plus the flow of taxes payables plus depreciation. If the flow of receivables is greater than the sum of net income, the flow of trade and tax payables, and depreciation, net cash flow is negative</td>
<td></td>
</tr>
<tr>
<td>Stock</td>
<td><strong>Clearing,</strong> settlement, mutual netting: Without cash transactions, in lieu of payments, the bookkeeping crediting of accounts receivable of sellers and debiting of accounts payable of buyers in discharge of equal amounts of mutual obligations between two or any number of enterprises in a circular chain of trade credit, performed by the Central Bank</td>
<td></td>
</tr>
<tr>
<td>Flow</td>
<td><strong>Tax remittance:</strong> Payment of taxes in cash, including taxes withheld from workers and collected from consumers</td>
<td></td>
</tr>
<tr>
<td>Stock</td>
<td><strong>Taxes payable,</strong> tax liabilities, tax payables: Payroll taxes withheld from workers and sales taxes and value-added taxes collected from consumers due to be remitted to the government and currently held with the enterprise cash balances; also profit taxes, corporate income taxes, and employer taxes due</td>
<td></td>
</tr>
<tr>
<td>Stock</td>
<td><strong>Tax arrears:</strong> Taxes payable past due</td>
<td></td>
</tr>
<tr>
<td>Stock</td>
<td><strong>Payroll arrears,</strong> wage arrears: Wages and salaries of employees past due</td>
<td></td>
</tr>
</tbody>
</table>

Sources: Plagiarized, adapted, and compiled from numerous manuals, textbooks, encyclopedias, dictionaries, and glossaries, the most handy of which are [www.investorwords.com](http://www.investorwords.com), [www.investopedia.com](http://www.investopedia.com), and [www.trading-glossary.com](http://www.trading-glossary.com). Note, however, that most terms (e.g., accounts receivable and accounts payable, receivables flow and payables flow, and even charge and payment) are adapted in an operational rather than descriptive manner and thus may differ in appearance, but not in substance, from standard definitions. The term ‘aged receivables’ has been concocted and added for analytical purposes to mirror payment arrears and to make a stock measure of the flows in the accounts receivable aging schedule.
Chapter 2

Paradigm Lost, Paradigm Regained: Common Versus Private Income

The time-honored dichotomy of market and government has framed the entire discussion on post-Communist economies. Less government is equated with more liberty, more private enterprise, and with the development of the market economy. The rest is socialism, equated with big, restrictive Government and state ownership. However, the new phenomenon of post-Communist economies does not fit this unidimensional framework. On one extreme, as we saw in Chapter 1, the facts unearth total socialism in Russia without big, restrictive Government, in an economy that enjoys free transactions and is dominated by private enterprises. On the other extreme, as Gregory C. Chow dissected in a pioneering and largely ignored article, the facts show that a highly successful market economy emerged in China with little liberalization and privatization.¹ These two big anomalies, and many smaller in between, call for redefining socialism, the market economy, and government, and rethinking the relationships among them.

Economic Systems Matter

If socialism is not synonymous with government, then liberation from government does not automatically liquidate socialism and does not, by itself, create a market economy. Socialism runs at a deeper level and so does the market economy. Dismantling a statist socialist economic system, such as central planning, does not necessarily result in the birth of a market economy. Socialism can mutate and become transformed, as we will show, into a new and different kind of socialism.

One big question has been looming in the background during the preceding discussion: Why did excess invoicing and the tax subsidy emerge after central planning, but not elsewhere? What catapulted Russia and similar post-Communist countries in a direction far away from the real market economy? Why don’t free, private firms in Western market and developing countries resort to counterfeit spending to enforce the tax subsidy?

The simple answer is that they would if they could. A tax subsidy to the tune of 15-25 percent of GDP is too lucrative a proposition to miss, especially when it is self-enforceable. No lobbying or rent-seeking effort is necessary. It is the best of all possible worlds. However, it is impossible to launch such a system except in the wake of central planning. Firms must be able to put the entire economy on the

Enrico C. Perotti attributes arrears to the collusion of opportunistic enterprises for extracting government monetary accommodation. See Enrico C. Perotti, “A Taxonomy of Post-Socialist Financial Systems: Decentralized Enforcement and the Creation of Inside Money,” *Economics of Transition* 2, no. 1 (January 1994): 71-81 and “Inertial Credit and Opportunistic Arrears in Transition,” *European Economic Review* 42, no. 9 (November 1998): 1703-25. But opportunistic enterprises are free-riders and thus their collusion on a massive scale, which requires long sacrifice, is impossible. They would rather jump than embark ship. Possible or not, collusion was unnecessary. The network of enterprises was already in place. Had collusion been possible, arrears, counterfeit spending, and the tax subsidy would have existed in Western market economies and developing countries.

Such a network can only be inherited. It was inherited from central planning, which consisted, effectively, of a single enterprise, the nation-enterprise. Under central planning, individual enterprises acted as the nation-enterprise’s branches, sub-divisions, shops, and crews. They had one, single, common income which the government redistributed among individual enterprises though hidden cross-subsidies. The abolition of central planning, liberalization, and privatization devolved the nation-enterprise into a ready-made enterprise network for income redistribution. All it took to convert the nation-enterprise into the enterprise network was to move the government from the top of the fiscal system to the bottom.

The mechanism of inheritance and devolution is not hard to reconstruct. This is an example of the evolution of economic species. Since Thomas Hobbes, we know that if property is not common and is of some value, some claimants and property rights necessarily emerge. After a series of abrogations and confiscations, the government settles property rights one way or another for a time being. In more advanced economies, where capital stock is a factor of production and yields profits, there always are

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2Enrico C. Perotti attributes arrears to the collusion of opportunistic enterprises for extracting government monetary accommodation. See Enrico C. Perotti, “A Taxonomy of Post-Socialist Financial Systems: Decentralized Enforcement and the Creation of Inside Money,” *Economics of Transition* 2, no. 1 (January 1994): 71-81 and “Inertial Credit and Opportunistic Arrears in Transition,” *European Economic Review* 42, no. 9 (November 1998): 1703-25. But opportunistic enterprises are free-riders and thus their collusion on a massive scale, which requires long sacrifice, is impossible. They would rather jump than embark ship. Possible or not, collusion was unnecessary. The network of enterprises was already in place. Had collusion been possible, arrears, counterfeit spending, and the tax subsidy would have existed in Western market economies and developing countries.


paradigm lost, paradigm regained: common versus private income


But book profits constituted only a small part of enterprise surpluses. The bulk of enterprise residual income accrued to the government indirectly, through suppressed wages, controlled relative prices, and cross-subsidies embedded in these prices and financed by suppressed wages. As the government dispensed controlled prices between industries and thus cross-subsidized industries, it effectively invested its indirect profits (especially economic rent on natural resources) in industrial development. There was no mechanism of direct accrual of these parts of residual income to the government as the owner. Not could there be, for the impossibility of accounting for all of the above indirect flows. But this was the fiscal foundation of central planning.

Enter the abolition of central planning, liberalization of transactions and enterprise decisions, and lifting of price control. The banking system no longer had to automatically remit taxes and book profits. 10 The government lost the mechanism of appropriating enterprise residual income through suppressed wages, controlled prices, and cross-subsidies. All profits of enterprises, including residual income from suppressed wages and economic rent on natural resources, and the bulk of tax revenues automatically ended up in the hands of enterprise managers, even before formal privatization of assets. Abolition of forced transactions and forced transfers automatically devolved residual income and fiscal control to the enterprise network and its managers.

The government suddenly found itself fiscally insolvent—not technically bankrupt (for it owned

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6 We owe this insight and many other ideas throughout this book to Thomas E. MaCurdy.


10 Actually, in the case of former Soviet states, the USSR government already released enterprises in 1988 from remitting profits and thus, in effect, partly privatized the entire Soviet enterprise sector.
assets, pending privatization) but simply deprived of every principal source of revenues. Liberalization devolved the present value of government assets as the source of income. Legal privatization of assets sealed this fate. To keep control over the new system, the enterprise network had only to perpetuate fiscal distress, which it did not have to learn how to do because the mechanism was also there, by evolution. There was no design, no conspiracy, no collusion, and no discovery.

The initial payment jam which congealed the new system came about by default when the government, as part of abolition of central planning, stopped automatically paying off overdue enterprise payables to suppliers. That is, the government hardened the budget constraints. Liberalization unleashed excess invoices, counterfeit spending. Government refusal to automatically finance them unleashed the payment jam. This step towards financial stabilization, the third leg of the triad of stabilization, liberalization, and privatization, generated the initial payment jam and tax non-remittance.

Ironically, hardening the budget constraints became the final step in the evolution of the new system. Stopping one automatic mechanism, the soft budget constraints, automatically engendered another mechanism, the payment jam and the self-enforceable tax subsidy. Thus the new system of fungible income under the enterprise network and symbiont government came into being as a result of abolition of central planning, liberalization, and then privatization. The new economic species has evolved.

Let us call this new economic species Enterprise Network Socialism, or ENS for short. It automatically replaced state socialism of forced production under central planning. It substituted fungible common income of the enterprise network (the self-enforceable tax subsidy) for single common income of the nation-enterprise (the soft budget constraints and cross-subsidies for enforcing production). What was meant to be market liberalization mutated into a fiscal free-for-all, as enterprises grabbed public income, and took over the fiscal and monetary authorities. To rephrase John Milton, license emerged under the guise of liberty.

The standard view holds that the same, uniform policy kit applies everywhere, that central

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11As we discussed in Chapter 1, financing overdue enterprise payables was another major function of the banking system under central planning.

12John Milton wrote in 1673 about reformers of his time:

“License they mean when they cry liberty,
But from that mark how far they rove we see
For all this waste of wealth and loss of blood.”

planning and developing economies are all alike, and that economic systems do not matter. This view goes against economic evolution. Contrary to this view, it is crucial that these are post-Communist economies, or, more exactly, post-central plan economies. They are post-central plan, with the unified, country-wide assembly line, and they are post-central plan, with the abolition of forced production, price control, and overall government control of transactions. The result is the emergence of a predatory claimant network, with its excess invoices, the payment jam, and the self-enforceable tax subsidy.

Central planning bequests the single nation-enterprise, which becomes the network after its abolition. Paradoxically, liberal reforms superimposed on central planning beget Enterprise Network Socialism. To restate this case, it is not the extent of economic liberty and private property that separates the market economy from ENS and socialism in general.

Enterprise Network Socialism and Its Breakup

A follow-up question is why ENS failed to emerge in Poland? The answer is that such a system did emerge. It swept all post-Communist economies. In Poland, the payment jam (seen at the time as the crisis of enterprise arrears) shocked the economy in 1990-91, toppled the government, and led to financial turmoil and an 18 percent contraction in GDP. But Poland, atypical among post-Communist countries, inherited a sizeable private enterprise sector of small businesses and private agriculture. This private sector produced about 30 percent of GDP, which was not part of central planning. The network of socialist enterprises that emerged to enforce the tax subsidy was thus incomplete and incoherent. Subsequent new entrants into the private sector further undermined it.

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To a lesser extent and with less success (a deeper contraction and a smaller recovery), the Polish story typified Eastern and Central European countries,\textsuperscript{16} while countries in Southeastern Europe, especially Romania and, until 1998, Bulgaria, largely followed the Russian path.\textsuperscript{17}

China and Vietnam, in contrast, centered their policies on breaking up the enterprise network in agriculture and industry and spawning new independent firms. In 1989, Vietnam instantly closed down a large segment of industrial enterprises and enforced restrictions on the rest.\textsuperscript{18} In 1978, China

\textsuperscript{16}Janos Kornai, “The Road to a Free Economy—10 Years After,” The World Bank, \textit{Transition Newsletter} 11, no. 2 (April 2000): 3-5. Hungary especially resembled Poland. It largely developed a new-enterent market sector. Hungary created hundreds of thousands of new firms. When it privatized, it privatized mostly small and medium-size enterprises. Kornai calls this “an organic growth of the private sector.” He concludes that privatization as a strategy in post-Communist economies proved inferior at best and harmful at worst and cites the Czech Republic and especially Russia as proof. See also Laszlo Czaba, “A Decade of Transformation: Russia and Hungary Compared,” \textit{Acta Oeconomica} 50, no. 3-4 (1999): 257-281, and Jan Svejnar, “Transition Economies: Performance and Challenges,” \textit{Journal of Economic Perspectives} 16, no. 1 (Winter 2002): 3-28. Svejnar usefully divides European post-Communist economies into three groups: (1) Poland and Slovenia, the most successful in the region, did not privatize but rather relied on creation of new firms and the so-called commercialization of state enterprises (in our language, assigning separable budgets and breaking up fungible income with the government); (2) Hungary and Estonia, a less successful group, avoided rapid and mass privatization (and were criticized for that) and conducted individual enterprise sales to foreigners and other outsiders (which also breaks up fungible income); and (3) Russia and similar countries championed rapid, mass privatization.

\textsuperscript{17}Currency boards in Bulgaria and Estonia became powerful means of depriving the government of discretionary monetary policy. Such monetary regimes preclude confiscation of public income by enterprises through the issue of excess invoices. But if enterprises can build up tax non-remittance and thus a large unserviceable fiscal debt, a currency board may not be able to withstand the rising fiscal pressure (like it did not withstand fiscal pressure from debt buildup by provincial governments in Argentina and collapsed in 2001 after ten years of struggle). Additionally, in Estonia an introduction of the flat income tax helped reduce redistribution. A big role was played by an accidental factor: Major industrial enterprises employed primarily ethnic Russian labor. Ethnic Russians constituted about one-third of the population of the new, tiny country and a perceived challenge to its hard-won independence. For reasons unrelated to economic policy and based on linguistic and residence length criteria, these workers could not acquire citizenship rights. To minimize their influence, the government let their employer enterprises halt or nearly halt operation, which—as became apparent after the fact—helped the economy by reducing value subtraction. The immediate result was the unintended breakup of the enterprise network. This made the currency board sustainable. A virtuous circle thus developed for recovery and growth, even if at the cost of segregation.

launched a comprehensive set of system changes, beginning with the dissolution of agricultural communes and the transfer of land use rights to individual households on long-term leases. Then China effectively segregated its state-owned, heavy industrial enterprises from the rest of the rapidly growing new township and village enterprises (TVEs). By this two-track approach, the Chinese government split the economy into two disjointed parts. In both China and Vietnam, as the new-entrant market sector crowded out the inherited enterprise network, excess invoices were confined to a shrinking network of old state enterprises. This released productive incentives in the bulk of the economy and reallocated resources to productive uses, resulting in spectacular growth.

This policy path lies beyond the dichotomy of government and market and has little relation to simple cuts in the size of government, the scope of government control, and market liberalization. Indeed, China and Vietnam, both of which enjoyed high growth, differ on the latter score. At the very time that Vietnam broke up its enterprise network, it conducted a comprehensive liberalization of prices, transactions, and foreign trade; China postponed its liberalization for many years. Market liberalization in Vietnam did not become fiscal liberalization. It did not open access to public income


for the enterprise network because the network itself was dismantled.

The difference between rapid growth, modest growth, moderate contraction, and great contraction lay in the extent of breaking up the enterprise network, in preventing the mutation of socialism from governmental to a non-governmental incarnation, and in expanding the pre-existing private sector (if countries were lucky to have one, as did Poland), and in the genesis of new firms that could not redistribute income.22 High growth had very little, if anything, to do with liberalization and privatization; more often than not, lack of these measures (for example, no privatization and limited liberalization in China and Poland) helped isolate and control old enterprises, thereby dis-empowering the network. New-entrant firms, like Chinese TVEs, were especially a key factor, irrespective of their property type (TVEs happen to be local government and community owned).

New entrants as such are quantitatively, not qualitatively, beneficial to market economies in that they are more innovative and spur growth. In marked contrast, new entrants are critical in post-Communist economies because they are distinct and separated from the inherited network. The preexisting private sector plays the same crucial role. The new-entrant sector, along with the preexisting private sector, turned out to be crucial in post-Communist economies because its expansion automatically reduced the output of the inherited network as a share of GDP, and the network’s power over fiscal and monetary policy. The remnants of the network may remain in place, but the economy is no longer Enterprise Network Socialism. Thus Russia is today an example of Enterprise Network Socialism but China and even Poland are not. Their paths diverged.23

Private Income Versus Common Income in 42 Post-Communist Countries

Figure 2.1 examines the performance of 42 post-Communist economies from the perspective of the network inheritance or its breakup. The vertical axis measures cumulative growth of GDP during the decade of 1990-99.24 The horizontal axis plots the share of GDP produced by firms that do not collect

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22A comparative analysis of post-Communist China, Poland, Vietnam, and Russia is in John McMillan and Christopher Woodruff, “The Central Role of Entrepreneurs in Transition Economies,” Journal of Economic Perspectives 16, no. 3 (Summer 2002): 153-170. This article traces the success or failure of post-Communist economies to the new-entrant market sector or paucity of thereof.

23Historical inheritance in the case of post-Communist economies was not an ontological fate but an outcome, even if unintended, of a policy choice. One policy choice generated spectacular growth, another, great contraction. There is no preordained dependence of the past and the path. History is crucial but neutral. It is there, it is given. Some countries can utilize historical advantages, such as instant growth opportunity due to inherited value subtraction and other inefficiencies. Other countries unleash historical disadvantages, such as the inherited enterprise network. Policy with no regard for history is itself a policy choice, which, in the case of post-Communist countries, led to socialist mutation.

24As figure 2.1 indicates, the growth data derive from the IMF supplemented by the official national statistics. There has been an extensive debate about the quality and reliability of growth data during the decade of system change.
FIGURE 2.1
CUMULATIVE ECONOMIC GROWTH AND PRIVATE INCOME IN POST-COMMUNIST ECONOMIES, 42 COUNTRIES, 1990-99

The former East Germany: German Federal Statistical Office and Deutsches Institut fur Wirtschaftsforschung.
Private income: Calculated by the authors from national official statistics, The Economist Intelligence Unit, and national sources.
The data on East Germany refers to 1994 when major industrial enterprises, which produced at least half of GDP, were subsidized by the Ministry of Privatization.
the tax subsidy, do not generate excess invoices, do not have a stock of arrears, and are not in the payment jam. The latter excludes any portion of GDP produced by the inherited network. We define these firms as earners of private income, in the sense that they do not participate in income redistribution, do not socialize income across industries and enterprises, do not finance or receive cross-subsidies, and do not confiscate tax collection and other public income. Private income in this sense is opposite to common income between enterprises and between enterprises and the government, both under central planning and Enterprise Network Socialism. Their shares in GDP are opposites.

It is possible to calculate with a reasonable degree of confidence the share of GDP produced by these non-network firms in the three key countries of Russia, Poland, and China. In 1995, this share constituted 21.8 percent in Russia, 57.5 percent in Poland, and 77.8 percent in China respectively. We also have direct data from national statistics on several other countries such as Belarus, Ukraine, Moldova, Kazakstan, Uzbekistan, Slovenia, Albania, Vietnam, and Myanmar. In addition, the data indicate that in Turkmenistan and Tajikistan the share of output in GDP of firms that broke outside the network does not exceed 5 percent. Thus we can make direct calculations for one-third of the sample. For all other countries we have to resort to crude estimates based on the following procedure: We compound the proportion of GDP produced by those industries with predominantly small firms and farms outside the enterprise network and the share of output of such firms in a given industry. For many countries, this method yields only very crude and unreliable approximations, with the margin of error up to 10 percentage points of GDP. Note that private income and our measurement of it may not necessarily overlap with private ownership of assets. In fact, it clearly does not at all in the crucial cases of Russia and China. In Russia, most enterprises and banks are private and income is not; in China, most income is private while most enterprises and banks are not.

The debate seems to have settled in a consensus to rely on the adjusted and updated IMF series. For a balanced and informed discussion, see Nauro F. Campos and Fabrizio Coricelli, “Growth in Transition: What We Know, What We Don’t, and What We Should,” pp. 795-818.

25 Calculated from the weighted average of the shares of output of small private businesses and foreign ventures in industry (7.7 percent), construction (21.6 percent), transportation (10 percent), non-trade services (50 percent), and trade (42 percent), and personal plots and private farms in agriculture (45.8 percent). The source is Russian State Committee on Statistics, Rossiiskii Statisticheskii Ezhegodnik 1996 (Moscow: RSCS, 1996), pp. 294, 550, 691-692.

26 Central Statistical Office of Poland, Rocznik Statystyczny 1995 (Warsaw, 1996), pp. XXXV-XXXVI, 528. Due to lack of privatization, Poland is split into the old enterprise network and the private sector of old and new-entrant firms and farms outside the network. Thus in the Polish case, unlike Russia and many other post-Communist countries, private sector data approximates the share of private income in GDP.

27 Calculated from the weighted average of the shares of output produced by Township and Village Enterprises (TVEs) in industry (66 percent), TVEs and individual family farms in agriculture, forestry, and fishery (97.1 percent, that is, all agriculture except state farms), TVEs in construction (33.7 percent), and the new private sector and foreign-funded ventures in disaggregated transportation, telecommunications, commerce, and various services. The source is People’s Republic of China, State Statistical Bureau, China Statistical Yearbook 1996 (Beijing: China Statistical Publishing House, 1996), pp. 5, 23, 25, 42, 386, 390, 401, 403, 405, 472, 543, 727, 730.
Our choice of countries is straightforward but atypical. We include all post-central plan economies for which data exist. It is more forthright to employ crude data and advise the reader accordingly, than employ selective samples of countries, which makes any analysis suspect on grounds of data manipulation. Central planning, not Communism as a political system, is our criterion. We include former central plan countries which did not call themselves Communist, such as Myanmar, and exclude countries which called themselves Communist and Marxist-Leninist but did not install central planning, such as Benin.

The empirical literature usually samples 25 to 28 countries of the former Soviet Union and Eastern and Central Europe. The sample excludes China, Vietnam, and other post-Communist countries outside of the narrowly-defined Eurasia. This exclusion is usually based on development or rather underdevelopment grounds. We do not find this reasoning compelling. Albania, Mongolia, and the countries of the former Soviet Central Asia are no less agricultural and no more developed than China, Vietnam, or Nicaragua. As a matter of fact, not only Central Asian countries and Albania, but also Ukraine and Moldova, are poorer in terms of per capita income measured in world prices (at purchasing power parity) than China. Moreover, as we discussed in Chapter 1, due to significant value subtraction, the overindustrialized Communist countries of Europe had a potential growth advantage over the less industrialized central plan countries of Asia and other continents. Therefore, lower stages of development, even when they are present, should not preclude lumping all post-central plan countries together in one sample. Needless to say, econometric techniques, such as multi-variate regression, are able to control for such differences. Furthermore, the larger the sample the less the data errors in individual cases affect the overall relationship.

We also find no justification for the exclusion of many non-European countries on the grounds that they experienced only partial command economies unlike Eastern Europe and the former Soviet Union. In fact, the opposite is often true. Total government economic control was much more ubiquitous in China, Vietnam, Cambodia (turned into one commune), Laos, Ethiopia, and Mozambique (where state agricultural plantations represented effectively slave labor) than in Hungary, Poland, the former Yugoslavia, and even the former Soviet Union. Finally, for completeness, we also include two former Communist countries which underwent unification, the former East Germany, for which separate data exist after unification until the late 1990s, and the former South Yemen, for which we use national Yemen data for the period after unification. The only serious factor that separates the 25 or 28 economies, which are usually included in the empirical tests, from those excluded is that the former experienced great contractions while most of the latter embarked on instant growth. But this is exactly the reason to include both groups in the sample to test any scientific hypothesis. Otherwise, due to the selection bias, the results of the empirical work are predetermined.

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In addition, this test has obvious technical weaknesses. First, correlation does not mean causality. Causality can move in the opposite direction, that is, economic growth due to other independent causes can spur the breakup of the inherited enterprise network. Therefore, at best, this test can account for instant growth and for endless contraction during the 1990s, as in the cases of China and Russia, and for overall performance in Eastern Europe. But it cannot tell us why contraction was greater in some countries if they recovered fast; and why their recovery was especially strong if their prior contraction was deep. It cannot distinguish between countries that had sluggish instant growth, like Nicaragua, and between those that underwent a great contraction followed by strong recovery, like Poland, Slovenia, Hungary, and Estonia. Moreover, for technical reasons, it is more an illustration than a test.\footnote{In addition, this test has obvious technical weaknesses. First, correlation does not mean causality. Causality can move in the opposite direction, that is, economic growth due to other independent causes can spur the breakup of the inherited enterprise network and the expansion of the private income sector. However, this reverse causality cannot explain contraction. Why would contraction, produced by other independent factors, create more enterprise network in countries like Russia, when this network was already inherited in full from central planning? The flow of causality more likely goes from private income to economic growth. Second, correlation may be spurious. Many other forces were at work, from different inherited industrial structures to external and civil wars and blockades. These various influences may cancel each other and inadvertently make various countries fit a postulated relationship. The relationship must be controlled for such important factors as the level of development before 1990 (represented by income per capita in world prices, at purchasing power parity), industrial structure (e.g., the share of industry or agriculture in GDP), investment practice (investment share in GDP before 1990), human capital (literacy as a measure of human capital stock and percent of youth enrolled in secondary education as a measure of human capital flow), the share of private sector before the abolition of central planning or before 1990, years of central planning before 1990 (the strength of the enterprise network and other inherited factors), years after central planning before 1990 (+12 in the case of China, -2 in the case of Russia), population size, years in wars and blockade in the 1990s, and other influences. In the absence of a model of growth after the abolition of central planning, all these variables are ad hoc, but they need be employed. We present in the appendix several multivariate regressions along these lines, with different specifications and instruments. In most of them the positive relationship between private income and growth holds statistical significance, but in others it does not.}

What it does give is a sense of direction. The horizontal axis in figure 2.1 introduces a new variable, Figure 2.1 demonstrates a strong positive relationship between cumulative economic growth in the 1990s and the growth of private income accompanying the breakup of the inherited enterprise network. This positive relationship accounts for (we prefer not to say “explains”) 84 percent of the variation (the linear form of the same relationship accounts for 69 percent of the variation; a better fit by the polynomials of the second and the third degree suggests an acceleration of this influence as the enterprise network further breaks up and private income expands). The relationship holds across most of the 42 economies (Estonia and Belarus are among the unexplained outliers; Serbia is probably an outlier because of a long war). Most importantly, it holds across the spectrum of growth rates. It holds equally for those countries that underwent endless contractions during 1990-99, those that experienced contraction and recovery, and those that enjoyed instant growth, both modest and rapid.
the extent of a **type of income**, in this case the extent of private income as a share of GDP. This is a new dimension, separate and independent from the extent of government economic control and from the type of property. One can simply call it **the income dimension**. It distinguishes the two types of income, private income vs. common income as shares of GDP. The income dimension ranges from totally private income to totally common income. Classical market economies are close to the former, central planning and Enterprise Network Socialism are close to the latter, and all other countries are in-between, with varying (and opposite) degrees of private and common income.

Figure 2.1 illustrates this approach in the case of 42 post-Communist economies. It shows that the extent of private income as a share of GDP is an independent variable which can account for divergent economic trends after the abolition of central planning. Figure 2.1 also indicates that the expansion of private income, embodied in the new-entrant market sector, is equivalent to the extinction of common income embedded in the inherited enterprise network. It summarizes in abridged form for many countries the same perspective that we used to examine Russia’s Great Contraction.

The horizontal axis in figure 2.1 constructs the income dimension as the increasing extent of private income, which implies the decreasing degree of common income. One can describe **private income** as exclusive and internal to its earners. Private income excludes non-earners/non-producers of a given output which earns this income. Private income is free from redistribution by the government or the enterprise network and other private predatory forces. Private income prevails in China and similar countries that broke up the socialist enterprise network and built the new market economies. To a greater extent, private income characterizes classical and contemporary Western market economies (the latter, in their productive market sector, that is, minus the modern Welfare State).

By analogy with common property, we call the second income type **common income**. Common income is not exclusive to its earners. It socializes income and output and redistributes income from producers/earners to non-producers/non-earners. Redistribution of income can be made by the government (e.g., under central planning, rent-seeking in developing economies, the Welfare State, etc.) or by non-governmental forces, such as the enterprise network (under ENS) and other private predators (e.g., piracy and slavery). We use the terms single common income for central planning and fungible common income for Enterprise Network Socialism. The first name emphasizes total governmental control over the nation-enterprise. The second fits the enterprise network and the symbiont government.

Private income can define the market economy, common income defines socialism. The new dichotomy of private and common income is different from the old dichotomy of market and government.

Paradigm Lost

The dichotomy of market and government framed the thinking about the Great Contraction in Russia and similar post-Communist countries. The dominant literature initially pinpointed insufficient
liberalization and privatization—in short, too much government.\textsuperscript{32} It later added emphasis on the inability to collect taxes, develop the rule of law, protect shareholders, enforce contracts, and regulate banking—in short, too little government.\textsuperscript{33} The literature also explored the dynamic application of the same dichotomy. It presented equally compelling arguments on the speed of liberalization and privatization. Moving too slow causes output and financial losses, thus delaying economic recovery.\textsuperscript{34} Moving too fast creates disorganization, disrupts the supply lines, increases financial losses, and contracts output.\textsuperscript{35}

These are all cogent considerations, true to fact, even if they contradict one another. But they are too generic and can apply almost anywhere at various times, to economies with high, low, zero, or negative economic growth, which does not explain Russia’s unprecedented economic decline. The government played an important role in the economies of the rapidly advancing East Asian countries, aptly called the Asian Tigers, both in control and ownership.\textsuperscript{36} Large state-owned firms have operated


in Italy, France, and Great Britain for decades of the twentieth century, and are still prominent in Norway and Austria. Germany still has a large state-owned banking sector. Many countries in Western Europe have rigid labor markets. Italy had been notorious for lawlessness, tax evasion, and corruption. Poland and Slovenia, the fastest recovering Eastern European countries, and China, the fastest growing country in the world, did not privatize their old industries. Russia liberalized and privatized more than most post-Communist economies and Latin American countries; in some areas, even more than some Western market economies on the above list.37

From the standpoint of the dichotomy of government and market, Russia converges with Western market economies. For Western observers, policy makers, researchers, and investors Russia has all the appearances and trappings of a market economy. The West has formally declared Russia a market economy in 2002 and invited it to join the G-8; membership in the World Trade Organization is pending. Russia receives a high mark on the basis of a comprehensive scale of reform indicators—combining liberalization, privatization, and legal and institutional frameworks—devised by the European Bank for Reconstruction and Development and employed by the International Monetary Fund. This scale is the most comprehensive practical application of the reigning paradigm. On this scale, in 1999, Russia ranks at 2.5-2.7 compared with Poland at 3.4-3.5 and Slovenia at 3.2-3.3, and is well above Belarus at 1.5-1.8.38 The scale is linear, not Richter (logarithmic). The difference of 0.7 to 1.0 percentage points in market quality between Russia and Poland cannot account for more than 70 percentage points difference in their respective cumulative growth during the 1990s: Poland, +28 percent, and Russia, -45 percent (see figure 2.1).

To sharpen the contrast, one can add a comparison with China. This comparison is often disqualified on the grounds that China is a poor, developing country. Yet, in terms of a universal measure of economic development, income per capita in world market prices (at purchasing power parity, to use the technical term), China, with $3,700 per person in 1999, is more prosperous than most parts of the former Soviet Union except the Baltic states, Belarus, and Russia. China is fast closing the gap with Russia, at $3,950 per person.39 In terms of liberalization, privatization, commercial


39The World Bank, Entering the 21st Century. World Development Report 1999/2000, pp. 230-231. However, the IMF revised the estimate of Russia’s income per capita at purchasing power parity in 1999 as $6,800. The IMF, World
banking, currency convertibility, and other conventional measures, China is well behind Russia. In terms of creation of new market firms, usually owned by local governments and communities (the Township and Village Enterprises, or TVEs), and family farms, China is well ahead of Russia or any other post-Communist country. On the above scale of reform indicators, China ranks at 2.1 (the same as non-reforming Uzbekistan) and Vietnam at 1.9, both below Russia. But the score makes little difference. China’s cumulative economic growth during 1990-99 was a whopping 150 percent compared with Russia’s 45 percent contraction. No existing reform scale can account for this huge contrast. China’s success goes completely against the prevailing dichotomy and remains largely unexplained, as does Russia’s failure.

Having thoroughly analyzed the Chinese experience in comparison with the dominant paradigm, Gregory C. Chow saw the paradigm lost. We arrive at the same finding after looking at the Russian experience as well as that of 42 post-Communist countries. A most comprehensive, recent empirical study by Andrew Berg et al. of the usual sample of 26 post-Communist countries of Eastern and Central Europe and the former Soviet Union tested the impact of conventional factors on their contractions and recoveries. Performed without prejudice, it found the framework at loss:

“If we consider all four classes of models, no single policy variable considered was always robust (...) This is a somewhat discouraging result, as it shows that alone the data offer very little guidance on the relative significance of specific policies. In other words, the same data set could be used to make contradictory claims about the significance or lack of significance of various policy variables.”

In plain English, conventional factors, important in Western market and developing economies and

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Economic Outlook, October 2000, p. 129. If this were even remotely possible, Russian income per capita at purchasing power parity in 1989, before the contraction, would have been $12,400, higher than Portugal, Greece, and South Korea, and close to Spain, Ireland, and Finland, which is too absurd to refute. The only reason for this revision is not to let China close the income gap with Russia.

40The IMF, World Economic Outlook, October 2000, p. 129.


42The conclusion of the most recent and comprehensive overview of the theoretical and empirical literature on the causes of divergent economic growth and contraction in post-Communist countries is that we know that we don’t know. Nauro F. Campos and Fabrizio Coricelli, “Growth in Transition: What We Know, What We Don’t, and What We Should,” pp. 819-831.


centered around the relationship between market and government, do not explain economic success or failure in post-Communist countries.

A most recent, comprehensive survey of the literature on growth and contraction in post-Communist economies concludes in the carefully chosen language:

“In an important implication of the two brands of literature reviewed (...) is that price liberalization and tight macroeconomic policies do not necessarily foster growth. Institutions enabling the functioning of a market economy are a fundamental precondition (...) [but] The notion of institutions is too vague to lead to a simple theoretical treatment.”  

In plain English: Paradigm lost.

Let us take a quick glance at the experience of the 1990s in the same 42 countries that we observed before, but from the standpoint of the dominant literature. We will even use, for the short duration, its own language. It is more appropriate for a church than for scientific discourse but this in itself conveys the dominance and confidence of the prevailing wisdom. The triad of liberalization and privatization, along with financial stabilization, is called in this language the Orthodox strategy.\footnote{Referring to the IMF, World Economic Outlook, October 2000, p. 131.} Russia first and foremost falls into this category; Moldova, Latvia, Kazakhstan, Ukraine, and Romania come very close. Partial application of these policies, combined with government regulations such as wage control, control of bank credit to enterprises, capital controls, etc., which were used in Poland, Hungary, Slovakia, the Czech Republic, and elsewhere, are called the Heterodox strategy. Other unconventional measures, such as the currency board introduced in Estonia and, recently, in Bulgaria, belong to the same category. This taxonomy leaves no room for China, Vietnam, and other post-Communist economies. They did not apply the triad of liberalization, privatization, and stabilization (or, like Vietnam, applied only part of the triad). They did not liberalize the inherited enterprise network but phased out and broke it up instead. How shall we call them? In the spirit of the language we temporarily adopted, it would be appropriate to call them Heretics.

Figure 2.2 plots cumulative economic growth in the decade of 1990-99 in the 42 post-central plan countries for which the data is available (Bosnia and Herzegovina is missing). It marks the appropriate countries by the three categories: Orthodox, Heterodox, and Heretics. We add the fourth category of a different nature. It encompasses countries that endured external and civil wars and blockades during this decade. This fourth category is accidental. The three paradigmatic categories constitute exactly the scale that we discussed above, the scale of liberalization and privatization of enterprises from big Government on an expected move to the market and growth. If the paradigm

\footnote{Nauro F. Campos and Fabrizio Coricelli, “Growth in Transition: What We Know, What We Don’t, and What We Should,” pp. 825-826.}
works, we must find the Orthodox performing better than the Heterodox, with the Heretics at the bottom. Figure 2.2 shows that the Orthodox, especially Russia, Moldova, and Ukraine, is indistinguishable in its economic performance from the countries that underwent long wars and blockades, such as Georgia, Tajikistan, Serbia, Azerbaijan, and Macedonia. The Heterodox is a variable mix, with the cumulative result of the decade from moderate growth in Poland to still significant accumulated contractions in Estonia and the Czech Republic (in the latter, contraction resumed in 1998-99 after an aborted recovery). The Heretics exhibit growth from good to excellent. We did not choose this language. It was chosen by the representatives of the paradigm, to indicate its omniscience. Figure 2.2, based on evidence, reveals the swift, unambiguous, and resolute rejection of a dominant paradigm.

The Labors of Sisyphus

The triad of stabilization, liberalization, and privatization (SLiP, for short) developed as a major practical policy application of the dichotomy market vs. government. It is a policy navigation from government to market. The strength of the triad lies in its record of success in a number of developing economies. It was also successfully applied in Western market economies, which were diverted in the twentieth century towards big government, but then reverted to somewhat more classical liberal roots.

The experience of post-Communist economies undermines the universal applicability of the triad. A simple comparison of Russia, Poland, and China, and many other countries in between, suggests a rather negative relationship: the less nations apply the SLiP reform, the better economies perform. SLiP inadvertently unleashes Enterprise Network Socialism after the abolition of central planning. We dissected the mechanism of this evolution earlier in this chapter. Not using the triad allows countries to phase out and break up the enterprise network, prevent socialist mutation, employ the windfall growth potential, and enter the road to the market economy and economic growth.

The application of SLiP to post-Communist economies is counter-productive in more ways than one. Not only does SLiP reroute countries from growth to contraction, it also perpetuates their slip down, or as the song says, slip-sliding away. This is because in post-Communist economies, with their inherited enterprise network, the three components of the triad are mutually incompatible. To wit, liberalization and privatization, as we have explained, invariably and inevitably result in financial destabilization—the exact opposite of the intended outcome. They are in internal conflict, they undermine one another, and their continual application further erodes the economy. Russia, with its Great Default, is the most salient example.

Enterprises, liberated from government control and privatized, take over fiscal and monetary authority, enforce the tax subsidy, build up public debt and lead to serial defaults. This ruins government efforts towards financial stabilization. Before the default, instead of a default, or after the default, the government, which cannot place more debt, accelerates money printing and resumes inflation. Financial stabilization can only go through transient episodes. In order to return to financial stabilization after the
Note: Orthodoxy and heterodoxy are defined using the standard terminology of the IMF and the literature; the term “Heretics” is added in this spirit.
default and resumption of inflation, the government rolls back liberalization (especially takes capital flows, foreign trade, and energy prices under control) and halts privatization.\textsuperscript{47} It breaks the SLiP triad. A renewed liberalization and privatization drive accelerates fiscal failure and again ruins financial stabilization. The process repeats itself as, in Greek mythology, the labors of Sisyphus.

As a result, the triad of stabilization, liberalization, and privatization is never implemented as a whole, regardless of whether the government tries to implement it, as in Russia, or eschews it, as in China and Poland. This situation has a positional advantage in the policy argument and policy making. The policy of SLiP can never be proven wrong because it can always be said, true to fact, that one or another component of the triad has not been implemented. And these non-implemented components recycle back and forth.\textsuperscript{48} The dominant policy literature can never be refuted; the IMF can never be wrong; the liberal reformers in Russia and similar countries can never go wrong. The Sisyphean labor of reform is never finished (and since the reformers are never discredited, their claim on power is always valid). From the standpoint of science, any hypothesis that cannot be disproved by evidence and is always right is therefore not scientific. It has no value, much like the hypothesis that people can be immortal if they have the political will not to die. As Jonathan Swift wrote,

“The professors contrive new methods of agriculture and building, and new instruments and tools for all trades and manufactures, whereby, as they undertake, one man shall do the work of ten; a place may be built in a week, of materials so durable as to last for ever without repairing. All the fruits of the earth shall come to maturity at whatever season we think fit to choose, and increase an hundredfold more than they do at present, with innumerable other happy proposals. The only inconvenience is, that none of these projects are yet brought to perfection, and in the meantime the whole country lies miserably waste, the houses in ruins, and the people without food or clothes.”\textsuperscript{49}

Paradigm Regained

Why does the dichotomy of market and government fit Western market and developing economies and promote growth policies but fail on both counts in post-Communist countries? This dichotomy serves as a shortcut, which reduces a multidimensional world to one—and, as it turns out, false—dimension. It

\textsuperscript{47}In the Russian case, the Central Bank reintroduced capital controls after the Great Default of 1998, specifically, mandated repatriation of 75 percent (later, 50 percent) of export revenues. This contributed to fiscal stabilization, lower inflation, partial dissipation of enterprise arrears, and economic recovery.

\textsuperscript{48}The IMF always found in Russia that either financial stabilization or structural reform have not been implemented, but ignored their perpetual changing places.

equates limited government and private property with the market economy and it identifies a big, restrictive Government and state ownership with socialism. Neither of these two equations holds universally.

They hold only in three major but special cases: (1) in Western market economies with limited government; (2) under central planning with near-total socialism and total government; and (3) in many (but not all) developing and historical economies in-between. Yet, in Russia and similar post-Communist economies, limited government and private property coexist with near-total socialism of the enterprise network, not with the market economy. At the same time, China and similar post-Communist economies foster the new-entrant market economy with little private ownership and under highly restrictive government. These conjunctions break both equations: Socialism is not big, restrictive Government and state ownership; the market economy is not limited government and private property.

But this new experience also breaks the unidimensional, reductionist paradigm and immediately opens several new dimensions. The government has its own dimension, ranging from highly restrictive to limited to absent. Limited government embodies economic liberty. The type of property is another dimension, which extends from common property of all to property rights of private and public entities. The property rights literature elaborates this dichotomy, showing that common property implies common access to assets and resources. Common access leads to predatory runs on resources and their depletion, as happens with land, water, and wild game in traditional societies. Private property, state ownership, and other types of property rights exclude common access and internalize the use of resources, whereas common property socializes and redistributes resources.

The property dimension and the government dimension

To initiate a break from the one-dimensional paradigm, figure 2.3 introduces a two-dimensional

We treat confiscation and redistribution of property by the government (nationalization) or by private predators (e.g., conquest, brigandry, piracy, or periodic redistribution of assets) as a conversion into common property, even if property rights of the new owners settle after confiscation and redistribution. Plainly, redistribution of assets automatically makes property common until a new settlement of property rights. Common property can be viewed as perpetual redistribution of assets and resources, while confiscations exemplify one-time, short-term commonization of property. The difference is merely in duration, not in substance. Figure 2.3 marks common property in red, both permanent common property and transient confiscations and other redistributions. Empirically, confiscations and redistributions were

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FIGURE 2.3. PROPERTY TYPES AND GOVERNMENT RESTRICTION: 32 EMPIRICAL EPISODES

(Property rights are in blue, common property is in red)

Privately-owned corporate industries under government planning: Germany, 1933-45
Private land and trade under franchised state socialism: medieval Arab states, India
Privately-owned, state-supplied slavery, state land, mines: ancient Greece, Rome
Privately-owned feudal manors with servitudes: Europe, 700-1400
Privately-owned pre-industrial firms, guilds, and estates with privileges: Europe, 1400-1700
Peasant homesteads on long-term leases of land: Europe, 1400-1800
Private slavery in market and state-socialist economies: U.S., Cuba, Brazil, 1600-1860
The redistributive network of privatized and state enterprises: Russia, 1990s
Private family farms: U.S., Western Europe
Privately-owned firms with newly-made productive assets and private income: U.S., industrial Europe, Japan
Private plots on collective or state land, USSR
Communal land as a fiscal device: Imperial Russia
Labor-owned and managed enterprises with central plan: Yugoslavia, 1950s-80s
Subsidized communal agribusinesses (Kibbutzim): Israel
Cooperatives in forestry and fishery: Canada, U.S.
Neolithic storages of output surpluses and private occupancy of land, private debt slavery, post-8000 B.C.
Local government-owned firms (TVEs) with private incomes: China, post-1978
Local turnpike trusts, city corporations, private canals: England, since 1630
Assets with open access to private predation: Communal land, monasteries, conquests, brigandry, piracy, financial looting

State-owned enterprises under central planning (the nation-enterprise): USSR, China, pre-1978
State, temple, communal, and private land, forced production in irrigation: ancient Egypt, Mesopotamia, China, Inca
Franchised serfdom: Russia, 1497-1861
Family farms on leased, state-owned land: China, post-1978
Private and state-owned firms and farms with incomes common with the government: Latin America, India, Africa
State-owned firms with incomes common with the government: Western European Welfare States
Private and state-owned firms and farms with incomes common with the government: Latin America, India, Africa
State, temple, communal, and private land, forced production in irrigation: ancient Egypt, Mesopotamia, China, Inca
Franchised serfdom: Russia, 1497-1861
Family farms on leased, state-owned land: China, post-1978
Private and state-owned firms and farms with incomes common with the government: Western European Welfare States

Private ownership
Cooperative
Local
State ownership
Common property

PROPRIETARY TYPES

PRIVATE < ---------> COOPERATIVE

PRIVATE < ---------> STATE

PRIVATE < ---------> COMMON
frequent on a partial scale in many economies with the otherwise prevalent private, cooperative, local
government, or national state ownership. To reflect this history, we mark these cases partly in red to an
estimated extent. These are partially mixed episodes of property types.

The vertical axis in figure 2.3 constitutes the government dimension. It extends from totally non-
restrictive to totally restrictive government, approximated as the degree of government control over
economic activity. It is the dimension from absent to limited to total government. Empirical cases of 32
property episodes in figure 2.3 are organized accordingly.

Figure 2.3 illustrates how a simple two-dimensional frame can encompass and systematize empirical
information around the world and through history. And it does more. By organizing empirical cases, it
shows that a frequently postulated complementarity between limited government and property rights or
between limited government and private property just does not exist. Another frequently postulated
complementarity between restrictive government and state ownership, the converse of the above
relationship, also does not exist. One can view figure 2.3 as a scatter bivariate diagram. Both variables,
property types and government restriction, are scattered all over the map. There is no correlation between
them. The empirically observable long-term and world-wide relationship between government restriction
and property types is random. It is beyond the scope of our book to investigate why this is so and what
it means for policy. But it follows that liberalization and privatization are neither complementary nor
contradictory to each other. The variable experience of post-Communist economies, from Hungary and
Poland to China and Vietnam, reinforces this point. Property and government are independent and
separate dimensions.

The income dimension and the government dimension

Figure 2.1 introduced one more dimension, the income dimension, in the empirical case of 42 post-
Communist economies. One can design the income dimension as the expansion of private income and the
extinction of common income, as we did on the horizontal axis in figure 2.1. One can take a more somber
approach and view the income dimension in reverse, as the exception of market economies from the vast
extent of socialist economies. Figure 2.4 takes this approach. It makes a stylized presentation of the
income dimension in the two-dimensional frame similar to figure 2.3. The vertical axis is the same extent
of government restriction of the economy, from absent to limited to total government, as in figure 2.3. The
horizontal axis in figure 2.4 is the new income dimension. It substitutes for the property dimension in figure
2.3. By analogy with the property dimension from private to common property, the horizontal axis in figure
2.4 constitutes the income dimension from totally private to totally common income. It represents the extent
of income redistribution from producers/earners to non-producers/non-earners from zero to 100 percent
of GDP.

Dimensionally, the two designs in figures 2.1 and 2.4 are identical as in the proverbial glass half-full
and half-empty. But figure 2.4 looks like the vast expanse of common income, numerous species of
socialism through history and around the world, and a small island of private income—the market economy
FIGURE 2.4. POST-COMMUNIST ECONOMIES IN A TWO-DIMENSIONAL PERSPECTIVE

Market economy, restrictive government: China, post-1978

Industrial central planning, forced production: USSR, China, pre-1978

Pre-industrial Europe, developing countries, historical economies around the world

Breakup of common income, liberalization, privatization in various amalgams

Private slavery, conquest, brigandry, piracy, and other private predation

Breakup of common income, limited liberalization

Enterprise Network Socialism, symbiont government: Russia, 1990s, the CIS

Market economy, limited government: classical England, U.S., the Asian Tigers

Liberalization and privatization

NON-RESTRICTIVE → RESTRICTIVE

PRIVATE ← ——— ——— ——— ——— ——— INCOME ——— ——— → COMMON
at the world's end and history's crest. The blue arrows indicate the breakup of common income in the direction of private income economies along the income dimension. The slopes of the blue arrows correspond to estimated reductions of government restriction—liberalization and privatization in various cases. The red drop-down arrow from central planning to Enterprise Network Socialism depicts the inheritance of the enterprise network—liberalization and privatization with no breakup of common income. This red arrow charts the devolution from single common income to fungible common income.

By the measures of income redistribution and government restriction, figure 2.4 fits post-Communist Russia and China on the same map with Western market economies, central planning in Communist countries, and an array of historical and developing economies lumped together. Only the split of socialism (common income) from restrictive government, the split of the market economy (private income) from limited government, and the general split between income and government dimensions make it possible to fit post-Communist economies on the map of the world.

The income dimension, private income, and common income

The moment has come to formally introduce the dichotomy of private vs. common income and the income dimension. The reader will see why this has not been done at the outset and why the prior invocations of private and common income might have seemed sketchy if not obscure. The designations “internal,” “exclusive,” “socialized,” “redistributed” sounded, admittedly, more rhetorical than rigorous. It takes an excursion into the ontological nature of income. We make it brief now and will expand it and lay out its foundations in the next chapter. The ontological problem of income is hard because it is twofold.

1. What makes income a dimension is that income constitutes returns on production, and returns may not be exclusively appropriated by producers to the exclusion of non-producers. Thus returns can be internalized or socialized.

2. What makes income a unique, self-contained dimension is that it can be redistributed—taken by non-producers from producers. Other returns, such as benefits of inventions and costs of pollution, cannot be taken away and redistributed. They can only spill over from producers to non-producers and thus add returns to non-producers. Redistribution of income and addition of returns (benefits or costs) constitute two different types of socialization. One is spillovers (externalities), the other, takeovers (redistribution). One is benevolence or negligence, the other, predation and suppression. The former may slow down technological progress, the latter suppresses output. This is a fateful, albeit ignored, difference.

To make a long story short, these two ontological sides of income can be sorted out as follows:

1. Income is returns on products and on factors of production, such as labor (wages), human capital (wages and prizes), financial and physical capital (interest, returns on financial assets, and profit), and land (rent). In the interactive flow of production, returns accrue simultaneously to the producer and form his
Pigou invented a new accounting approach to the economic problem. He pointed out that, in various economies and sectors of each economy, returns to the producer and social returns may or may not coincide. If they coincide, producers internalize their returns. Internalization means the equivalence of social returns and returns to the producer. Internalized returns are exclusive to their producers and earners. If social returns and returns to the producer differ, returns are socialized. Socialized returns are non-exclusive because they accrue to non-producers and non-earners in addition to, or instead of, producers and earners.

Don’t be intimidated by the jargon. This part of the story is simpler than it sounds. Social returns are products, goods. Returns to the producer are products kept for himself and income earned from others. The relationship between social returns and returns to the producer is that between production and compensation, between contribution and remuneration. If they are equivalent, producers earn what they have produced and exclude non-producers/non-earners of a given real income (output). This is internalization. If production and compensation differ, non-producers and non-earners are not excluded and they appropriate what they did not earn. This is socialization.


54 Arthur C. Pigou, The Economics of Welfare, pp. 135-145, 174-214, 223-227. We use the notion ‘returns to the producer’ instead of ‘the marginal private product’ introduced by Pigou and instead of ‘private returns’ in the subsequent literature. The reason is substance, not connivance. The word ‘private’ in the literature is meant in the organizational sense, that is, everything that is not government: households and firms. This leaves a big hole in the accounting arithmetic of ‘private returns’ against social returns. For only if returns to the government as the producer of public services coincide with social returns, can returns to firms and households coincide with social returns. Without taking government services and government receipts into account, one cannot infer from the national income statistics whether or not ‘private returns’ coincide with social returns, and this defeats the very notion of ‘private returns’ in the organizational sense. This leads us to redefine the word ‘private.’ We are more Pigouian than Pigou. We use the term ‘private’ in its intrinsic sense, that is not the type of organization but the exclusion of non-earners. ‘Private’ in this sense means exactly the Pigouian coincidence of returns to the producer and social returns. In this sense, private income of the government or privateness of public income necessarily complement private incomes of firms and households. We expand this theme in chapters 3 and 4.
The next part of the story is hard. There are two types of socialization and internalization. They concern: (a) ideas, science, invention, innovation, and technological discoveries when returns to their authors are smaller than returns to the economy, society, and humankind; and (b) confiscations and other redistributions of income and output from producers to non-producers by the government and private predators. The difference between these two types leads us to the second side of the ontological nature of income.

2. Ontologically, people produce two types of goods. Human products can be either additive or subject to redistribution (redistributable, in short). Ideas, science, inventions, innovation, and technological discoveries on the positive list and accidents, fires, and pollution on the negative list typify additive products. They can be used by non-producers without taking them from producers. Indeed, ontologically, they cannot be subtracted from producers. Additive products are non-redistributable products by nature. They add returns to non-producers and the economy at large without subtracting from producers. Thus returns on additive goods are additive themselves.

To employ a familiar metaphor, social returns on additive goods can spill over from producers to non-producers. To use another expression from the literature, social returns on additive goods can create external economies—externalities, in short. This happens when returns on additive goods spill over, primarily when returns to the producers of ideas are smaller than their social returns. Non-producers and the economy at large are not excluded. Social returns are not recovered, not appropriated by producers. This is socialization of additive goods. But some inventions can be kept as trade secrets and many technological ideas can be patented. One can also think of government salaries, grants, and prizes for scientists (direct and indirect, from tax-exempt organizations) and scholarships for students as compensation of producers of ideas. All these devices bring returns to the producers in line with social returns on additive goods. Social returns are appropriated, recovered by producers in the form of income. This is internalization of additive goods. In the heavy language of the literature, this is internalization of externalities.

Most other products are redistributable. Apart from ideas, pollution, and other additive goods, all output of goods and services is redistributable. All ordinary goods, from bread to computers and from laundry to surgery, are redistributable. Income, being returns on products and factors of production, is redistributable itself. No unit of redistributable products and no unit of income can be used by non-producers/non-earners without taking it from producers/earners. Income cannot be added to non-earners (if they don’t produce and earn more) without subtracting it from earners. Non-earners can add income,
Paradigm Lost, Paradigm Regained: Common Versus Private Income

without more production, only by subtracting from earners. This is the ontological mechanism of redistribution.

One can think of redistribution as addition by subtraction. Income can be internalized if non-producers/non-earners are excluded. Then income is not appropriated from producers/earners, not redistributed. This is the definition of private income. Otherwise income is socialized. Non-producers/non-earners are not excluded. Income is appropriated from producers/earners and redistributed to non-producers/non-earners.\(^{57}\) This is the definition of common income.

To define private and common income with an accounting precision, we can bring back Pigou’s equivalence and difference between social returns and returns to the producers. In the case of redistributable goods, this is simply the equivalence and difference between production and income.

<table>
<thead>
<tr>
<th>Private income</th>
<th>Common income</th>
</tr>
</thead>
<tbody>
<tr>
<td>Equivalence between income (returns to the producer) and production (social returns) of redistributable goods</td>
<td>Difference between income (returns to the producer) and production (social returns) of redistributable goods</td>
</tr>
</tbody>
</table>

The distinction of redistributable goods and income as their return is central. Internalization and socialization are strict accounting concepts in the sense of Pigou, but they are vacuous, indeed ambiguous in real economies without specifying externalities vs. redistribution. Internalization of externalities does not break up redistribution and does not make income private. Breakup of redistribution, internalization of income, does not internalize externalities. In some cases, such as public financing of science and education, internalization of externalities may redistribute income from producers of ordinary goods to producers of ideas. The two types of goods create two types of socialization and internalization and two separate dimensions.

Empirically, one can think of cases of common income under central planning and the modern Welfare State which internalize externalities by using patents, pollution charges, public financing of science, and public education. Conversely, historical and developing, early market economies knew few patents, no pollution charges, and little public financing of science and public education but were strong on private income. This matrix can serve as a crude approximation:

---

\(^{57}\)The ontological irony of existence is that the most productive individuals, inventors and innovators can be hit twice. First, they may not recover social returns on their products because their ideas spill over. Second, their income, which is already smaller than their social contribution, can be redistributed to less productive individuals. The only solace is posterity, like Louis Pasteur became an adjective on the milk carton.
This story is not as hard as it sounds. Plain English can handle it. Internalization of externalities means pay for spillovers, pay for production of ideas and other additive goods. Internalization of income means breakup of takeovers, breakup of subtraction and redistribution of income. To sum it up in vivid form,

< compensate producers for addition of benefits or costs to non-producers; vs.

< free producers from redistribution of income by predatory government and private predators.

These are two separate problems and two different policies. These are two dimensions apart.

The income dimension and the externalities dimension

This ontological excursion opens up not one but two new dimensions: the income dimension and the externalities dimension. Their sharp contrast can be summarized as follows:

<table>
<thead>
<tr>
<th>Internalization</th>
<th>The income dimension: Redistributable returns</th>
<th>The externalities dimension: Additive (non-redistributable) returns</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Income <em>is not appropriated from</em> producers: <strong>Private income</strong></td>
<td>Income <em>is appropriated by</em> producers</td>
</tr>
<tr>
<td>Socialization</td>
<td>Income <em>is appropriated from</em> producers: <strong>Common income</strong></td>
<td>Income <em>is not appropriated by</em> producers</td>
</tr>
</tbody>
</table>

If externalities are spillovers, redistribution is takeovers. One can also distinguish between the two socializations thus: Externalities are natural socialization, redistribution is predatory socialization, social-ISM, commonism. The concept of common income as predatory socialization measured by various extents of income redistribution is comprehensive. Income redistribution subsumes all species of predatory activities which have surfaced in the literature, such as governmental extraction, confiscations, diversion,
destructive activities, piracy, rent-seeking, and a legion of others\textsuperscript{58} and integrates them as the species of socialism. Common income is the ultimate definition of socialism. Conversely, private income defines the market economy. This creates a pure dichotomy of market vs. socialism, without mixing them with government and property.

**Exclusion in a multi-dimensional world**

Which brings us back from ontology to society. We have singled out four dimensions: the property dimension, the government dimension, the income dimension, and the externalities dimension. One uniform measurement organizes all four dimensions—the measurement of exclusion. Each dimension is uniquely defined by exclusion of different subjects from different objects.

<table>
<thead>
<tr>
<th>The infrastructure dimensions</th>
<th>The returns dimensions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Property</td>
<td>Government</td>
</tr>
<tr>
<td>Exclusion of non-owners from property (assets)</td>
<td>Exclusion of government from economic activity</td>
</tr>
<tr>
<td></td>
<td>Income</td>
</tr>
<tr>
<td></td>
<td>Exclusion of non-producers/non-earners from income of producers/earners</td>
</tr>
<tr>
<td></td>
<td>Externalties</td>
</tr>
<tr>
<td></td>
<td>Exclusion of non-producers of ideas from returns on invention and innovation</td>
</tr>
</tbody>
</table>

These are four unique, independent, separate, self-contained dimensions. Each dimension extends by the measure of exclusion.\textsuperscript{59} The more exclusion there is on each dimension, the less socialization or the less


\textsuperscript{59}Exclusion defines property rights. “Each particular citizen has a propriety to which none of his fellow-citizens hath right.” “Each subject hath an absolute dominion over the goods he is in possession of: that is to say, such a propriety as excludes not only the right of all the rest of his fellow subjects to the same goods, but also the magistrate himself.” Thomas Hobbes, *De Cive or The Citizen*, pp. 80, 134. “Every private man has an absolute propriety in his goods; such as excludes the right of the sovereign. Every man has indeed a propriety that excludes the right of every other subject.”
government. The less exclusion on each dimension, the more socialization or the more government. This creates a unified framework for the four dimensions. We presented three of these dimensions in figures 2.3 and 2.4 within this unified framework. It is also convenient to combine two pairs of dimensions, treating property and government as infrastructure, and income and externalities as the returns dimensions.\textsuperscript{60}

By the extent of exclusion, each dimension forms its own qualitative dichotomy.\textsuperscript{61}

\begin{tabular}{|c|c|c|}
  \hline
  Government dimension & Property dimension & Income dimension \\
  \hline
  Limited, non-restrictive (Economic liberty) & Private or state (Property rights) & Private (The market economy) \\
  \hline
  Big, restrictive & Common & Common (Socialism) \\
  \hline
\end{tabular}

Figures 2.3 and 2.4 illustrate the empirical variety of multi-dimensional combinations. There can be common income with highly restrictive government and state ownership (central planning in Communist countries);\textsuperscript{62} common income with limited, indeed symbiont government and private property (Enterprise Network Socialism in post-Communist Russia and similar countries); private income with national state and local government property and with a restrictive, but later more limited and fiscally small government (a new

\textsuperscript{60}To simplify presentation of the externalities dimension in the above matrix, we singled out returns on ideas. The reader can substitute other additive products and returns (e.g., exclusion of victims from accidents, fires, and pollution). In general, the caption can read: Exclusion of non-producers of additive goods from additive returns.

\textsuperscript{61}We leave the externalities dimension aside. It influences technological progress and long-term growth after the breakup of common income and expansion of private income create productive incentives in the first place, or after forced industrial development by the highly restrictive government (central planning) substitutes for lack of incentives. We return to this theme in chapter 3.

\textsuperscript{62}Gary H. Jefferson applies the notion of common property to state-owned enterprises because the government underwrites their expenses and thus redistributes their income. See Gary H. Jefferson, “China’s State Enterprises: Public Goods, Externalities, and Coase,” \textit{American Economic Review} 88, no. 2 (May 1998): 428-432. He really implies common income without using this concept. This reformulation allows us to describe central planning as a combination of state ownership of enterprises and common income, without losing either dimension of the story. Michael S. Bernstam and Alvin Rabushka move the concept of common ownership from the stock of assets, including enterprises, to the flows of income and expenses and to government, enterprise, and household budgets. See Michael S. Bernstam and Alvin Rabushka, \textit{Fixing Russia’s Banks}, pp. 13-14, 32-33.
market economy in post-Communist China); common income with private property and big, restrictive government (central planning in Nazi Germany); common income with private property and limited government (slavery in the U.S. Antebellum South); largely private income with a mix of state and private property and relatively big government (Western Europe in the decades after World War II); private income with private property and moderately limited government (the U.S.); and numerous other combinations. Every reader can entertain his own encyclopedic knowledge applying the above matrix and the frames of figures 2.3 and 2.4 to the facts of history and to the map of the world.

A multi-dimensional perspective can better account for diverse post-Communist developments and harness the experience of Western market, central plan, developing, and post-Communist economies in one unified framework. A one-dimensional dichotomy of market vs. government is unable to treat all these different cases within a single, unified framework. It fails to explain even one diverse, post-Communist experience, from the Great Contraction in Russia and similar countries to economic expansion in China and its neighbors. This chapter has introduced a multi-dimensional approach and the income dimension from private to common income. The next chapter expands their dissection. It links private and common income to production.

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63 The size of the central government in China, measured by the tax burden as a share of GDP, fell from over 30 percent in 1978 to just over 10 percent in 1995. See Alvin Rabushka, “The Great Tax Cut of China”, Wall Street Journal, August 7, 1997. Another key feature of China, which converges it with historical and contemporary archetypical market economies is federalism—the devolution of economic and other power to provincial and local governments. See Yuanzheng Cao, Yingui Qian, and Barry R. Weingast, “From Federalism, Chinese Style, to Privatization, Chinese Style,” Economics of Transition 7, no. 1 (February 1999): 103-131.

64 One can also incorporate additional important dimensions: the type of political system, governance structure (centralized or federalist), war and peace, geographic conditions, factor endowments (land, natural resources, inherited industrial structure, human capital stock), culture, ideology, household system (family type), demographic regime, and others. A model of the world will look like a polygonal space object with a taxonomy of historical and contemporary societies within it, dropping lines in their measured place on each of the dimensions. A computer program will move countries inside the space when historical information is revised or contemporary conditions change.
Chapter 3

The Omnipresence of Common Income in a Multi-Dimensional World

Post-Communist evolution in Russia, China, and other countries marked two systemic separations. China’s experience detached the market economy from limited government and private property. Russia’s experience split socialism from big, restrictive government and state ownership. Ubiquitous socialism in Russia and similar countries is run by the private enterprise network with free transactions under limited government. The new-entrant market economy in China and similar countries functions under restrictive government controls and with government ownership at the local and national level. Chapters 1 and 2 documented these developments. Chapter 2 extended them into a multi-dimensional perspective summarized in figure 2.4. This chapter follows with a multi-dimensional cross-section, accounting, measurement, and organization of economic systems.

Multi-dimensional permutation after central planning is extreme but not unique. Table 3.1 assembles a three-dimensional catalog of all major economies for the last 10,000 years and beyond by the qualitative types of income, government, and property. It classifies economies by private vs. common income (the market economy vs. socialism), by restrictive vs. non-restrictive (limited) government, and by private, cooperative, local government, and national state ownership vs. common property. Table 3.1 demonstrates that income types, government types, and property types are uncorrelated and form multiple combinations. Their heterogeneity runs through time and space. Figures 3.1 to 3.3 quantify and locate economic groups from table 3.1 on a multi-dimensional map. Table 3.1 disaggregates into the table of economic species, akin to the Periodic Table of Elements. The two-dimensional and four-dimensional versions follow this chapter. Species are economic systems that are unique, self-contained, non-overlapping, and indivisible without breakups. The table of economic species currently enumerates 110 elementary systems and is expandable.

Socialism operates through common income, the market economy though private income. To recapitulate from Chapter 2, private income and common income are ontological and accounting concepts. Private income means exclusion of non-earners from a given income. Exclusion equalizes production and remuneration of redistributable goods. These are goods that can be taken away by non-producers from producers. Ordinary output and income itself are ontologically redistributable. Income redistribution is addition of one man’ income by subtraction of another man’s income. This non-exclusion diverges remuneration from production of redistributable goods. Income redistribution from earners to non-earners is the operational process of common income.

What unfolds in this chapter is the omnipresence of common income under all extents of government restriction and all types of property. Common income transpires as an original, enduring, and predominant phenomenon of human existence. Private income phases in slowly, belatedly, and rarely. There is no amount of liberalization and property privatization that can make income not common. But the policy challenge is even bigger than that. The next chapters submit that common income suppresses production. The breakup of common income, the phase-in of private income is the missing link in understanding and making long-term economic progress.
The most elaborate analysis of the flow of funds can be found in the Flow of Funds Accounts of the United States, compiled by the Federal Reserve Board at http://www.federalreserve.gov/releases/z1/current/data.htm. Methods of accounting for specific line items can be consulted in the National Product and Income Accounts compiled by the U.S. Department of Commerce at http://www.bea.doc.gov/bea/dn/nipaweb/SelectTable.asp?Selected=N. An excellent reconstruction of the flow of funds in Russia in 1991, the last year under central planning, is in The World Bank, Russian

Section A. Charting a Multi-Dimensional World

A multi-dimensional perspective returns Russia, China, and other post-Communist economies to the map of the world. Figures 3.1 and 3.3 expand figure 2.4 to actual world economies. Russia and China fit the map together with all other major groups of economies, past and present. Russia and China add to the map which includes primordial societies, historical economies around the globe, Western market economies, Communist central planning, and contemporary developing economies. Not a single major economic cluster is missing. The multi-dimensional map is comprehensive.

In contrast, Russia and China are missing on the one-dimensional map in figure 3.2. It tries to fit empirical world economies along the linear dichotomy of market vs. government. This map defines socialism as big government and state ownership and it equates the market economy with limited government and private property. On the single dimension, the market economy can be measured only as a residual of government, after accounting for the extent of government controls in the economy. Enterprise Network Socialism in Russia with free transactions, limited government, and private property and the new-entrant market economy in China with restrictive government and marginal private property do not fit the line and fall out. They are off the one-dimensional map. Their fitting in figures 3.1 and 3.3 becomes possible due to multi-dimensional accounting. It separates common income (socialism) from restrictive government and state ownership and splits private income (the market economy) from limited government and private property.

The two-dimensional frame

The government dimension on the vertical axis in figure 3.1 makes up the longitude of the map from absent to limited to restrictive to total government. The income dimension on the horizontal axis limns the latitude of the map from the market economy to total socialism. They form the two-dimensional frame for figure 3.1 and similar subsequent figures in this book.

This two-dimensional frame covers the entire flow of economic activity which adds up to Gross Domestic Product (GDP). It is the flow of funds between a multitude of economic actors—firms or enterprises, households, and the government. They all interact in a variety of allocative markets: product markets, factor markets of labor, capital and land, and intermediary, financial markets. The flow of funds, in turn, embodies a multitude of bilateral exchange transactions and unilateral confiscations and subsidies between organizations (firms or enterprises), organizations and households, organizations and the government, and households and the government. For brevity, we can call them transactions.¹

¹The most elaborate analysis of the flow of funds can be found in the Flow of Funds Accounts of the United States, compiled by the Federal Reserve Board at http://www.federalreserve.gov/releases/z1/current/data.htm. Methods of accounting for specific line items can be consulted in the National Product and Income Accounts compiled by the U.S. Department of Commerce at http://www.bea.doc.gov/bea/dn/nipaweb/SelectTable.asp?Selected=N. An excellent reconstruction of the flow of funds in Russia in 1991, the last year under central planning, is in The World Bank, Russian
FIGURE 3.1. THE WORLD ON THE INCOME AND GOVERNMENT DIMENSIONS

PRIVATE < ————————                   INCOME                             ——————— > COMMON

Industrial central planning, forced production: USSR, China, pre-1978, Nazi Germany

Pre-industrial Europe, developing countries, and historical economies around the world

Private slavery, brigandry, piracy, and other private predation

Market economy, limited government: classical England, U.S., the Asian Tigers, Western Europe (pre-Welfare States)

Enterprise Network Socialism, symbiont government: Russia, 1990s, the CIS

Primordial caves
FIGURE 3.2. THE WORLD ON ONE DIMENSION

Market economy, limited government: classical England, U.S., the Asian Tigers, Western Europe (pre-Welfare States)

Enterprise Network Socialism, symbiont government: Russia, 1990s, the CIS

Industrial central planning, forced production: USSR, China, pre-1978, Nazi Germany

MARKET ECONOMY, LIMITED GOVERNMENT, PRIVATE PROPERTY

Pre-industrial Europe, developing countries, and historical economies around the world

SOCIALISM, BIG GOVERNMENT, STATE OWNERSHIP

Private slavery, brigandry, piracy, and other private predation

Primordial caves
In earlier economies, transactions enter the flow of non-monetary exchange of output. For uniformity, we will treat this exchange as an implicit case of the flow of funds.

The flow of funds yields direct measurements of economic systems on the government and income dimensions. These direct measurements are the rates of government restriction and income redistribution in the flow of funds.

Each transaction is controlled by the government to one or another extent of its value, from zero to 100 percent. Like in science, control means exclusion of extraneous influences. To emphasize the governmental source of economic control, we will call it government restriction or, simply, restriction. As transactions follow one another in the flow of funds, the extent of government control of each transaction in value terms represents the marginal rate of restriction. The weighted average of the marginal rates of restriction yields the rate of government restriction in the flow of funds in a given economy. This approximates the extent of restriction in GDP from zero to 100 percent on the government dimension, from absent to total government. Conversely, exclusion of government from economic activity defines economic liberty in the accounting sense in the flow of funds. The rate of exclusion of government restriction provides direct measurement of economic liberty as a share of GDP.²

In a similar vein, every bilateral transaction and every unilateral confiscation and subsidy contain one or another extent of income redistribution, from zero to 100 percent of the value of a given transaction. These are redistributive transfers from producers/earners of a given income in a given transaction to non-producers/non-earners. For brevity, producers/earners can be called makers of income in a given transaction and non-producers/non-earners can be called takers of the redistributive transfer in this transaction. They are makers and takers in each specific transaction. This is not an occupational status. The qualifier ‘redistributive’ distinguishes redistributive transfers from charities, donations to causes, transfers in the family and, most importantly, from accounting government transfers such as taxes. Accounting government transfers include taxes and subsidies. While all subsidies constitute redistributive transfers, taxes are ambivalent. Taxes may or may not be equivalent to the value of pure public services. Taxes may approximate effective user fees, making the government a public utility, and taxes may largely

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Redistributive transfers in each specific transaction between all economic actors measure exactly the difference between returns to the economy and returns to the producer or, simply, between production and remuneration (compensation). This difference applies equally on both ends of the given transaction, that is, as a subtraction of income from the maker and an addition of income to the taker. This measurement of non-equivalence between production and remuneration is specific to the income dimension. It measures takeovers as opposed to uncompensated spillovers on the externalities dimension. By definition, spillovers of ideas, invention, innovation, and other additive goods do not take income from their producers and do not give it to non-producers. There are no transactions and no transfers in spillovers. Uncompensated spillovers measure the difference between production and remuneration of additive goods outside of transactions in the flow of funds.

As transactions follow one another in the flow of funds, the share of each redistributive transfer in the value of each transaction represents the marginal rate of income redistribution. In accounting practice, exactly because of transfers, these values and rates must be imputed from the full market value of output in each transaction. The weighted average of the marginal rates of redistribution yields the rate of income redistribution in the flow of funds in a given economy. It can be simply calculated as the sum of all redistributive transfers divided by the sum of the values of all transactions. This approximates the extent of income redistribution as a share of GDP from zero to 100 percent on the income dimension, from totally private to totally common income. The rate of income redistribution in the flow of funds gives the share of common income in GDP. Conversely, the rate of exclusion of income redistribution measures the share of private income. Private income defines the market economy in the accounting sense in the flow of funds. The share of private income yields direct measurement of the market sector in GDP.

Both the government and income dimensions in figure 3.1 and subsequent figures measure non-exclusion rather than exclusion. They measure government restriction instead of economic liberty. They measure income redistribution instead of equalization of production and remuneration of ordinary output. One can readily set the government and income dimensions in reverse. They would then line up economic liberalization and progression towards the market economy. This reversal will not change the frame, the multi-dimensional cross-section, and comparative positions of economies on the map. But it may give an

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4 Approximation is due to the difference between the flow of funds and GDP in the coverage of home-produced output. Contemporary measurement of GDP in developing economies imputes the value of home-produced output and adds it to the value of marketed goods and services. Transactions include only interactive portions of home-produced output—informally exchanged, confiscated by the government or private predators, and restricted by national and local governments. By definition, transactions leave out non-interactive portions consumed within the household.
Matrix 3.1. A Multi-Dimensional Cross-Section: the Accounting Mechanisms, Exclusion, and Measurement

<table>
<thead>
<tr>
<th>Dimensions</th>
<th>The returns dimensions</th>
<th>The infrastructure dimensions</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Income</td>
<td>Externality</td>
</tr>
<tr>
<td>Accounting mechanism</td>
<td>The flow of funds</td>
<td>The flow of spillovers and compensation</td>
</tr>
<tr>
<td>Exclusion of subjects from</td>
<td>non-producers/non-earners (takers) from the income of producers/earners (makers)</td>
<td>non-producers of ideas from returns on invention</td>
</tr>
<tr>
<td>objects</td>
<td>Equalization between production and compensation</td>
<td>Control by actors over</td>
</tr>
<tr>
<td></td>
<td>in redistributable goods (ordinary output)</td>
<td>their economic actions</td>
</tr>
<tr>
<td></td>
<td>in additive goods (ideas, invention, innovation, etc.)</td>
<td>equity = assets - liabilities = retained earnings + net income</td>
</tr>
<tr>
<td>Measurement of exclusion</td>
<td>The rate of income redistribution in the flow of funds = the weighted average of marginal rates of redistribution. The share of common income in GDP</td>
<td>The rate of uncompensated spillovers</td>
</tr>
<tr>
<td></td>
<td>The rate of government restriction in the flow of funds = the weighted average of marginal rates of control of transactions</td>
<td>The level of redistribution of the net value of assets (equity) and of accrual of returns on assets</td>
</tr>
<tr>
<td>Exclusion is</td>
<td>Private income</td>
<td>Internalization of externalities</td>
</tr>
</tbody>
</table>

Notes:
1. The measurement is of non-exclusion as the share of the total. It measures the difference from complete exclusion, which means non-exclusion.
2. The weighted average of marginal rates of redistribution refers to redistributive income transfers in all bilateral transactions and unilateral subsidies and confiscations. It can be calculated as the ratio of the sum of redistributive transfers to the sum of singular, non-overlapping, self-contained bilateral transactions and unilateral subsidies and confiscations.
3. Restriction as a share of GDP = The weighted average of marginal rates of government control of transactions in the flow of funds
illusion of a predetermined course of history. That is refuted by the experience of Russia and similar post-
central plan economies and other economic failures around the world. The two-dimensional frame in figure 3.1 and thereafter is neutral. It avoids historical determinism and focuses on multi-dimensional organization of economies.

The third, property dimension and the fourth, externalities dimension complement the two-dimensional frame in figure 3.3. Matrix 3.1 summarizes multi-dimensional accounting. We will continue its exploration during and after the following empirical inventory.

Around the world at a glance

The two-dimensional layout in figure 3.1 is simple and intuitive. By an unintended visual coincidence, the private income strip with market economies lies in the proverbial West of the map. The common income area with socialist economies spreads over the Eastern expanse of the map. In the accounting sense, private income is always present as the residual of income redistribution. In this spirit, private income can characterize the empirical continuum with the minimal range of income redistribution, from zero to less than 20 percent of GDP. This range would set apart predominantly private income economies with more than 80 percent of GDP excluded from redistribution. It seems to correspond empirically to the critical mass which creates a functioning market economy. The rest are predominantly common income economies.

Private income economies with limited government occupy the south-western corner of the map. These are market economies of classical England, the U.S., Western Europe before the Welfare States, and the Asian Tigers—Japan, Taiwan, South Korea, Hong Kong, and Singapore. Primordial societies with near-total common output and absent or common governance are depicted as primordial caves in the south-eastern corner. Private slavery, brigandry, piracy, and other species of private predation with partial common income and low government restriction lie in the south central segment of the map. Pre-industrial Europe, developing economies, and historical economies around the world are clustered in the area of partial common income and restrictive government in the central section. Industrial central plan economies with forced production in the USSR, Communist China, and Nazi Germany take up the north-eastern corner of near-total common income and near-total government. To make the map readable and not overcrowded, we omit their systemic neighbors and predecessors. These are agricultural central plan economies with state-run irrigation and forced delivery of output to the state wholesale monopsony and monopoly in ancient Egypt, Mesopotamia, China, Japan, India, the Great Zimbabwe, the Maya, Aztec, and Inca Empires.

The two-dimensional map in figure 3.1 readily incorporates post-Communist Russia and China among other world economies. Russia and China settle near opposite corners of the map. Enterprise Network Socialism in Russia finds its place in the south-eastern intersection of near-total common income and non-restrictive government. It is to the north of primordial common output with common governance (pictured as primordial caves on the map). As we documented in Chapters 1 and 2, Russia redistributes
around 80 percent of GDP through the private enterprise network under limited, indeed symbiotic government and largely private property. China is located in the north-western intersection of private income and restrictive government, north of Japan and Northern Europe. As we discussed earlier, China runs a two-track economy. It separates the preexisting state enterprise sector and the new-entrant market sector. The latter consists largely of township and village enterprises (TVEs), family farms on state-owned land, and a small segment of private firms, including foreign. The two-track structure needs restrictive government controls. The government must restrict the residual network of state enterprises from redistributing income of the new-entrant market firms and vice versa. This restriction of income redistribution gives rise to a new market economy. As we calculated in Chapter 2, this market sector produces nearly 80 percent of GDP. The rest is redistributed by the old state sector.

Can the world fit on one dimension?

Non-governmental socialism in Russia and a predominant market economy with restrictive government in China are the hallmarks of post-Communist experience. They do not exist on the one-dimensional perspective where restrictive government and state ownership define socialism and the market economy equates with limited government and private property.

<table>
<thead>
<tr>
<th>Market economy, limited government, private property</th>
<th>Socialism, restrictive government, state ownership</th>
</tr>
</thead>
</table>

In a mental experiment, figure 3.2 maps this perspective. It shows that the unidimensional map in figure 3.2 merely flattens and linearizes the two-dimensional map of figure 3.1. Many economies fit the map in figure 3.2, but far from all. Post-Communist Russia and China do not fit. If the market economy matches only with limited government and private property and if socialism matches only with restrictive government and state ownership, and vice versa, Russia and China are rejected. It is easy to refute this statement: one has to find some place, any place, for Russia and China on the map in figure 3.2.

Ditto for private slavery, brigandry, piracy, and other species of private predation, widespread in many countries during long periods. Ditto for primordial common output with absent or common governance which constituted the bulk of human history. They all cannot fit the one-dimensional map in figure 3.2. Too much socialism or too little government.

A two-dimensional expansion

Figure 3.3 and a comparison of the two matrices below render another mental exercise. It submits that the one-dimensional perspective of market vs. government is a selection of special empirical cases. Figure 3.3 copies the two-dimensional map from figure 3.1 and superimposes the diagonal from the north-eastern to the south-western corner. It runs from central plan economies with near-total common income and near-total government, through partial common income with restrictive governments in historical and developing economies, to Western market economies with private income and limited government.
FIGURE 3.3. THE WORLD ON ONE, TWO, THREE, AND FOUR DIMENSIONS

PRIVATE   <———————                                 INCOME                             ——————— > COMMON

Industrial central planning, forced production: USSR, China, pre-1978

Market economy, restrictive government: China, post-1978

Pre-industrial Europe, developing countries, and historical economies around the world

Private slavery, brigandry, piracy, and other private predation

Enterprise Network Socialism, symbiont government: Russia, 1990s, the CIS

Primordial caves

Market economy, limited government: classical England, U.S., the Asian Tigers, Western Europe (pre-Welfare States)

Property rights (Ownership)

Non-restrictive <

Government

> Restrictive

Private Cooperative Local State Common
misses the rest of the world. This diagonal is the one-dimensional perspective per se. It lines up all empirical cases that fit the one-dimensional map in figure 3.2. A unidimensional table takes their inventory:

<table>
<thead>
<tr>
<th>Market economy and non-restrictive government</th>
<th>Socialism and restrictive government</th>
</tr>
</thead>
<tbody>
<tr>
<td>U.S., classical England, the Asian Tigers, and Western Europe (pre-Welfare States)</td>
<td>Central planning (the USSR, China pre-1978, other Communist countries, and Nazi Germany); ancient slavery, feudalism, and mercantilism in pre-industrial Europe; and statist pre-colonial and developing non-Western economies</td>
</tr>
</tbody>
</table>

This table accommodates only special cases where the market economy coincides with non-restrictive government, and socialism with restrictive government. This is a large selection. Empirically, it covers much of human experience as one can observe in figure 3.2, but it is far from universal. In contrast, the two-dimensional matrix below includes all economies from figure 3.1.

<table>
<thead>
<tr>
<th></th>
<th>Private income (market economy)</th>
<th>Common income (socialism)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Restrictive government</td>
<td>China, post-1978</td>
<td>Central planning (the USSR, China pre-1978, other Communist countries, and Nazi Germany); ancient slavery, feudalism and mercantilism in pre-industrial Europe; and statist pre-colonial and developing non-Western economies</td>
</tr>
<tr>
<td>Non-restrictive government</td>
<td>U.S., classical England, the Asian Tigers, and Western Europe (pre-Welfare States)</td>
<td>Enterprise Network Socialism in Russia and similar countries; private slavery in the Antebellum South; brigandry, piracy, conquest; primordial common output</td>
</tr>
</tbody>
</table>

This two-dimensional matrix subsumes the unidimensional table. The market economy with non-restrictive government—the left-hand cell of the unidimensional frame—becomes the bottom-left cell of the two-dimensional matrix. Socialism with restrictive government—the right-hand cell of the unidimensional frame—forms the top-right cell of the two-dimensional matrix. These are two cells of the total four. This makes the entire one-dimensional table a partial and special case.

It is this particular experience that is generalized in the one-dimensional paradigm which identifies the market economy as limited government and unifies socialism with big Government. This is a typical fallacy of generalization of the particular. This generalization creates the unidimensional paradigm of market vs. government which we discussed in the previous chapter. It reduces the world to one dimension which cannot hold all economies. It assumes equiproportionality or a strong positive correlation between income
redistribution and government restriction in all special cases it covers, in order to collapse the world into
the one-dimensional line. Visually, this amounts to compressing all economies onto the diagonal in figure
3.3.

This diagonal may hold equiproportional shares of income redistribution and government restriction,
downward from one hundred percent to zero. The diagonal can be drawn also as a regression line with
a different positive slope. It will not be equiproportional and would simply express a positive bivariate
correlation between the extent of income redistribution and government restriction. The trade-off between
market and government in the one-dimensional paradigm does not specify whether it is a one-for-one or
some other proportion. We leave the diagonal in figure 3.3 quantitatively loose within the two-dimensional
frame with the scales of unequal length.

The brown color on the diagonal line stands for state ownership, the blue color for private property.
This corresponds to the one-dimensional perspective of socialism, restrictive government, and state
ownership vs. the market economy, limited government, and private property. However, even the
empirical cases which the diagonal fits deviate from this assertion about property types. To mention the
most salient examples, Nazi Germany had predominantly private property while Singapore, Taiwan, and,
to a lesser extent, Japan have a substantial share of state ownership.

In the two other cells of the two-dimensional matrix, private income (the market economy) coexists
with restrictive government and common income (socialism) combines with non-restrictive government.
They encompass post-Communist experience in China and Russia, as well as private slavery, brigandry,
piracy, other species of private predation, and primordial societies. The two-dimensional matrix is a
qualitative summary which assumes no equiproportionality or positive correlation in the extent of income
redistribution and government restriction. Accordingly, there is no trade-off between market and
government.

The two-dimensional expansion accommodates empirical cases with all possible quantitative
combinations between the rates of income redistribution and government restriction, uncorrelated and
scattered all over the map. Visually, the two-dimensional perspective expands the world beyond the
diagonal in figure 3.3 in all directions throughout the map.

A three-dimensional expansion

There is a simple empirical proof that the one-dimensional view of the world, the dichotomy of
market vs. government, cannot stand even as a first approximation. Table 3.1 further expands the two-
dimensional matrix into three dimensions by adding property types. It takes an empirical inventory of
economies mapped in figure 3.1 and organizes them by qualitative types of income, government, and
property. The trilateral cross-section includes private vs. common income, restrictive vs. non-restrictive
government, and a sequence of private, cooperative, local government, national state, and common
property.
<table>
<thead>
<tr>
<th>Dimensions</th>
<th>Income</th>
<th>Government</th>
<th>Property</th>
</tr>
</thead>
<tbody>
<tr>
<td>U.S., classical England, Japan</td>
<td>Private (market)</td>
<td>Non-restrictive</td>
<td>Private</td>
</tr>
<tr>
<td>USSR, China pre-1978</td>
<td>Common (socialism)</td>
<td>Restrictive</td>
<td>State</td>
</tr>
<tr>
<td>Nazi Germany</td>
<td>Common (socialism)</td>
<td>Restrictive</td>
<td>Private</td>
</tr>
<tr>
<td>Private slavery, Antebellum South</td>
<td>Common (socialism)</td>
<td>Non-restrictive</td>
<td>Private</td>
</tr>
<tr>
<td>Russia, post-1992</td>
<td>Common (socialism)</td>
<td>Non-restrictive</td>
<td>Private</td>
</tr>
<tr>
<td>China, post-1978</td>
<td>Private (market)</td>
<td>Restrictive</td>
<td>Local and state</td>
</tr>
<tr>
<td>Primordial societies</td>
<td>Common (socialism)</td>
<td>Non-restrictive</td>
<td>Common</td>
</tr>
<tr>
<td>Brigandry, piracy</td>
<td>Common (socialism)</td>
<td>Non-restrictive</td>
<td>Private</td>
</tr>
<tr>
<td>Pre-industrial Europe</td>
<td>Common (socialism)</td>
<td>Restrictive</td>
<td>Private</td>
</tr>
<tr>
<td>Pre-colonial and developing non-Western economies</td>
<td>Common (socialism)</td>
<td>Restrictive</td>
<td>Private, state, and common</td>
</tr>
<tr>
<td>Singapore, Hong Kong, Taiwan, South Korea</td>
<td>Private (market)</td>
<td>Non-restrictive</td>
<td>Private and state</td>
</tr>
</tbody>
</table>

Note:
The terms private income and common income approximate the ranges of income redistribution in the market and socialist economies, respectively. Private income classifies economies with the range of income redistribution of less than 20 percent of GDP. Common income classifies economies with income redistribution of more than 20 percent of GDP.

Sources:
Figures 3.3, 3.4, and 3.5 and the literature in footnotes 36 and 51 in Chapter 2 and in annex 3.4 to this chapter.
Table 3.1 assembles eleven self-contained, non-overlapping groups of historical and contemporary, national and supra-national economies. These are more or less arbitrary clusters of different sizes which merely copy the selection in figure 3.1. One can make up different clusters and more clusters and thus rerun the test. Actually, it would be useful to do for verifying and falsifying our findings.

Table 3.1 demonstrates why the one-dimensional diagonal in figure 3.3 is a bunch of special cases. These are the cases which can be reduced to two trilateral combinations: (1) the market economy, limited government, and private property and (2) socialism, restrictive government, and state ownership. Together, these two combinations make up the one-dimensional perspective of market vs. government. They occupy the first and the second rows in the inventory in table 3.1. Table 3.1 submits that these are just two of at least eight empirical combinations of income types, government types, and property types observed through history and around the world. They made up two cells out of four in the two-dimensional matrix. They make up two trilateral combinations out of eight in the three-dimensional table.

The qualitative types in table 3.1 are not subject to refined quantitative measurement. They disregard specific locations of economies on the map in figure 3.1. The breakdown by qualitative types is simplistic but, in return, it escapes measurement errors. It takes a mere qualitative judgment based on general knowledge about empirical cases by asking basic questions about income types (private or common?), government types (restrictive or non-restrictive?), and property types (private, cooperative, local, state, or common?). Errors of judgment are easily detectable in each empirical case. If errors of judgment are random, corrections will change the three-dimensional conjunctions of specific cases but will not curtail the multiplicity of trilateral combinations and will not erase the overall three-dimensional heterogeneity. If errors of judgement are not random but all err uniformly, away from the one-dimensional perspective, corrections will annul multiple trilateral combinations and render the three-dimensional heterogeneity null and void. This result will converge empirical cases to the unidimensional dichotomy and repudiate the multi-dimensional approach. In any event, the test gives a definite answer to the question on whether one dimension is sufficient or more dimensions are necessary.

The one-dimensional perspective like the diagonal in figure 3.3 accommodates only positive correlations between income redistribution, government restriction, and property types from private to state. Qualitatively, it asserts homogeneity of the market economy, limited government, and private property and between socialism, restrictive government, and state ownership. Table 3.1 records heterogeneous relationships between types of income, government, and property in multiple combinations. There is no correlation and no uniform trilateral pattern in this empirical table, which covers all major economies around the world and throughout history. One dimension covers a large selection of economies. A multi-dimensional framework covers all economies.

**A four-dimensional expansion**

In this vein, figure 3.3 expands the map to four dimensions. It takes the basic two-dimensional frame of income and government and adds proxy layers of the property dimension and the externalities
dimension. These layers incorporate property types and compensation of spillovers (internalization of externalities). They increase multiplicity of combinations and add to empirical and analytical heterogeneity on the map of the world.

Empirically, the externalities dimension distinguishes specific historical and modern industrial economies by the extent of internalization of returns on production of ideas and other spillovers. To approximate their measure, the size of the gears symbolizes remuneration for technological development. It stands for various, crudely estimated rates of internalization of returns on ideas, invention, and innovation. The depiction notes the early, if modest, patronage of scientific discoveries in medieval Islamic states and pre-industrial Europe; promotion of science, invention, and innovation in industrial central plan economies; and a vast system of appropriation of returns on invention through market institutions, government institutions (e.g., patents), and subsidies in Western market economies, especially in the U.S.\footnote{Patents evolved from monopoly rights on ordinary services, such as the weighing of hay and straw in the city of London (a renowned poet Aemilia Lanyer held this grant in the early 17th century), to inventions and technologies.} It also reflects the shrinkage of this sphere in post-Communist Russia and similar countries, in contrast with post-Communist China with its emphasis on technological advancement. We leave the externalities dimension aside for the time being.

Addition of the property dimension in figure 3.3 visualizes empirical heterogeneity cataloged in table 3.1. It distinguishes Communist central planning with state ownership in the USSR and China from that with private property in Nazi Germany. It distinguishes primordial common output with common property from Enterprise Network Socialism with its predominantly private property. It distinguishes private slavery in the Antebellum South, with its private property rights firmly settled, from brigandry, piracy, and other private predation, which confiscate private and other property and make property common until ownership settles. All other property combinations in major historical and contemporary clusters of economies are also sketched on the map in figure 3.3.

Alas, operationalization of the property and externalities dimensions presents conceptual and technical difficulties. Compensation of spillovers is conceptually simple but technically difficult, if not insurmountable, because of the very long-run effect of ideas. Can one relate Louis Pasteur’s remuneration to the billions of lives and tens of trillions of dollars his discovery has saved? The denominator grows exponentially, the numerator is fixed. Inventors of nuclear fission, genetically modified plants, vaccines that stopped major epidemic diseases, and information technologies that boosted secular productivity, appropriated a small and incalculable fraction of their contribution to human progress. Incalculable is the operative word, especially in view of future spillovers.

Measurement of property types is technically simple but conceptually difficult, if not insurmountable, because of the multiplicity of property types and the inherent paradox of property rights. The difficulty stems from the hierarchical structure of property types. All observable property types subordinate to the
principal dichotomy of human relations to property: property rights (ownership) vs. common property.\footnote{Thomas Hobbes cast in stone the dichotomy of common property and property rights (ownership): “Where all things are common, there can be nothing proper to any man (…) nor is there that thing which any man can so call his, as any other may not, by the same right, claim as his own.” Thomas Hobbes, \textit{De Cive or The Citizen} (New York: Appleton, Century, Crofts, 1949), p. 80.}

<table>
<thead>
<tr>
<th>Property rights (ownership)</th>
<th>Common property</th>
</tr>
</thead>
<tbody>
<tr>
<td>Private</td>
<td>State</td>
</tr>
<tr>
<td>Cooperative</td>
<td>Common</td>
</tr>
<tr>
<td>Local</td>
<td></td>
</tr>
</tbody>
</table>

Any type of ownership can exist only if ownership as such exists, and if it does not, property is common. This truism generates the above hierarchy. One can single out at least five major, unique, self-contained, and non-overlapping property types. These are private property, cooperative ownership, local government ownership (for brevity, we call it local), national state ownership (in short, state), and common property.\footnote{The taxonomy of property types can readily expand, add other property types, and subdivide the major five. It can incorporate sub-national states, non-profit organizations, and quasi-property rights of non-owners, such as usufruct, fees, concessions, land tenure or occupancy rights, and trusts. Further refinement can distinguish sub-types of private property, for instance, private ownership of publicly traded shareholder corporations, holding companies, partnerships, and private family companies. State ownership can be subdivided into direct property of government agencies (e.g., U.S. Postal Service and Russian Ministry of Atomic Energy which runs nuclear power plants), state holding companies (e.g., Temasek, which holds controlling stakes in Singapore’s twenty largest companies), and government-owned separate firms such as Japan’s National Oil Corporation and 77other state corporations, Italian railroads, French automotive plants, and Amtrak in the U.S. Cooperative ownership can be broken down into workers’ cooperatives, consumer cooperatives, and church-owned enterprises (e.g., the Trappist Abbey of Chimay in Belgium). Common property can be sub-classified into common access to no man’s land, common access of the community as a whole, and confiscated property before settlement, which, in turn, breaks down into government confiscations, conquests, and private plunder or piracy. On top of all these refinements, one can make an additional cross-section which distinguishes de jure and de facto property. One is legal, the other is control (exclusive rights) over equity and over accrual of returns on assets. Collective farms and rural communes in central plan economies can be de jure cooperative and de facto state-owned. Enterprises in Russia and similar countries under Enterprise Network Socialism can be de jure fully or partially state-owned and de facto partly private and partly common. They do not remit profits or dividends to the government, which would make them usufruct. The government has forfeited control over equity so that managers strip assets. The disposable value of equity reverts to the government only when it sells the enterprise. Until then, the government has no exclusive rights to equity (net assets) and distribution of earnings, which makes property partly private and partly common.} The first four are types of property rights (ownership). The common status of property derives from process and incidence. Commonness as process reflects collective access to assets which rules out their exclusive control. The incidence of common property includes confiscations and other redistribution of assets by the government or private predators, until property rights are settled and the new owners installed. For consistency and visual recognition, we assign permanent colors to each property type in figure 3.3 and thereafter. Private is blue, cooperative is yellow, local government is green, state is brown, and common is red.
Accounting makes it possible to work out a simple, unambiguous, and comprehensive definition of property rights (ownership). It derives property rights from the balance sheet and the profit and loss statement. Ownership signifies exclusive control over equity (assets less liabilities, or net assets) and over accrual of net disposable returns on assets (profits, distributed earnings or dividends, interest, other returns on financial assets, and rent). Control constitutes exclusion of non-owners from the disposable value of net assets and from accrual of net disposable returns on assets. We submit that this accounting definition is more rigorous than the existing legal and economic definitions. It is fully and equally applicable to every possible type of property rights and it clearly and unambiguously identifies the type of ownership in each specific case. One can run a simple test. In any empirical case, the disposable value of equity and returns on assets accrue to one or another owner. One can take any empirical case and determine the type of ownership and the identity of owner by this yardstick. If a case emerges wherein this test fails to perform,

8 Thomas Hobbes laid down the definition of property rights as exclusion of non-owners, both private actors and the government. “Each particular citizen has a propriety to which none of his fellow-citizens hath right.” “Each subject hath an absolute dominion over the goods he is in possession of: that is to say, such a propriety as excludes not only the right of all the rest of his fellow subjects to the same goods, but also the magistrate himself.” Thomas Hobbes, De Cive or The Citizen, pp. 80, 134. “Every private man has an absolute propriety in his goods; such as excludes the right of the sovereign. Every man has indeed a propriety that excludes the right of every other subject.” Thomas Hobbes, Leviathan (Cambridge: Cambridge University Press, 1996), pp. 224-225. “Whatever right any man requireth to retain, he allow every other man to retain the same (...) The breach of this law is that which the Greeks call A8, ©, 4", which is commonly rendered covetousness, but seemeth to be more precisely expressed by the word encroaching.” Thomas Hobbes, The Elements of Law Natural and Politic (Oxford: Oxford University Press, 1994), p. 94.

9 Modern literature rediscovered Thomas Hobbes’ idea of exclusion as the existential difference of humans. Property rights (ownership) are the most tangible manifestation of exclusion. Modern literature defines it as residual control of owners over assets. Control is residual after allowing for the exercise of control by the government, creditors, the community, and the customary authority. See Sanford J. Grossman and Oliver D. Hart, “The Costs and Benefits of Ownership: A Theory of Vertical and Lateral Integration,” Journal of Political Economy 94, no. 4 (August 1986): 691-719, and Oliver D. Hart and John Moore, “Property Rights and the Nature of the Firm,” Journal of Political Economy 98, no. 6 (December 1990): 1119-1158. The accounting definition supercedes this formulation. The balance sheet automatically includes and separates control by creditors because equity subtracts liabilities from assets and limits exclusive control of owners to assets net of liabilities. The balance sheet and the profit and loss statement incorporate control by the government in both fiscal and regulatory capacity because tax liabilities are subtracted from assets as part of overall liabilities, and because equity and returns on assets accrue after any impact of regulation on the income from a given property. The latter allowance also applies to control by the community and the customary authority. The advantage of thinking in terms of exclusive control over equity and returns on assets rather than residual control of owners over assets is twofold. First, it is unambiguously identifiable and quantifiable. Second, it is a universal definition. It accommodates ownership of the modern corporation. The characteristic of the modern corporation is separation between ownership by shareholders and control by managers. Residual control over assets can be exercised by managers, not shareholders. Defining ownership as residual control over assets does not answer who owns the modern corporation—shareholders, managers, or both. Residual control and other non-accounting treatments of property rights leave the modern corporation in analytical limbo. Exclusive control over the value of equity and distributed earnings (dividends) identifies the modern corporation as the private property of shareholders.

10 The above example of the modern corporation is just such a test. Another, more complex test concerns de jure state ownership of Russian enterprises under Enterprise Network Socialism and their de facto combination of private
the definition of property rights proposed here is not sufficient and may not be necessary.


The technical part of measuring property types is simple. Consumer assets and most financial assets by the nature of savings are in private hands. They can be set aside. This leaves non-financial producer assets which consist of production factors—capital stock and land—and inventories. The share of producer assets by each property type in total assets gives a distribution of property types in the economy. Valuation of producer assets is based on their returns. It is sufficient to estimate the share of GDP produced by capital stock and land of each property type as a first approximation. One barrel of oil or one pound of butter add the same value to GDP regardless of who owns assets. Distribution of production by property types can approximate the distribution of assets by property types in every and all economies.

The conceptual difficulty begins to arise from the multiplicity of property types. If there were only two types, most conveniently, private and state ownership, the shares of their output in GDP would give a comparative property measurement across all economies. Alas, there are at least five disparate property types: private, cooperative, local, state, and common. Several historical and contemporary economies exhibit only one or two types, for example, common property in primordial societies and predominantly state ownership in industrial central plan economies (except Nazi Germany and Communist Yugoslavia) with the subordinate cooperative sector. But the rest of the world, past and present, extends to more than two property types. A comprehensive cross-national comparison over time requires a uniform standard which can measure all known property types on one scale.

The paradox of property rights, which we approach now, renders a unique standard for the scale ownership by managers and common property between managers and the government. It was also discussed above.
on the property dimension impossible. The standard is inherent in the principal dichotomy of property rights vs. common property and in the accounting definition of property rights. It is the level of exclusion of non-owners from the value of equity and from accrual of returns to owners. It ranges from 100 percent exclusion, which is total property rights, to 100 percent non-exclusion, which is totally socialized property, namely common property.

<table>
<thead>
<tr>
<th>Property rights</th>
<th>Common</th>
</tr>
</thead>
<tbody>
<tr>
<td>Private, Cooperative, Local, State, in one or another order</td>
<td>Common</td>
</tr>
</tbody>
</table>

<—— Exclusion ———— Non-exclusion ————>

Common property is ultimate non-exclusion. But which ownership type makes ultimate exclusion? How the four types of property rights (ownership) can be measured by the level of exclusion? How to determine the order in which each subsequent type has more property rights than the other or is more socialized than the other? Enter the paradox of property rights. Assets (and hence equity and accrual of returns) that are more private and less statist, and thus less socialized by status, are also more liable to confiscation by the government or private predators, and are thus less proprietary and more socialized in practice.

Property types by status:

<table>
<thead>
<tr>
<th>Property rights</th>
<th>Common</th>
</tr>
</thead>
<tbody>
<tr>
<td>Private</td>
<td>Cooperative</td>
</tr>
</tbody>
</table>

<—— Privatized ———— Socialized ————>

Property types in practice:

<table>
<thead>
<tr>
<th>Property rights</th>
<th>Common</th>
</tr>
</thead>
<tbody>
<tr>
<td>State</td>
<td>Local</td>
</tr>
</tbody>
</table>

<—— Proprietary ———— Socialized ————>

The order of socialization of property by types of ownership runs in opposite directions in status vs. practice. The more ownership is atomized (de-socialized) the easier it can be and has been socialized. This is the inherent paradox of property rights. It rules out the possibility of a unique standard for measuring property types on a uniform scale on the property dimension.
What is left possible? One can try four alternative imperfect strategies.

1. Simply measure the level of redistribution of property. Estimate the share of GDP produced by assets which are either in common property from the start or confiscated by the government and private predators during a given period. It can approximate the level of redistribution of the net value of assets (equity). This is the best measure of security and enforcement of property rights, with the opposite sign. It captures one of the key influences on economic performance across economies. This is an advantage of this strategy. The downside is that it skips specific types of property rights (ownership). One cannot use it to study empirical heterogeneity of income, government, and property types on a multi-dimensional map of the world.

2. Reduce five property types to a dichotomous binary. The simplest method is to select one type of importance and lump together the rest in the opposite group. The obvious groupings are a) private vs. non-private property; and b) state vs. non-state property. Use the GDP share of the primary type or group as a measure. The advantage of this strategy is sharp contrasts between comparable economies within specific samples, e.g., post-Communist economies or Western market economies vs. Communist and developing economies. The disadvantages are serious. First, it does not incorporate security and enforcement of property rights. This minimizes its usefulness for historical and developing economies. Second, it misses key distinctions such as common property, which prevailed over long periods of history, and ownership by local governments in post-Communist China. One cannot use this strategy to study empirical multi-dimensional heterogeneity.

3. Use the entire distribution of GDP by five property types in lieu of the property dimension. Each economy has its own distribution. All economies make up a tabular assembly with five typological columns. In a diagrammatic form, a color distribution can be inserted in lieu of the third dimension inside the two-dimensional frame. Figures 3.3 and 3.4 apply this strategy. Figure 3.3 attaches an estimated distribution of property types to major historical and contemporary economies on the map. Figure 3.4 disaggregates the map into 33 empirical property episodes in specific economies. As before, the size of the gears indicates the extent of compensation of spillovers. The upshot of this strategy is that it incorporates all property types into a multi-dimensional map and captures its empirical heterogeneity. The downside is that it loses a uniform measurement of property types on a continuous scale.

4. Apply separately each of the two alternative standards for the continuous scale of five property types. The two small color tables above line up these standards. One standard is the extent of socialization vs. privatization, from private to cooperative to local to state to common property. The second standard is the extent of socialization vs. proprietary ownership, from state to local to cooperative to private to common property. With any standard, one can treat each property type as a discrete value on the scale from 1 to 5 or a range on the scale from zero to 100 percent. Then the share of GDP by each property type in a given economy serves as a weight. The distribution
FIGURE 3.4. PROPERTY TYPES ON THE INCOME AND GOVERNMENT DIMENSIONS

PRIVATE   <———                                     INCOME                            >   COMMON

- **PRIVATE**
  - Privately-owned firms with newly-made productive assets and private income: U.S., industrial Europe, Japan
  - State-owned enterprises, forced delivery and irrigation: ancient Egypt, Mesopotamia, China, pre-1978
  - Franchised serfdom: Russia, 1497-1861
  - Privately-owned feudal manors with servitudes and fees: Europe, 700-1400
  -资产 with open access to private predation: Communal land, monasteries, conquests, brigandry, piracy, financial looting

- **INCOME**
  - Subsidized communal agribusinesses (Kibbutzim): Israel
  - Neolithic storages of output surpluses and private land occupancy, private debt slavery, post-8000 B.C.
  - State-owned firms with private income ("cash limits"): England, 1930s-1970s, France, Singapore, Taiwan
  - State-owned firms with incomes common with the government: Western European Welfare States

- **GOVERNMENT**
  - State-owned enterprises under central planning (the nation-enterprise): USSR, China, pre-1978
  - Privately-owned corporate industries under government planning: Germany, 1933-45
  - Labor-owned and managed enterprises with central plan: Yugoslavia, 1950s-1980s
  - Centralized privately-run colonies: Java, 1700s
  - Enslavement: pre-colonial Africa and world-wide episodes

- **COMMON**
  - Voluntary plantation communes: Plymouth colony, 1620s, Russia, 1918-20
  - Private firms and banks nationalized in the Welfare States: Western Europe, 1930s-1980s
  - The redistributive network of privatized and state enterprises: Russia, 1990s

- **PROPERTY RIGHTS**
  - Private
  - Cooperative
  - Local
  - State
  - Common
  - **PROPERTY RIGHTS (Ownership)**
Figure 3.5: Property Types, Income Types, and Government Restriction: 33 Empirical Episodes

(Common property is in red. The crowd symbolizes common income; double crowd near-total common income)

1. Private ownership
2. Cooperative
3. Local
4. State ownership
5. Common property

Privatized < ———— Property Types ———— > Socialized

- Privately-owned corporate industries under government planning: Germany, 1933-45
- Private land and trade under franchised state socialism: medieval Arab states, India
- Privately-owned, state-supplied slavery, state land, mines: ancient Greece, Rome
- Centralized privately-run colonies: Java, 1700s
- Private plantations, peonage: Latin America
- Privately-owned corporations with government-directed investment: Japan, 1950s-70s
- Privately-owned feudal manors with servitudes and fees: Europe, 700-1400
- Privately-owned pre-industrial firms, guilds, and estates with privileges: Europe, 1400-1700
- Peasant homesteads on long-term leases of land: Europe, 1400-1800
- Private slavery in market and state-socialist economies: U.S., Cuba, Brazil, 1600-1860
- The redistributive network of privatized and state enterprises: Russia, 1990s
- Private family farms: U.S., Western Europe
- Privately-owned firms with newly-made productive assets and private income: U.S., industrial Europe, Japan

- Private plots on collective or state land, USSR
- Communal land as a fiscal device: Imperial Russia
- Local government-owned firms (TVEs) with private incomes: China, post-1978
- Labor-owned and managed enterprises with central plan: Yugoslavia, 1950-80s
- Subsidized communal agribusinesses (Kibbutzim): Israel
- Neolithic storages of output surpluses and private occupancy of land, private debt slavery, post-8000 B.C.
- Local turnpike trusts, city corporations, private canals: England, since 1630
- Assets with open access to private predation: Communal land, monasteries, conquests, brigandry, piracy, financial looting

- State-owned enterprises under central planning (the nation-enterprise): USSR, China, pre-1978
- State, temple, communal, and private land, forced delivery and irrigation: ancient Egypt, Mesopotamia, China, Inca
- Franchised serfdom: Russia, 1497-1861
- Family farms on leased, state-owned land: China, post-1978
- Private and state-owned firms and farms with incomes common with the government: Latin America, India, Africa
- State-owned firms with incomes common with the government: Western European Welfare States
- State-owned enterprises under central planning (the nation-enterprise): USSR, China, pre-1978
- Private firms and banks nationalized in the Welfare States: Western Europe, 1930s-1980s
- Voluntary plantation communes: Plymouth colony, 1620s, Russia, 1918-20
- Common property resources: primordial societies

In the diagram, the arrows indicate the degree of government restriction, with privatized at the non-restrictive end and socialized at the restrictive end.
FIGURE 3.6
A THREE-DIMENSIONAL VIEW OF INCOME REDISTRIBUTION, GOVERNMENT RESTRICTION, AND PROPERTY TYPES: 33 PROPERTY EPISODES

Sources: Figures 3.4 and 3.5, Annexes 3.1 and 3.2, and the literature in footnote 51 in Chapter 2
of GDP by property type yields the weighted average of property types in each economy. Figures 3.5 and 3.6 chose as the standard the extent of socialization vs. privatization. Figure 3.5 arranges 33 empirical property episodes by their dominant property type as an index from 1 to 5. To account for the additional extent of socialization due to confiscation of assets, figure 3.5 adds red color for the share of common property in each relevant episode. Figure 3.6 applies directly the weighted average of socialization by property types (weighted by their share in production of GDP) estimated for the same 33 property episodes. One can choose an alternative standard of the extent of socialization vs. proprietary ownership. It will take a simple rearrangement of columns in figure 3.5 (4 becomes 1, 3 becomes 2, 2 becomes 3, and 1 becomes 4) and a corresponding recalculation of weighted averages in figure 3.6. The format of both figures will remain the same. The downside is that neither standard is definitive.

Figures 3.3 and 3.4 and figures 3.5 and 3.6 form two alternative pairs of the four-dimensional expansion. Figure 3.3 attaches crudely estimated distributions of property types (measured as shares of GDP produced by given property types) to the countries and supra-national regions located on the two-dimensional map. By analogy with geographical maps, one can think of the property dimension as the altitude while the income dimension serves as a latitude and the government dimension is the longitude. Unlike the altitude in geographical maps, we do not spread colors over territories because each specific distribution of property types is scattered throughout a given economy. A geographical distribution of property types in each economy is interesting in itself but does not necessarily correspond to the distribution of property types as shares in production of GDP. This is why we merely attach the distribution of property types to each country or region.

Figure 3.4 disaggregates the map to 33 empirical property episodes. They are dispersed inside the two-dimensional frame according to their extent of income redistribution and government restriction. Instead of national and supra-national economies, this map organizes the world by property types. Some property episodes represent historical or contemporary economies as a whole or almost as a whole, for example, central planning economies with state ownership in the USSR and Communist China, with cooperative ownership in Communist Yugoslavia, and with private ownership in Nazi Germany or privatized and nominally state-owned enterprises under Enterprise Network Socialism in post-Communist Russia. Other property episodes exhibit only segments of complex economies in which multiple property types are prominent. In this case, the same economy appears at least twice on the same map. For example, private plots on collective and state land, which accompany cooperative ownership in Communist countries, coexist with state-owned enterprises. The two-track economy in post-Communist China combines separate property episodes of the inherited state-owned enterprises, private family farms on state-owned land, and local government-owned firms with private income, Township and Village Enterprises (TVEs). Although the property dimension is inserted inside the two-dimensional frame of income and government, the distinguishing variable in figure 3.4 is property types.

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12 We use the 33 empirical property episodes from figure 2.3 for reference. Their documenting literature is listed in footnotes 36 and 51 in Chapter 2. Figures 3.4 through 3.6 reapply these 33 empirical property episodes directly.
Figure 3.5 makes the property dimension the primary dimension and property types the organizing variable on the scale of privatization vs. socialization. The 33 property episodes line up by their dominant property types, with the adjustment for the extent of confiscation of assets in each episode. The income dimension is inserted in three qualitative categories. The sign of the crowd symbolizes partial common income. Double crowd stands for near-total common income in ancient agricultural central plan economies, modern industrial central plan economies, the privately-run central plan colony of the Dutch Java, voluntary plantation communes from the Plymouth Colony in the 1620s to Russian War Communism in 1918-20, in primordial societies, and under Enterprise Network Socialism in Russia and similar countries. Economies with private income escape a crowd sign. In one glance, one can assess the property status around the world and through history on the scale from privatization to socialization of assets under limited and restrictive government.

Figure 3.6 quantifies figures 3.4 and 3.5 in the three-dimensional frame. It maps the same 33 empirical property episodes. It uses the same continuous standard of property types as figure 3.5 by the extent of socialization vs. privatization. Figure 3.6 drops the externalities dimension for simplicity. Quantification of the rates of income redistribution and government restriction as shares of GDP on the left and right horizontal axes, respectively, is direct. All errors of measurement are correctable; they are not due to limits to measurement. Quantification of property types on the vertical axis as the level of privatization vs. socialization in production of GDP in each economy or sector suffers from limits to measurement.

The principal limit is that we estimate a continuous dimension over the sequence of discrete ranges assigned to each property type. The levels of privatization and socialization in each property type, in each economy, and in each empirical episode are additive to 100 percent. This linear approach prescribes no intrinsic rule for the selection of ranges for specific property types. One can say that common property starts at 60 percent socialization and goes to 100 percent whereas the four types of ownership cover equal 15 percentage-point ranges. Alternatively, one can view private property as zero percent socialization, in the same vein as pure private income equates with zero rate of income redistribution. This would line up a continuum from zero socialization of assets under private ownership to total socialization under pure common property. In this case, the ascending of property types towards socialization starts with cooperative property at one percent socialization and passes through equal or unequal ranges to total common property at 100 percent socialization. The choice of unequal ranges of the level of socialization for each property type is infinite. For example, one can always argue that local government property occupies a limited range whereas national state ownership covers a great range of socialization. The least judgmental solution is to simply ascribe the equal sequential 20 percentage-point ranges of socialization to each of the five property types. The property dimension then divides into five quintiles. Private property covers one to 20 percent, cooperative property 21 to 40 percent, local government ownership 41 to 60 percent, national state ownership 61 to 80 percent, and common property 81 to 100 percent socialization. Figure 3.6 takes this least discretionary approach. The distribution by quintiles makes it easier to adjust each specific economy or empirical case for the incidence of property confiscation. If a given empirical episode is dominated by typical private property, in the range of 1 to 20 percent socialization, and one in
ANNEX 3.2
THE FOUR-DIMENSIONAL TABLE OF ECONOMIC SPECIES

Notes:
1. Codes are listed in the legend for the two-dimensional table of economic species
2. Colors designate property types which dominate a given economic species:
   - Private
   - Cooperative
   - Local government
   - National state
   - Common
3. The size of the bubble estimates the rate of remuneration for the production of ideas, invention, and technological innovation
The Omnipresence of Common Income in a Multi-Dimensional World

four units of assets is confiscated by the government or private predators during its life-time in the most conventional manner, one can assign the average value of 10 to 75 percent of assets and the value of 90 to 25 percent of assets. By the weighted average, this episode amounts to 30 percent socialization of property. Figure 3.6 incorporates similar adjustments for each empirical property episode with the estimated incidence of property confiscation. These are crude approximations but the illustrative nature of this exercise makes it not sensitive to measurement errors.

Finally, one can select an alternative continuous standard for measuring property types by the extent of socialization vs. proprietary ownership. A new standard requires recalculation of the values for specific economies and empirical property episodes on the property dimension within the same three-dimensional format of figure 3.6. It may be germane to employ both quantitative standards of the property dimension. This is not necessary for our purpose. A different standard of measurement rearranges values but does not diminish their vast dispersion. One property standard is sufficient to document empirical multi-dimensional heterogeneity through ages around the world.

A moveable map

To make the multi-dimensional map in figure 3.3 and other figures readable and not overcrowded, we singled out only big countries and aggregated other economies by supra-national regions. This broad brush lumps together historical and contemporary economies by distinctive periods or whole epochs. They all can be disaggregated to any level of detail in time, space, and economic activity. The table of 110 economic species in Annexes 3.1 and 3.2 submits an extensive, if incomplete, disaggregation. No economic cluster is too big and no economy or its sector at any time span is too small for the multi-dimensional map. One can add to the map every individual economy, past and present, at any point in time, and every sector of each economy.

North Korea and Cambodia under the Khmer Rouge, extreme examples of near-total common income under near-total government and state ownership, would fit the tip of the north-eastern corner in figure 3.3. The Inca Empire, a veritable state agricultural commune, would lie nearby. Similar economies with agricultural central planning, in ancient Egypt, Mesopotamia, India, China, Japan, the Great Zimbabwe, and the Aztec and Maya Empires, could find their place near Nazi Germany and Communist Yugoslavia. Annexes 3.1 and 3.2 approximate their locations. Post-Communist Poland, Hungary, and similar economies, judging from their progression from common to private income in figure 2.1 and the estimated extent of government restriction, can be located on a diagonal between post-Communist China and Russia. One can take the world in figure 3.3, itemize it into a long list of national economies as they have evolved through history, and place each of them. This would make up a crowded map but not one observation will be missed. The map can accommodate any and all economic entities, provided the relevant data exist. They all can find their place on the map by the extent of income redistribution and government restriction. The property type or mix and the status of spillovers in each observation enhance multilateral heterogeneity.

One can choose a variety of types of aggregation and disaggregation. Subsequent maps in our book offer a few examples. Figure 2.4 in Chapter 2 aggregated world economies by economic policy
paths, such as breakup of common income, liberalization, and privatization. Figure 3.3 uses a simple intuitive hierarchy of national economies and supra-national regions during specific periods. Figures 3.4 through 3.6 disaggregate them by 33 empirical property episodes. The table of economic species in Annexes 3.1 and 3.2 disaggregates world economies into 110 unique, self-contained, and indivisible species defined by the rates of income redistribution and government restriction. Chapter 7 disaggregates world economies into thirteen major empirical clusters during the last 10,000 years in figure 7.1. Then it aggregates them in a sequence of figures into six systemic classes and builds a taxonomy of economic systems. The learning opportunities seem to be unlimited. Various levels of aggregation can be geographic, historical, by types of economic systems, by aspects of economic activity, by economic performance and paths of economic growth, and by any other conceivable cross-section of the universe.

Measurement is also a learning process. It derives from a consistent accounting approach which is based on the uniform criteria of exclusion specific to each dimension. Matrix 3.1 summarizes the accounting mechanisms and measurements on the four dimensions.

Measurement improves by learning. Locations of economies in figure 3.3 are crude and tentative approximations. The multi-dimensional map does not pretend to pinpoint exact locations of specific national and supra-national economies at any period of time. Its objective is less ambitious and more fundamental. It is to show that each and every economy can be identified, located, and installed on the multi-dimensional map. The crude and tentative approximations serve merely as a starting point of learning. Each empirical case can be readily relocated on the map when more rigorous measurement and better data yield more accurate positions on one or more dimensions. All errors of measurement and judgement can be rectified by relocations. Locations can be further adjusted and refined when more reliable information arrives. We call it a moveable map in the same spirit as Ernest Hemingway called Paris of the 1920s “A Moveable Feast.”

The multi-dimensional framework does not make predictions about locations of specific economic observations. It derives observations from sources of various validity and accuracy and makes the best possible estimates for each dimension. For this reason, correction of errors does not invalidate the framework and the layout of the multi-dimensional map. The map as such does not depend on the accuracy of specific locations. The quality of the map does. Correction of errors and repositioning of economies improves this quality and strengthens the multi-dimensional construct. One can say that in the process of learning, the multi-dimensional map is self-correctable.

The multi-dimensional designs in figures 3.3, 3.4, 3.5, and 3.6 are different. The finding is the same. Russia and China are not just transitional outliers from a one-dimensional world. Rather, they are salient cases of a universal pattern. Figures 3.3 through 3.6 demonstrate the lack of correlations between income redistribution, government restriction, and property types. They emerge as uncorrelated independent variables. This is true around the world and through history.
FIGURE 3.7
A THREE-DIMENSIONAL VIEW OF INCOME REDISTRIBUTION, GOVERNMENT RESTRICTION, AND PROPERTY TYPES: 110 ECONOMIC SPECIES

Sources: Annexes 3.1 and 3.2
FIGURE 3.8
A THREE-DIMENSIONAL VIEW OF INCOME REDISTRIBUTION, GOVERNMENT RESTRICTION, AND PROPERTY TYPES: 50 EQUIPROPORTIONAL CASES
Is this multi-dimensional map necessary and sufficient?

Two empirical conditions can each invalidate the multi-dimensional map exemplified in figure 3.3 and subsequent figures. One makes it unnecessary, the other insufficient.

1. If all economies can be compressed to fit a unidimensional line such as the diagonal in figure 3.3 or the scatter in figure 3.7, the split between income redistribution, government restriction, and property types becomes unnecessary. This is the test of strong positive correlations between these variables. It renders the separate income, government, and property dimensions unnecessary. A homogeneous world fits on one dimension. Multi-dimensional heterogeneity vanishes.

2. If one or more economies cannot be placed on the map within the two-dimensional frame of income and government, let alone the three-dimensional frame of figure 3.6, and lie outside, this multi-dimensional framework is not sufficient. This is the test of universal inclusion.

Figures 3.3, 3.6, 3.7, and 3.8 offer two quick tests of positive trilateral correlations. These tests apply to different levels of aggregation.

The first test runs at the level of national economies and supra-national regions. One can compare the one-dimensional diagonal in figure 3.3 with the rest of the map. The rest of the map should be empty if the extents of income redistribution, government restriction, and socialization of property types converge in all empirical observations. If these extents are not equiproportional but still exhibit a strong positive correlation, a positively sloped regression line can be drawn. It will resemble the diagonal and will differ from it only in the slope. The rest of the map outside of this line should be mostly empty, with a minimum of outlying observations. For the strong positive correlation between these variables to be possible, all conceivable measurement errors in figure 3.3 should not be random. All errors should constitute deviations from the diagonal or from another positively sloped line. This is probable only if a multi-dimensional dispersion in figure 3.3 was fabricated. Corrections of these measurement errors should converge all economies towards the unidimensional diagonal or a positively sloped line, relocate economies from all directions onto or around one line. Moreover, even the heterogeneous qualitative characteristics and multiple trilateral combinations in table 3.1 should disappear. Primordial common output, private slavery, brigandry, piracy, the two-track economy in post-Communist China, and Enterprise Network Socialism in post-Communist Russia should all be rendered non-existent or devoid of their unique trilateral combinations. All these and other economies from figure 3.3 should find a place on the one-dimensional map in figure 3.2. This is a forthright test readily available to any observer.

The second test disaggregates national economies and supra-national regions into property episodes and into elementary units, economic species. A comparison between figures 3.6, 3.7, and 3.8 conducts this test in the three-dimensional frame with economies disaggregated into property episodes. Figure 3.6 plots 33 actual property episodes in historical and contemporary economies. They are identified in figures 3.4 and 3.5 by their extents of income redistribution, government restriction, and property types
linearized on the scale of socialization vs. privatization. We discussed these measurements in detail above. The three-dimensional scatter diagram depicts each empirical episode with the blue dot and a drop-down projection line to the respective rates of redistribution on the income dimension and restriction on the government dimension. Figure 3.7 plots 110 elementary systems which are unique, self-contained, non-overlapping, and indivisible by themselves, in the absence of breakups. Their description can be found in the Table of Economic Species in Annex 3.1. The measurement of economic species in three dimensions in figure 3.7 is the same as the measurement of property episodes in figure 3.6. We will discuss the Table of Economic Species in detail later in this chapter.

Against the two plots of actual observations in figures 3.6 and 3.7, figure 3.8 makes up 50 fictitious cases with equiproportional extents of income redistribution, government restriction, and property socialization. We limited the number of fictitious cases to 50 for visibility only. The number of equiproportional cases can be increased indefinitely. One could use any other trilateral proportions as long as the three variables are strongly positively correlated. One could also apply a different standard of continuous measurement of property types. The picture would essentially be the same. A strong positive correlation between the three variables converges the scatter of 50 observations onto one linear trajectory. For visual comparison, the blue dots of 50 observations project the drop-down yellow lines to the equal rates of income redistribution and government restriction and the drop-down orange lines to the equal extents of income redistribution and property socialization.

The three-dimensional scatter diagram in figure 3.8 is appealing. Alas, its content does not exist. Its 50 observations represent a sequence of numerical matches which has no bearing in the real world. The contrast between figures 3.6 and 3.7 vs. 3.8 is stark. The real world is scattered all over the space within the three-dimensional frame in figures 3.6 and 3.7. It is uncorrelated between variables, in the same way as the 33 empirical episodes are dispersed throughout the map in figures 3.4 and 3.5 and the 110 economic species are dispersed all over the map in Annexes 3.1 and 3.2. The imaginary world of strong positive correlations between the three variables lines up in figure 3.8. This imaginary world in figure 3.8 corresponds to the one-dimensional world in figure 3.2. If one can reduce the scatters in figures 3.6 and 3.7 to the string in figure 3.8, the multi-dimensional frame is unnecessary.

The test of universal inclusion is the same test for two and more dimensions as we applied to the one-dimensional map. The standard of proof and refutation is the same. Can the map cover, accommodate, and absorb all known and all conceivable empirical cases, big and small, around the world and through history, from the beginning of human society to the time of this reading? If one can find a single economy or segment, extant or extinct, which cannot be placed on the map in figure 3.3 or among disaggregated units in Annexes 3.1 and 3.2, the multi-dimensional framework has failed. Falsification is instantaneous and irreversible. There should be no cases outside of the map.

This is a hard test. The condition of universal inclusion applies separately to each of the two basic dimensions, the income dimension and the government dimension, because they frame the latitude and the longitude of the multi-dimensional map. A failure of one of these dimensions to accommodate and
assimilate a single empirical case throws an outlying case outside of the map and dooms the entire framework to perish. This condition tests whether the income and government dimensions are genuine and not fabricated. The underlying problem with the one-dimensional perspective of government vs. market is not that it forms only one dimension but that it is a false dimension which does not fit the world. Piling up more false dimensions or even adding a genuine dimension such as property types cannot rectify this problem. The test of universal inclusion applied to the multi-dimensional map determines whether each of its basic dimensions is genuine.\textsuperscript{13}

Furthermore, if cases are missing due to lacunae in our knowledge and are discovered later, they must be able to be installed on the map. If they do not fit any location within the two-dimensional frame, they invalidate the multi-dimensional approach. If errors of measurement and judgement are found in the placement of any number of empirical cases, they can be corrected, cases disaggregated or aggregated, and economies or species relocated. If errors are not correctable and the cases cannot be properly identified, relocated, and assimilated within the map, the multi-dimensional system fails the test of universal inclusion and is invalidated. The multi-dimensional framework is permanently open to verification and falsification. It can be immediately and irrevocably refuted by finding a single empirical exception to its universal inclusiveness.

Pending such refutation, the world on the multi-dimensional map seems all-inclusive. It captures universal experience. It is both static and dynamic. Any systemic metamorphosis and any policy shift in each economy can be navigated on this map. When economic systems change, economies move on the map and add to the map. This is why the same countries at different times appear in different parts of figure 3.3. China, the Soviet Union, and Nazi Germany under central planning and China, Russia, and United Germany after central planning find their specific locations on the same map. Similarly, pre-industrial Europe and contemporary Western market economies appear in different segments of the map. Figure 2.4 in the previous chapter sketched the economic policy paths such as breakup of common income, liberalization, and privatization. It contrasted liberalization and privatization without the breakup of common income in Russia as it descended from central planning to Enterprise Network Socialism and the breakup of common income with limited liberalization in China on the road to the market economy. It compared these two paths with a more conventional synchronization of the breakup of common income, liberalization, and privatization in the evolution of Western market economies. We will further explore this dynamic capacity of the multi-dimensional map later in this book.

The multi-dimensional framework illustrated in figure 3.3 and Annex 3.2 can encapsulate both the evolution of economic species from primordial common output to modern market and socialist economies and the current position of all existing economies. The four dimensions render systemic characteristics of all economies. Then the map framed by these four dimensions captures all economies and their paths. This multi-dimensional map creates a contemporaneous snapshot of all economies in the world throughout more

\textsuperscript{13}The complementary, property and externalities dimensions, seem to be all-inclusive at the outset. There are always some types of property rights vs. common property and some compensation of spillovers of ideas (even if zero).
than 10,000 years of their evolution.
Chapter 3

The Omnipresence of Common Income in a Multi-Dimensional World

Section B. Patterns of Multi-Dimensional Heterogeneity

A quick glance at Annex 3.2 gives the sight of a multi-dimensional universe. It looks like a constellation of heterogeneous economic systems. These are 110 economic species defined as elementary systems that are unique, self-contained, non-overlapping, and indivisible by themselves, in the sense that they cannot exist after breakups. The 110 enumerated species are spread all over the map in the intersections of different rates of income redistribution and government restriction. They exhibit different principal property types emphasized by five colors. They contain different extents of internalization of positive externalities: The larger is the size of the bubble the higher is the rate of remuneration for production of ideas, invention, and technological innovation. In short, world economies are heterogeneous in four dimensions.

In the one-dimensional world in figure 3.2, world economies differ only by one measure. It is the degree of market distortions measured by the extent of government restriction. In the multi-dimensional universe in figure 3.3 and Annex 3.2, world economies differ in four dimensions, by the rates of income redistribution, government restriction, and compensation of spillovers, and by property types. Adam Smith was first to point out what we would now call a multi-dimensional heterogeneity of economic systems, particularly that free transactions, limited government, and private property may not reduce income redistribution and may even increase it.

The vision of Adam Smith

Adam Smith lays out a three-dimensional perspective succinctly. He observes that the burden of slavery (and, by implication, of redistribution of output and income) is positively related to liberal government and private property:

As the profit and success of the cultivation which is carried on by means of cattle, depend very much upon the good management of those cattle; so the profit and success of that which is carried on by slaves, must depend equally upon the good management of those slaves; and in the good management of their slaves the French planters, I think it is generally allowed, are superior to English. The law, so far as it gives some weak protection to the slave against the violence of his master, is likely to be better executed in a colony where the government is in a great measure arbitrary, than in one where it is altogether free. In every country where the unfortunate law of slavery is established, the magistrate, when he protects the slave, intermeddles in some measure in the management of the private property of the master; and,
### Annex 3.1. The Two-Dimensional Table of Economic Species

#### INCOME REDISTRIBUTION, PERCENT OF GDP

<table>
<thead>
<tr>
<th>%</th>
<th>1-10</th>
<th>11-20</th>
<th>21-30</th>
<th>31-40</th>
<th>41-50</th>
<th>51-60</th>
<th>61-70</th>
<th>71-80</th>
<th>81-90</th>
<th>91-100</th>
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<tr>
<td>GOVERNMENT RESTRICTION, % of GDP</td>
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Legend:

AC - agrarian commune with forced production (e.g., the Inca Empire)
AP - agricultural central planning: centralized irrigation network and forced delivery of output to the state wholesale monopsony/monopoly (e.g., ancient Egypt, Mesopotamia, China, Japan, India, the Olmec, Maya, the Aztec Empire, the Great Zimbabwe)
AT - arbitrary and confiscatory taxation
AW - ancient Welfare State (e.g., Rome, 58 B.C.-453 A.D.)
BM - black market
BO - bailouts (soft subsidies)
BR - brigandry
CA - castes (e.g., India)
CC - centralized privately run colonies (e.g., Java)
CF - corporate fraud
CL - coloni (the late Roman Empire)
CM - colonial mercantilism (e.g., Portugal, Holland, 1600s)
CN - corruption
CO - common output of primordial hunters and gatherers
CP - collectivized plantation: forced plantation labor and collectivized delivery in agriculture, nationalized industry (Madagascar, 1973-86)
CQ - conquest
CR - corporatism (e.g., South Africa, Argentina under Peron)
CS - the corporate state (e.g., Fascist Italy)
CT - collective (communal) taxation (e.g., pre-colonial India, pre-modern Islamic states, pre-Columbian America, Imperial Russia)
CW - coordinated and open wholesale and foreign trade and workshop manufacturing, indirectly financed by the government (financed by private intermediaries from government deposits of accumulated tax revenues, that is, implicit fiscal lending for business finance) and free, private retail trade, agriculture, and hand manufacturing with slave labor; free product and labor markets apart from slavery (ancient Greece and Rome)
DL - sectoral draft labor (e.g., corvee in France)
DS - debt-based, local government-enforced private slavery (Mycenae, Sparta, pre-Solon Athens, pre-Republic Rome, and the ancient Near East)
DT - delegated taxation at specific tax rates levied by the government and collected by designated individuals (e.g., ancient Greek city-states, the Roman Republic, the early Roman Empire, the kingdom of Theodoric the Great, 488-526, under the government of Boethius, the Empire of Charlemagne, 768-814)

EC - export control, mandated repatriation of foreign exchange revenues, which leads to enforcement of tax remittance under Enterprise Network Socialism (Russia since 1999)

EN - enslavement (e.g., pre-colonial Africa, early medieval Germanic societies, the Vikings, 800-1050, Iran, 1501-1850, the Ottoman Empire, pre-colonial India, e.g., Malabar, the Indian societies of the American Northwest coast, e.g., Kwakiutl and Yurok, spin-offs of piracy, and other world-wide episodes)

ENS - Enterprise Network Socialism, symbiotic government (e.g., Russia in the 1990s)

FA - foreign aid
FC - forced plantation commune (e.g., Guarani)
FD - franchised output delivery quotas: under franchised taxation and wholesale monopsony/mopony, taxation in money or in kind with preset quotas for centralized remittance and residuals accruing to local governors converts into local forced delivery quotas (e.g., ancient and medieval Persia, medieval Arab states, the Ottoman Empire, pre-colonial India, medieval China and Japan)

FE - feudal network (medieval Europe)
FF - financial fraud and insurance fraud, including insurance risk abuse and bank insurance abuse (“moral hazard” in banking)
FG - fiscal guilds (e.g., Byzantium)
FL - financial looting (e.g., Chile in the late 1970s)
FM - franchised taxation and franchised wholesale monopsony/mopony (e.g., pre-Meiji Japan and late Imperial China)
FP - franchised central planning with forced delivery (e.g., medieval and Tokugawa Japan, medieval China)
FR - financial suppression, e.g., direct financial repression in Latin America and other less developed economies by the government and financial-industrial quasi-cartels and networks
FS - franchised slavery (or franchised serfdom, which is a misnomer) (e.g., Russia, 1497-1861, Korea, 1392-1725, the Kanem Bornu Empire, 1580-1846, the Oyo Empire, 1650-1800, the Fulani Empire, 1790-1897)
FT - franchised taxation (e.g., ancient and medieval Persia, medieval Arab states, the Ottoman Empire, pre-colonial India, medieval China)

FV - franchised violent enterprises (government-franchised piracy) (e.g., colonial Portugal)
FY - franchised tribute (e.g., the early Arab Caliphate, the Mongol Empire, Kievan Rus, Muscovy, 1147-1380)
GC - government-financed colonization and resettlement of landless peasants (ancient Greece and Rome)
GI - industrial policy and government-directed investment (e.g., post-World War II Japan, South Korea, China, 1990s, associational planning and the New Deal planning in the U.S., 1920s-1930s, indicative planning, France, 1950s-1960s)
GS - government-supplied slavery (ancient Greece and Rome and non-agricultural sectors in Phoenicia and Carthage)
GU - private guilds (e.g., pre-industrial Europe)
HE - helotry, a servitude community in private agricultural service to members of the ruling community under government management, and to the state directly (Sparta, 9th century-371 B.C.)
HI - militarized central plan plantation (Hispaniola under Toussaint, 1800-1802)
HM - hierarchical guild mercantilism (the Hanseatic League, 1158-1669)
IC - industrial central plan commune with terror-enforced forced production and output quotas (e.g., North Korea)
IL - IMF loans and subsidies from other international lending organizations
IP - multi-industry central planning with forced production, output quotas, and the soft budget constraint, without terror enforcement (e.g., the USSR, part of Eastern Europe, and China under Communism except for periods ca. 1940-1953 in the USSR, ca. 1958-71 in China, ca. 1949-1953 in Hungary, etc.)
IS - indentured servitude (e.g., Spanish colonies in America and the Philippines)
IT - imperial tribute/taxation (e.g., the Empire of Alexander the Great and the successive states, the Roman Empire)
KI - subsidized communal income (kibbutzim) (Israel)
KR - agricultural central plan commune with forced production (Communist Cambodia under the Khmer Rouge, 1975-79)
LA - litigation abuse
LB - wage scissors (landlord bias) - suppressed wages and sectoral wage/rent scissors (e.g., India, Pakistan, Bangladesh, Jordan)
LM - state-coordinated labor management with implicit output quotas, forced delivery, forced investment and technology application but without suppressed wages and forced saving (Communist Yugoslavia)
MA - mafia (e.g., Italy, U.S. cities) and other parasitic non-governmental and violent redistributive enterprises (e.g., Latin America)
MD - managed delivery: forced delivery in agriculture, central plan with indicative output targets in industry (Egypt, 1960s)
ME - mercantilism (e.g., pre-industrial Europe, Meiji Japan)
MM - military mercantilism (e.g., Genoa, Venice, Florence)
MP - mono-industrial central planning with forced production (output quotas) in the textile industry and forced delivery in agriculture (Egypt under Mohammad Ali, 1805-49)
MR - monopoly rights
MT - collective monopsony/monopoly trade (e.g., Medieval Maghreb)
NA - confiscations and nationalizations of firms, banks, and land (e.g., Western European Welfare States, 1930s-1980s, Latin America, and developing and post-colonial economies)
NE - natural-resource based national estate, e.g., national oil company, with economic rents accruing to a theocratic or tribal network which subsidizes a welfare state for the rest of the population, including broad price subsidies and subsidies for secondary and tertiary industries (e.g., Saudi Arabia since the 1960s, Iran since 1979, Libya since 1969, etc.)
NR - pre-Neolithic and Neolithic rationing of output, emergence of income and government as insurance (e.g., Katal Huyuk, Jericho)
NS - network serfdom (e.g., the Polish Kingdom)
NW - network wholesale monopsony as part of the encomienda system which started as the agglomerated local wholesale monopsony of settlers franchisee tax collectors in the New Spain (whose arbitrary tribute rights forced the Amerindians to produce output surpluses and sell untaxed surpluses to the franchisee monopsony for the lack of other wholesalers) and evolved into the network wholesale monopsony, network labor monopsony, and network landowner/labor monopsony after the Wars of Independence and the abolition of the encomienda system (Latin America, 1493-1811 and the network evolution thereafter)
OS - other sectoral subsidies
PB - ad hoc subsidies (pork barrel)
PC - peripheral franchised central planning with forced delivery of output and communal taxation for supporting the central irrigation and infrastructure network (e.g., pre-Columbian North America)
PD - plunder
PE - peonage (e.g., Spanish American colonies)
PF - private joint-stock network of forced production (e.g., the Virginia colony)
PI - near-total private income with government as public utility (classical market economy, e.g., England and the U.S. before the Welfare State, Singapore, Hong Kong)
PIG - sectoral private income in a two-track economy, with government as protective custody, restricting the new-entrant market sector from the inherited network of state enterprises, and vice versa (e.g., China, post-1978, Vietnam, post-1986, Cambodia, Myanmar)
PL - the Poor Laws (e.g., England)
PO - private auxiliary plots and orchard plots (e.g., USSR, 1947-1991)
PP - central planning over private corporations with output quotas of forced production and forced labor (e.g., Nazi Germany)
PR - patronage, “crony capitalism” (e.g., India, Indonesia, Mexico)
PS - private serfdom: unpaid non-free labor in lieu of rent (medieval Europe)
PT - centrally planned slave trade and forced production (output quotas) by slaves on state plantations (Dahomey, 1680-1892)
PV - privileges (e.g., pre-industrial Spain and France, Latin America)
PW - public works (e.g., U.S., 1930s, China, 1990s)
PY - piracy
QC - quasi-cartels of private industrial, financial, and agricultural networks with labor monopsony (including landowner/labor monopsony) and suppressed wages (Mexico and other countries of Latin America since the 1810s, Chile until 1983, sub-Saharan Africa since the 1990s)
QS - quasi-states of private colonies, large mining and industrial firms, and large farms (British South Africa under Cecil Rhodes)
RA - racketeering (e.g., U.S. cities in the 1920s)
RC - recursive confiscations of land, agricultural output, and industrial output, with offsetting cross-subsidies between tribes, factions, and between rural and urban sectors (Zimbabwe, since 1987)
RD - repudiations of government debt (e.g., Spain, 1600s)
RE - rationed exchange (e.g., Western Europe, 1940s)
RP - reformed planning: industrial central planning with the soft budget constraint and enterprise discretion over production quotas (e.g., Hungary, 1968-1989; Poland, 1980s)
RS - regional subsidies
RT - regulated local trade in traditional, historical, and developing economies
RV - religious violent enterprises (the Holy Roman Empire, 754/843/962-1508, the Crusades, 1095-1291 and to ca. 1500), with localized markets and delegated economic arbitration (Prince-Bishoprics, ca.500 - ca. 1500, Missi Dominici, 754- ca.1000)
SE - other scattered expropriations, redistributive transfers through violent and non-violent crime, etc.
SF - subsidized private foreign trade (e.g., Ming China, Indonesia, the 10th-11th centuries, South-East Asia and throughout the Indian Ocean, the 13th century)
SG - state guilds (e.g., the Aztec Empire, particularly in Tenochtitlan)
SL - private slavery (e.g., U.S. antebellum South, Cuba, Brazil, 1600-1860)
SM - government concessions to private slave operators in silver and other mines (e.g., Carthage and ancient Athens)
SR - settlement restrictions (e.g., England, 1700s)
SS - state syndicates (e.g., the USSR in the 1920s)
ST - suppressed trade, including wholesale trade from agricultural producers to merchants, retail trade by merchants, and general inter-local and inter-regional trade, suppressed by feudal warlords-cum-landlords, both by force and by prohibitive levies, with only localized and scattered markets intact (Europe in the Dark Ages, 476-ca. 1000/1100)
SU - quasi-state unions (e.g., Israel)
TA - tariffs
TB - sectoral third party billing (e.g., U.S. employer-paid health insurance, wherein providers bill the insurance companies; Medicare, wherein providers bill the government; and U.S. state college education wherein providers bill the state for tuition)
TC - tribute central planning and franchised fiscal colonialism as part of the encomienda system: government allotment to settler fiscal franchisees of control over land and mines with a capped number of indentured indigenous workers, who remained collective land owners, for the purpose of revenue collection for the crown, in-kind taxation of precious metals and agricultural commodities, and wealth transfer to Spain (the New Spain in the South and Central America and the Caribbean, 1493-ca. 1810)
TD - transaction fraud
TF - tax concessions, known as tax farming, assigned by feudal kingdoms to landowners and middlemen, started with the mayors of the palace in the Merovingian France, 476-750, and lasted intermittently in the feudal Europe through the 14th century, without setting specific centralized tax rates and evolved into arbitrary taxation of agricultural surpluses which suppressed wholesale trade and localized the markets
TP - terror-enforced central planning with forced production, output quotas, and forced labor (e.g., the USSR, 1940-53, China, 1958-1971, Hungary, 1949-1953, Albania, 1949-1985)
TR - tribute (e.g., barbarians around the late Roman Empire)
TS - political network transfer-seeking (rent-seeking) converging with inherited wholesale and labor monopsonies (e.g., Latin America, India, Turkey)
TT - tribal transfers between tribal networks inside artificial borders (e.g., Africa) in conjunction with rural-to-urban transfers across tribes
TU - trade unions
TW - terrorist networks with power agendas and private, non-tax-based Welfare States financed by foreign charities or racket (e.g., Al-Qaeda, Hamas, Hizballah, etc., 1990s)
UB - urban bias (the price scissors), rural-to-urban transfers (e.g., Africa, the Middle East, the USSR in the 1920s)
UP - urbanization central planning: forced food supply and forced labor for construction of urban administrative centers (e.g., centralized medieval Arab states, the Sung and early Ming dynasties in China, Central Asia under Timur in the 14th century, the Mughal Empire in India, medieval and Tokugawa Japan, Imperial Russia of Peter the Great in the early 18th century)
VA - village agriculture: small group agriculture and private agriculture in the village, with private output residual surpluses as private inventories for exchange after delivery to Neolithic and post-Neolithic government storages for insurance (Neolithic settlements, pre-dynastic Egypt, pre-Kish Mesopotamia, pre-Mycenaean Greece, Celtic and Germanic communities, North-American Indian communities)
VC - voluntary communes (e.g., the Mennonites, monasteries)
VI - feudal tribute (e.g., Europe between the fall of the Roman Empire and the Empire of Charlemagne, the Vikings)
VP - voluntary plantation communes (e.g., the Plymouth colony, Russian communes during War Communism, 1918-20)
VT - violent transfer taking (rent-seeking) (e.g., Latin America in the 19th century)
WA - wholesale agricultural monopsony licensed by the governments of merchant kingdoms to private merchant networks to operate wholesale agricultural auctions with suppressed procurement prices followed by free, competitive retail trade and free and government-financed foreign trade (Phoenicia, Carthage, ancient Israel, and other ancient Levant)
WC - forced delivery of output without forced production (output quotas) and without central plan of supply chains, state confiscation of output above subsistence (War Communism in Russia, 1918-1920, the Reign of Terror, France, 1793-1794)
WF - welfare fraud (e.g., contemporary Italy, the U.S.)
WM - government wholesale monopsony/monopoly (e.g., medieval Islamic States, the Ottoman Empire, India, China, Japan)
WS - the Welfare State: redistributive transfers, entitlements, explicit and implicit household subsidies (e.g., Western Europe)
ZA - central plan private monopolies (zaibatsu) with forced production, output quotas, and forced delivery (Japan, 1930s-1940s)

Source: Annex 3.4
ANNEX 3.2
THE FOUR-DIMENSIONAL TABLE OF ECONOMIC SPECIES

Notes:
1. Codes are listed in the legend for the two-dimensional table of economic species.
2. Colors designate property types which dominate a given economic species:
   - Blue: Private
   - Yellow: Cooperative
   - Green: Local government
   - Brown: National state
   - Red: Common
3. The size of the bubble estimates the rate of remuneration for the production of ideas, invention, and technological innovation.
ANNEX 3.3
FOUR-DIMENSIONAL HETEROGENEITY OF ECONOMIC SPECIES

Notes:
1. Codes are listed in the legend for the two-dimensional table of economic species
2. Colors designate property types which dominate a given economic species:

- Blue: Private
- Yellow: Cooperative
- Green: Local government
- Brown: National state
- Red: Common

3. The size of the bubble estimates the rate of remuneration for the production of ideas, invention, and technological innovation.
Chapter 4

The Evolution of Private Income: A Few Sketches and Approximations

In the Fifth Book of *The Wealth of Nations*, Adam Smith builds up a stunning paradox:

The private revenue of individuals, it has been shewn in the first book of this Inquiry, arises ultimately from three different sources: Rent, Profit, and Wages. (...)

The subjects of every state ought to contribute towards the support of the government, as nearly as possible, in proportion to their respective abilities; that is, in proportion to the revenue which they respectively enjoy under the protection of the state. The expense of government to the individuals of a great nation, is like the expense of management to the joint tenants of a great estate, who are all obliged to contribute in proportion to their respective interests in the estate. (...)

The tax which individual is bound to pay out to be certain, and not arbitrary. (...) The certainty of what each individual ought to pay is, in taxation, a matter of so great importance, that a very considerable degree of inequality, it appears, I believe, from the experience of all nations, is not near so great an evil as a very small degree of uncertainty.¹

Unless we are mistaken, Adam Smith is saying that (1) the basis of *private income* rests upon a foundation of well-defined public income directed to the provision of certain specific services. And (2) this public income amounts to the *private income* of the government. This conceptual equivalence means that the government, in effects, resembles a private enterprise-like entity, and that taxation is akin to a private contract between the government and the citizenry, in which citizens pay specific (and preferably low) taxes in exchanges for services rendered. Chapter 4 examines this seeming paradox.

The Origin of Private Income

In addition to orderly taxation, Adam Smith propounds several other important related insights. He always equates privacy of revenue with its certainty, in the sense of rules as opposed to discretion and arbitrariness.

He maintains that rents in a prosperous economy are certain,^{2} that wages as return on labor effort and the ability to command all output surplus are certain,^{3} and, that even in the absence of property rights and contractual lease, the common law secures private returns on land improvement as investment.^{4}

Those laws and customs so favourable to the yeomanry, have perhaps contributed more to the present grandeur of England, than all their boasted regulations of commerce taken together.^{5}

The principle “no arbitrary taxation,” so prominent in the writing of Adam Smith, was formulated by the English Parliament in the Petition of Right of 1628 and imposed on King Charles I. The Petition of Right of 1628 was itself based on well-established common law, which allowed individuals to sue the Crown for breaches of authority and financial distress. The Petition of Right of 1628, among other clauses, prohibited arbitrary search and seizures, which later was included in the U.S. Constitution in the Bill of Rights.

It is instructive that the rule of no arbitrary taxation, which effectively formulated the principle of private income, preceded in the Petition of Right of 1628 the rule of no arbitrary search and seizures, which underpinned the principle of private property. “A man’s home is his castle” is a famous English expression, reflecting this principle. Turning back the pages of history still further, private ownership of land existed in England before the Norman conquest in 1066. Several decades later, in 1086, the new Norman king ordered his agents to conduct an incredibly detailed survey of his nation’s wealth, visiting every household to count and register each unit of land, animals, tools, and every other quantifiable asset. The purpose was to determine the nation’s potential tax base. This survey has come down to us through history as the famous Doomsday Book. Even though some 170 Norman barons took control of most large Anglo-Saxon estates, their land and other holdings were accurately registered in the king’s records. The recognition and registration of private property provided the Crown with a basis for collecting taxes from the holders of wealth and the surrounding communities that served each feudal estate. The point of this historical expedition is that free transactions and private property have existed for millennia in settled or even nomadic agriculture. But the two well-recognized features of markets—free exchange and private property—were not sufficient, by themselves, to propel these ancient communities beyond a subsistence level of output and consumption.^{6}

\[^{2}\text{Ibid.}, pp. 439-440, 441.\]
\[^{3}\text{Ibid.}, p. 15, 143.\]
\[^{4}\text{Ibid.}, p. 442.\]
\[^{5}\text{Ibid.} \text{ See also Douglass C. North, } Structure and Change in Economic History \text{ (New York: W.W. Norton, 1981)}, pp. 124-136.\]
\[^{6}\text{Douglass C. North, } Structure and Change in Economic History, pp. 78-94, 100-102.\]
For our purposes, it is important to note that the authors of the Petition of Right of 1628 placed private income ahead of private property. They probably understood that private property was of little use unless its owners could secure the private income generated by the property. By 1628, the unique English common law had settled rents, wages, and profits in a manner praised by Adam Smith—what, using modern language, we now call internalization of income. The heretofore missing element in the system of private income was the origin of a reasonable level of orderly public income, which would represent contractual payment for government services, especially for protection of life and property, thereby minimizing the confiscation and redistribution that results from the arbitrary and uncertain taxation Smith decried. This clarity of taxation, the source of public income, became the ultimate link to the stability and growth of private income. It laid the foundation for the great prosperity that was to a century later.

Douglass C. North describes a secular effort in England, which culminated after the Glorious Revolution of 1688, to set up a system of orderly taxation in place of traditional fiscal confiscations and redistribution of income. He argues that this development distinguished England from France and Spain and laid the foundation for the rise of large-scale private investment, which financed the Industrial Revolution. Orderly taxation, in addition to its being certain and specific, was also low, taking from private households less than 10 percent of GDP. Orderly and low taxation enabled investors to secure a high private rate of return on investment, invention, and innovation.
North and John Hicks contend that the spread of the fiscally-orderly state and the financial independence of private economic activities distinguished the West from the rest of the world. Hicks also emphasizes the significance of the development of a private financial system, protected from government predation. Its development resulted in the financial revolution that fostered strong capital formation and preconditioned the Industrial Revolution. Peter G.M. Dickson, on whose work John Hicks draws in this respect, documents and details that the growth of a strong system of private finance in England was based on orderly, well-developed public finance. At the same time, private debts became convertible into equity.

Orderly public debt replaced the practice of forced government loans and repudiations, which was standard in Europe and, before the eighteenth century, important, even if sporadic, in England. Orderly public debt capitalized banks and reduced interest rates, which enabled banks to conduct two new, crucial activities:

1. Finance large-scale projects and make risky lump-sum investments in fixed capital, including those in new industrial ventures.

2. Attract deposits and channel private savings into private investment.

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11 John Hicks, *A Theory of Economic History*, pp. 79-99, 144-151. Recall that the Bank of England was established in 1694 as a private central bank and remained private until 1946. Hicks also contrasts English financial development with France, which saw a financial and fiscal debacle in the 1720s, thanks, ironically, to the English (or rather Scottish) economist and banker, John Law, creator of the infamous “Mississippi Bubble.” That was a momentous setback for France. See Ibid., pp. 87-88, 145. An overview on the importance of the financial system in economic development around the world can be found in Ross Levine, “Financial Development and Economic Growth: Views and Agenda,” *Journal of Economic Literature* 35, no. 2 (June 1997): 688-726.


13 An interesting detail: Between 1473 and 1545 and again between 1614 and 1622, the English kings did not bother to return forced loans but did not want, unlike Spanish kings, to openly repudiate Crown debt. So they reclassified forced loans as gifts and called them benevolence; however, those who were late in delivering benevolence were declared to be in arrears and subject to legal recourse. One recalls this story reading how the Russian government blamed the IMF for welching on its obligations when the latter delayed the non-returnable (that is, rolling over) credit tranches. Benevolence is back.
Before the development of orderly public finance, private savings were generally directed into public investment in such infrastructure as roads, aqueducts, canals, fortresses, palaces, and cathedrals. Dickson pinpoints the timing of the Financial Revolution before the Industrial Revolution:

The proposals of the later Stuart period were realized during the sixty years after the political revolution of 1688.

It is instructive to contrast the development of private finance in England after 1688, and the enormous industrial and economic changes that followed, with the growth and decline of the Netherlands during its Golden Age. During the seventeenth and eighteenth centuries, Holland was the most prosperous country on the globe. There was, in the 1600s, a high level of private income. One can readily envisage Holland’s prosperity displayed in the splendid paintings of the great Dutch masters, such as Rembrandt, Vermeer, Hals, and Steen, and in the great merchant houses that line Amsterdam’s canals. The Netherlands prospered from both domestic commerce and its expansive international trade. Dutch shipping was truly global. The country developed diversified cottage industries from cash crops and livestock to value-added handicrafts, an embryonic firm (the system of putting-out contracting), a stable currency (the gulden was literally as good as gold), big cities, well-developed ports, sophisticated banking and finance, a stock market (the Amsterdam Bourse), contract law and enforcement, joint-stock companies, the best models of cargo ships, shipbuilding wharfs, small textile factories, fossil fuel (peat) manufacturing, good science, a trained labor force, and many other prerequisites of modern industrial development.

There was, however, one blight on this shining portrait: the economy of the Netherlands was victimized by a relatively high redistribution of income. The ruling authorities incurred enormous public debt.

14. I wonder whether undue attention has not been given to the magnitude of the savings ratio at the expense of the form that savings take. Savings may well have been at least as large a fraction of income in the Middle Ages as in modern times; they then in considerable measure, perhaps in major part, took the form of cathedrals, which, however productive of ultimate satisfaction and of social security in more than one sense of that term, were not productive of worldly goods. I understand that budget studies for India, which at first sight seem to give very different results from corresponding studies for the United States, are found largely to duplicate the latter if the category ‘ornaments’ is interpreted as savings or, in the jargon of budget studies, as ‘net changes in assets and liabilities.’ The East was for long regarded as a ‘sink’ for the precious metals, surely evidence both of substantial savings and of the particular form that it took. Perhaps the crucial role that has been assigned to the savings ratio in economic development should be assigned instead to the factors determining the form in which wealth is accumulated: to the investment rather than savings process, as it were.” Milton Friedman, A Theory of the Consumption Function (Princeton, N.J.: Princeton University Press, 1957), p. 236.


in order to finance Holland’s defense against Spain, England, and others, but especially to underwrite the growth of its overseas empire. High taxes that were imposed, often levied ad hoc in direct violation of Smith’s maxim, thwarting the growth of large-scale private capital formation.  

Let’s be clear. For more than a century, the Dutch enjoyed the world’s highest living standards. Dutch shipping ruled the seas. But the foundation of private income on which this great prosperity rested was at chronic risk due to the absence of an orderly system of public finance, and which would be its ultimate undoing when England chose to challenge Holland in a battle for global preeminence.

One of the main obstacles to orderly Dutch public finance and a severe disincentive to economic development was the hidden subsidization of the Dutch East India Company. Vereenigde Oost-Indische Compagnie (the United East India Company) was a huge private central planning agency, a joint-stock franchise monopoly. It operated forced production plantations across the Dutch Empire, from Indonesia to Ceylon to Malaya. It acquired monopoly rights on trading in spices, rice, coffee, sugar, tea, silk, porcelain, and cotton. Its monopoly right on cotton was crucial for Holland’s failure not to develop the most important industry of the day, textiles. Through convoluted arrangements, the company shipped high-tariff goods duty-free and thus shared (or rather did not share) tax revenues with the government. High commodity prices, due to high tariffs which were privatized by the company, reduced the demand for finished goods, which forestalled viable textile and other industries.

In one breath, the Dutch East India Company gave its owners an enormous private gain, but inflicted an even larger public loss on the Dutch economy as a whole. Individuals of wealth and moderate means invested in the firm, rather than in industrial innovation. The Dutch East India Company attracted

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a large measure of Dutch human resources\textsuperscript{19} and Dutch financial resources.\textsuperscript{20} This was among the greatest misallocations of investment before Soviet central planning. In our view, it became an Invisible Handcuff on the ability of the Netherlands to sustain its prosperity. In the end, Holland yielded both its naval and economic pre-eminence to England, and, most importantly, it fell behind in economic development. It retained the Spice Islands (Indonesia), several small Caribbean islands, and a sliver of land in South America, but was otherwise unimportant in global affairs until the second half of the twentieth century. In the language of Chapter 1, the Dutch East India Company was a precursor to the enterprise network socialism that emerged in Russia in the early 1990s. It took over fiscal and monetary policy by securing for itself, through monopoly rights and subsidies, revenue that precluded the establishment of orderly, separable public income. As J.S. Furnivall wrote in his great work, \textit{Netherlands India:}

\begin{quote}
\begin{center}
\textit{Fall of the Company}....From the beginning the accountancy [of the Company] had been defective; books were kept in India and also in Europe, but the two sets were never balanced. Then, when tribute took the place of trade as the main source of income, no distinction was drawn between the revenue of the Company as sovereign and its profits as trader, and no adequate provision was made for its expenditure as a sovereign power in war charges and administration.\textsuperscript{21}
\end{center}
\end{quote}

England exhibited some parallels to Holland with regard to overseas trade. From the late sixteenth century, most overseas trade was restricted to members of specific overseas trading companies to which the Crown granted monopoly rights in specific regions.\textsuperscript{22} Among the famous companies were the Merchant Adventurers (active in northern and eastern Europe), the Levant Company (founded in 1581), the East India Company (1600), which was not entirely abolished until 1858, the Royal African Company (rechartered in 1660), the several North American colonization companies—Virginia, Plymouth, Hudson Bay—and the South Sea Company. At the time it was widely believed that commercial development would occur only if reasonable guarantees were given that those who took great risks would enjoy the profits. Some trading companies even became colonial powers in their own right when they established

\textsuperscript{19}Despite large migrations from poorer Flanders, Germany, and Scandinavia, the Dutch population declined in the second half of the seventeenth century and the eighteenth century, due both to a secular rise in mortality and to emigration to the Dutch East India Company’s empire of one million young men, most of whom died at sea or in Java. Jan de Vries, “The Population and Economy of the Preindustrial Netherlands,” in Roger S. Schofield and E. Anthony Wrigley, eds., \textit{Population and Economy: Population and History from the Traditional to the Modern World} (Cambridge and New York: Cambridge University Press, 1986), pp. 108-109, 116-117.

\textsuperscript{20}In addition to subsidies, the Dutch East India Company built up large debt in order to pay high dividends to shareholders (18 percent per year for 197 years), high salaries to managers, and high bribes to custom and other officials. One author suggested that the company’s logo, VOC, standing for Vereenigde Oost-Indische Compagnie, came to be read as Vergaan onder Corruptie (Perished by Corruption). See J.S. Furnivall, \textit{Netherlands India}, p. 49.

\textsuperscript{21}Ibid., p. 48.

\textsuperscript{22}J. Walker, \textit{British Economic and Social History} (London: Macdonald & Evans, 1968), pp. 88-92.
and governed settlements in North America, Africa, and India. Although several companies persisted into the nineteenth century, most, especially those in North America, financed as they were by joint-stock companies with unlimited liabilities, not by subsidies, were small, short-lived, and mainly defunct in the early seventeenth century. Those which persisted into the nineteenth century ultimately were taken over by the Crown, most notably the East India Company, and ceased to overtake the government in control over taxes derived from foreign trading.

In contrast with the lesser impact of royally chartered English trading companies on the developing, industrialized British economy, the Dutch East India Company, perhaps the most powerful agent in the Dutch economy, lasted for almost 200 years and only collapsed in the late 18th century. The government shut it down exactly when England industrialized. Only thereafter could Holland reallocate financial and human resources and started gradually to catch up with England, but still industrialized later than Germany.

The story of the Dutch Golden Age illustrates the difference between the two perspectives on the market economy, viz., free exchange and private income. From the standpoint of free exchange, Holland was a nascent market economy; from that of private income, Holland was largely a mercantile economy with segments of private income, but one heavily burdened with socialism. From the first standpoint, Holland might have been on the cusp of the Industrial Revolution; from the second, it had a long way to go and first had to break up its redistributive chains—chains in more than one sense of the word.

Holland was the most advanced of the pre-industrial economies, but it was not alone as an economy exhibiting the features of markets. Centuries before the Industrial Revolution started in England, markets emerged in such civilizations as ancient Athens, Rhodes, Phoenicia, Rome, and Ptolemaic Alexandria, in parts of medieval Africa North and South of Sahara, in Indonesia in the tenth and eleventh centuries, in Southeast Asia and throughout the Indian ocean in the thirteenth century, throughout the Hanseatic League cities, in Italian city-states, in Flanders, culminating in the great prosperity of Antwerp.

23 Alvin Rabushka, From Adam Smith to the Wealth of America (New Brunswick, N.J. and Oxford, U.K.: Transaction Books, 1985), p. 9. The Navigation Acts, which were finally repealed in 1849, were based on a series of laws dating back to 1381, but which were significantly expanded in scope in 1650 for the express purpose of injuring Dutch commerce and merchant marine strength. The Act of 1650 banned the carrying of goods from any English colony in foreign ships. The Navigation Act of 1660 defined English ships as those built in England, Ireland (excluded after 1670), or the colonies, which were manned by an English captain and had a minimum of three-quarters English crew. England specifically prohibited the import of certain staples from the Netherlands on any vessel. Nor could any foreign-built ship become English by purchase. Historians do not universally agree that the anti-Dutch effects of these laws were successful. J.R. McCulloch, in his essay on the commerce of Holland published in his Treatise on Economic Policy, argues, instead, that the decline of Dutch maritime power was not due to English navigation laws, but to excessive taxation within Holland itself. Cited in Sidney Buxton, Finance and Politics: An Historical Study, 1783-1885, vol. I (London: Murray, 1888), p. 113.

24 John Hicks notes that a mercantile economy and free exchange by themselves are not sufficient for creating incentives for economic growth and industrial innovation. See John Hicks, A Theory of Economic History, pp. 37-38.
in the Dutch Republic, and other places. In the terminology of Adam Smith, these were the mercantile economies. They had significant segments of private, internalized income: (1) between producers and consumers; (2) between producers along the value-added chains; (3) between producers and traders; (4) between lenders and borrowers; (5) between landlords and tenants; and, (6) between employers and wage workers. On these foundations, the mercantile economies made a limited number of technological advances, created financial arrangements for trade, built impressive infrastructure, and developed pockets of factory-scale handicraft manufacturing. But they did not make a breakthrough from these foundations to investment in mechanized production. The absence of orderly public income did not allow people to sufficiently internalize profits as private returns on capital. This, in turn, thwarted incentives to substitute capital for labor, to invest in plant, equipment, and technology. The absence of orderly public income also prevented capital formation and financial intermediation for this investment.

We can combine the insights of Peter Dickson, John Hicks, Douglass North, and David Landes, among others, and the evidence on the emergence of public and private finance. The development of a well-defined separation between public and private income solidified each of them on their own. Neither can exist jointly, that is, if private and public income are fused, but, at the same time, neither can exist on a substantial aggregate scale without the other. This relationship constituted the foundation of private income as the two separable systems of public and private finance. Public finance is non-confiscatory, private finance is non-trespassable. Both are private systems, internal to the government and to the private sector, respectively. They secure internalization of income on the part of asset owners and

For an enlightening discussion, see Carlo M. Cipolla, Before the Industrial Revolution: European Society and Economy, 1000-1700 (New York: W.W. Norton, 1980); Jack A. Goldstone, “The Problem of the Early Modern World,” Journal of the Economic and Social History of the Orient 41, no. 3 (1998): 249-284; and, David S. Landes, The Wealth and Poverty of Nations. For a list of historical instances of economic freedom, which includes those mentioned in the text and others, see Alvin Rabushka, Hong Kong: A Study in Economic Freedom (Chicago: Graduate School of Business, University of Chicago, 1979), pp. 102-121


Ancient Rome during the late Republic and early Empire seemed to have come close. Its infrastructure and standard of living remained unsurpassed in Europe, and probably in the world for a thousand years (some historians of medieval China may dispute this). But the Roman fiscal system grew confiscatory and redistributive. See John Hicks, A Theory of Economic History, pp. 87-88 and Charles Adams, For Good and Evil. The Impact of Taxes on the Course of Civilization (London, New York, and Lanham: Madison Books, 1993), pp. 71-120. In addition, slavery minimized the role of profit in the narrow sense of return on additional capital substituting for labor. It is illuminating that the Romans, who built sophisticated bridges and aqueducts, did not know the wheelbarrow, the horseshoe, and the horse collar, all invented in eleventh century Europe (the Chinese invented wheelbarrows and discovered coal fuel in the fifth century A.D.). The Romans, in contrast, had draft people and did not need hauling equipment and draft animals. The Romans did not have widespread wages and thus profits. In contrast, and more than any other country in Europe, England had wages very early throughout the economy, thanks in particular to its unique system of life-cycle service, wherein peasant youth (of both sexes) served as farmhands in other peasant households. See Peter Laslett and Richard Wall, Household and Family in Past Time (Cambridge, U.K.: Cambridge University Press, 1972). Wages thus existed not only between landlords and peasants and between employers and day laborers but also between peasant households, resulting in a comprehensive labor market.
As recently as 1929, spending and taxes at all levels of government in the U.S. only consumed about 10 percent of GDP. The rapid expansion of American government began during the Great Depression and continued into and after World War II.

The historical role of the Parliament in setting England and, later, the U.S., apart in economic development is crucial. Douglass C. North relentlessly makes this point. The Parliament, representative of numerous local interests, converged with federalism, which also played a key role in limiting the economic power of the central executive. See Barry R. Weingast, “The Economic Role of Political Institutions.” Peter Dickson sees the historic divide between England and France in that the latter did not have an effective Parliament. See Peter G.M. Dickson, The Financial workers—private profit and private wages, respectively. To depict this relationship:

<table>
<thead>
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<th>Private income</th>
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The stylized historical origination seems to have run like this:

Private Wage —> Private Profit —> Public Finance —> Private Finance

When the real wage rates increased in England (as in Holland before it), substitution of additional capital for labor became profitable. But this risky investment required privateness, internalization of returns—in short, private profit. This, of course, meant after-tax profit, free of confiscation and separable from public income. Subsequent political developments produced separable public finance, which begot private finance, which realized private investment in mass production and technological innovation. In a complementary development, Britain’s great industrial development and rise to global prominence took place against a backdrop of declining taxes and government spending. Similarly, the emergence of the United States as a great economic power occurred as spending and taxes by all levels of government—federal, state, and local—consumed less than a tenth of GDP, leaving the bulk of resources in private hands for investment, which were fully internalized as profits to those who undertook the great economic investments of the day.  

The key angle of this story, and its paradox, laid out by Adam Smith is that orderly public finance was a necessary condition for private finance and private profit and thus for the existence of private income in its entirety. Indeed, how else could private income be established and sustained if not by making public income separable, non-confiscatory, internalized by the government, and thus private-like? The desire of individuals to internalize their income for themselves and their offspring is natural. But predation is also natural, and, all other things being equal, predation and redistribution tend to prevail. Either predatory private interests or the predatory government, or a combination of the two, take over, as they have done throughout history. Common law contributed its part in establishing private income to people’s desires, but the ultimate step belongs to the government, specifically to the Parliament, in setting orderly, non-confiscatory and non-redistributive public finance. This measure enabled people to internalize returns on

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28 As recently as 1929, spending and taxes at all levels of government in the U.S. only consumed about 10 percent of GDP. The rapid expansion of American government began during the Great Depression and continued into and after World War II.

29 The historical role of the Parliament in setting England and, later, the U.S., apart in economic development is crucial. Douglass C. North relentlessly makes this point. The Parliament, representative of numerous local interests, converged with federalism, which also played a key role in limiting the economic power of the central executive. See Barry R. Weingast, “The Economic Role of Political Institutions.” Peter Dickson sees the historic divide between England and France in that the latter did not have an effective Parliament. See Peter G.M. Dickson, The Financial
their labor, capital, and land, permitting private finance to function effectively. The foundation of private income as an element in the great prosperity of first Britain and then the West in general was public income in the sense of internal and separable income of the government.

Is the Government with Separable Public Income a Private Enterprise?

How would the government function under pure private income, including its own separable public income? We will show shortly that pure private income and the total separation of public income are not feasible in the real world. But many market economies in the past, and some still, exhibit a sufficient degree of private income to make the above question pertinent.

The paradox of government is that it was invented by individuals to protect their income and wealth from predators, but the government itself can become the predator that was its purpose to prevent. Therefore, the problem of government was how to make it protect private income comprehensively, including from the government itself. This has been an inherent, perennial problem. What other solution can there be but a fiscal straightjacket, the financial isolation of the government, which rigidly separates public and private income from each other? The English found this unique solution in the development of orderly public finance. In so doing, they largely solved the problem of government, and, thereby, the problem of ultimate protection of private income. This was arguably the most important human invention in the social sphere since the invention of money and government itself. But this was only the first part of the solution, even if necessary for the also important second part.

The doctrine of limited government reflected this invention. In the particular context of the time, it joined together two dimensions: that of the government, ranging from small to big, and that of income, on a continuum from private to common. The correct form and amount of government is embodied in the combination of private income and small, or limited, government. But the founding thinkers, such as John

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Revolution, p. 14. However, France started to catch up in the second quarter of the nineteenth century. The famous caricature by Honore Daumier depicts King Louis Philippe as a beggar with his finance minister Adolphe Thiers as a monkey carrying a collection plate before the members of the National Assembly. This was the new order of things, which at the time appeared farcical to the French but would have looked nondescript—certainly not worthy a caricature—to the English. In this light, it is ironic that Western policy makers strongly supported in the 1990s the concerted efforts of the Russian executive branch to destroy the Parliament as an institution and to monopolize economic policy—of course, in the name of market reform. The cause is always good. It is the consequences that fail.

Invention of the government for protection does not contradict the fact that most governments in history have been imposed by force. It is the government as an organization that was invented, so that, using the terms of Mancur Olson, a stationary bandit replaced roving bandits, which, in many cases, was an improvement. See Mancur Olson, Power and Prosperity: Outgrowing Communist and Capitalist Dictatorships (New York, N.Y.: Basic Books, 2000).
Locke, Francis Bacon, John Milton, Adam Smith, and others, had explored each dimension separately.\textsuperscript{31} The doctrine of limited government did not mean just a small government; it meant first and foremost a separable government.\textsuperscript{32} Only later was this context of separation of public income from income of the firms and household lost. The doctrine of limited government was reduced to one dimension, a mere size, regardless of the extent of socialism in the economy. The object of this chapter is to restore the notion of the government in the economy with its own private income to its initial sense.

The government as an organization with its own, separable income, which it has to earn from the public as payment for services, and with its own expense (which it has to match with income and with the ability to raise returnable debt) functions in the financial sense like a separable, private enterprise. It is not private in the sense of ownership—indeed, it is a public enterprise, and the enterprise of the public. But it is private in the sense of income because it internalizes revenues and expenses. That this enterprise does not make profit does not change the nature of internalization. The absence of profit results from the fact that the public is both the owner of the enterprise and the user of its services, and does not want it to make profit. This is similar to the case of a publicly-owned private corporation which is also a public utility, a concession, a franchise, with fully overlapping ownership and service. Representative government acting as such a concession charges agreed-upon payments and user fees for public services rendered.\textsuperscript{33}

Although the government is a public institution and everyone uses the term public finance, its income is private when it is both non-confiscatory and impregnable to confiscation and redistribution by other private parties. As in the case of a publicly-owned private corporation, households and firms do not enjoy open access to its revenues. The veritable label “Private property. No trespassing” applies. The signs posted on fenced-off government sites in Hong Kong, for example, read “Government Property. Keep Out,” even though the property was acquired with taxpayers’ funds. Public finance, or government finance, is, in effect, the private, exclusive finance of the government. The taxes and fees collected by the government belong exclusively to it as a corporate-like entity. It is not a treasure chest to be raided by private individuals and enterprises, as we observed in the case of Russia and similar countries. In this vein, the income that accrues to the government, even though it is a public entity, has the same properties as private income. It is specific in the sense of being earned for services, exclusive from intruders, and internal. But there is also a big difference in outcomes, as we argue throughout this book, between an economy in which the government’s internal income reaches or exceeds half of GDP and one that collects a far smaller

\textsuperscript{31}Chapter 8 continues this discussion.

\textsuperscript{32}This approach further developed in American constitutionalism. On the crucial role of constitutional rules, as opposed to discretion, to build the wall against redistribution, see James M. Buchanan and Gordon Tullock, \textit{The Calculus of Consent: Logical Foundations of Constitutional Democracy} (Ann Arbor: University of Michigan Press, 1962) and James M. Buchanan, \textit{The Limits of Liberty: Between Anarchy and Leviathan} (Chicago: The University of Chicago Press, 1975).

\textsuperscript{33}For a pioneering treatment, see Frederick C. Lane, \textit{Profits from Power: Readings in Protection Rent and Violence-Controlling Enterprises} (Albany: State University of New York Press, 1979).
viewing the government as a publicly-owned, corporate public utility is another way of expressing Adam Smith’s notion of the government as the manager of a private estate serving joint tenants. Similar to a corporation, investors (taxpayers) have placed their funds (taxes) in exchange for shares, although the shares are not tradeable as taxpayers cannot sell their citizenship to foreigners. Shareholders (taxpayers) are the owners of the corporation (government). In exchange for their funds, shareholders expect to receive a return (public services) on their investment (taxes). As with a public utility, its technical monopoly naturally rests on decreasing costs of providing public services. The government can enforce a natural monopoly in the business of enforcement. But democratic elections make this public utility competitive and make the fees it charges the public, contractual and limited by users (taxpayers). The famous formula by Edwin Chadwick about the concession applies: If competition within the field of service is impossible, competition for the field solves the problem of monopoly and price.  

Paradoxically, this view of the government as a publicly-owned private franchise (public utility) converges with the line of thought which sees the government as an obsolete and offensive organization and invents various ingenious schemes for private providers of public services to replace the government. From the perspective of the government as private enterprise with private income, it is the term “government,” not its function, that is obsolete and offensive. People of separable, private means are not governed; rather, they own a public utility concession and are served for a price, on contract. The government need not be either deified or demonized, only franchised and audited. If the private nature of public income and the competitive assignment of the concession are the rules, the government and the private contractor (concessioner) converge.  

This is not, by far, what public income is today in Western market economies. This is not what it has typically been in practice. This is what it was meant to be when it originated at the time of John Locke, Adam Smith, and the Founders of the American Republic. But the invisible private core of orderly public

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35 It is fitting that in the U.S., historically, ministers are called secretaries and the chief executive officer, president. Even the word governor does not have its cockney connotation because it emphasizes the precedence of the states.

36 Actually, they can converge not only in the sense of providing contractual services at an orderly price on a competitive basis, but also in the sense of predation, redistribution, monopoly pricing, cheating, overcharging, contract welching, bureaucratic overspending on wasteful projects and on itself, and abuse of power. The opportunities for predation are the same for the representative government and a private contractor. The classic example of the latter is the Vereenigde Oost-Indische Compagnie, the Dutch United East India Company, mentioned earlier. It ruled the Indies (today’s Indonesia, Sri Lanka, Malaysia, and other countries) in 1602-1799 on the charter of the Dutch Republic and established central planning there.
income remains intact today. Without this invisible core, Western market economies would not have survived the socialist tides of the twentieth century.

Self-Limitation and Self-Preservation of Private Income

In the real world of Western market economies, every government is bigger than warranted by its initial contractual functions. More importantly, every government is redistributive to one or another degree and every public income takes a bite out of private income. This does not mean that identification of government with socialism stands. This rather means that socialist segments, segments of common income, are present in every Western market economy. Their development may work through the government, embodied in excessive taxation and a panoply of subsidies and bailouts, and through private predation not sufficiently repelled by the government. Thus the real Western market countries exist along the dimension of private and common income with the private core and common segments.\textsuperscript{37} Market economies lie on a continuum.

In addition, as we mentioned in the previous chapter, the market has natural limitations. It does not cover the total area of economic activity. Not all costs can be internalized, especially those associated with information gaps, excessive risks, uncertainty, and insurance, like the so-called moral hazard in banking and other spillover effects.\textsuperscript{38} These circumstances often lead to government bailouts and other soft subsidies. Not all benefits can be internalized, as in the case of scientific discoveries, technological improvements, and contributions of educated people to society, because ideas become available in the public domain. This leads to under-production of these goods and, paradoxically, does require a remedial social subsidy. The literature employs such fitting terms as externality and public goods effects to describe this class of phenomena (as opposed to internalization and privateness of payoffs and costs) and also an unfortunate term “market failure,” as if the market has failed, whereas it simply fails to encompass actions whose gains and costs cannot be internalized.\textsuperscript{39} This confirms our chosen narrow definition of the market

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\textsuperscript{37}We will pursue the discussion of these issues in Chapter 5.
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\textsuperscript{39}As a rule, markets automatically create only those institutions whose gains can be sufficiently (even if not fully) internalized by private agents. Examples include money, trade credit, the bill of exchange, credit and banking, etc. Markets call upon the government to create institutions with large social and relatively small private gains, like markets call upon scientists and engineers to create new technologies. So the market creates institutions indirectly, through the demand transmitted to the government. If one does not view market and government as the dichotomy, the problem disappears. When the limited liability corporation was established by an act of the state of New York in 1811, contemporaries, notably The Economist of London, objected to this as government intrusion. They argued that if the market wanted limited liability it would have created it automatically. A counter-argument is, if markets did not want limited liability, they could have easily negated government action: Creditors would simply not lend to limited liability
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as free, voluntary exchange with private, internalized income only—not any free exchange. In the cases of externalities people face natural socialization. Excessive taxation and subsidies in Western market economies constitute man-made socialization and a true failure of public income to stay private and separable.

This raises another paradox of private income, namely, its self-limitation. The self-limitation derives from the fact that private income requires for its existence a foundation of public income. But the growth of public income acquires momentum of its own and leads, ineluctably, to a partial undoing of private income. The downside of private income is the natural continuation of its upside, a catch-22-like circle. This stems from two different, but overlapping, developments:

1. Representative democracy solidified numerous local and sectoral interests. It converged federalism with Parliamentarism. These forces established public income, which separated public and private finance. This engendered private income and the market economy. The resulting economic growth and prosperity increased both the scope and power of sectoral and local interests. These interests promoted various redistributive legislation to benefit themselves. Segments of common income spread across the entire body of the market economy. Successful rent-seeking amounts to appropriation of income from households beyond those contractually-implied payments for public services. It is, in short, socialization beyond the social contract. It undermines the private capacity of public income. The failure of representative government to fully sustain separability of public and private income and full separability of all private incomes is natural. It results from inefficiencies in the democratic process of aggregating individual preferences into a public choice. Gary S. Becker dissected the mechanism of concentrated benefits and diffused costs: Benefits from income redistribution are large for pressure groups and are worth fighting for, while fiscal and other costs spread across the society and are small for the average taxpayer and consumer, are not worth opposing. Public income becomes redistributed and private income partially socialized.

2. Growth and prosperity enlarge the middle class. It becomes the majority in society. It uses its political power to enact and expand an array of redistributive programs of which it is the principal beneficiary at the expense of higher and lower income groups. This phenomenon is known as

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40See Barry R. Weingast, “The Economic Role of Political Institutions.”

Director’s Law of Public Income Redistribution. This created a system of income transfers, which has been mislabeled the Welfare State. The latter includes numerous sectoral subsidies and preferential regulations, popularly known as corporate welfare. They represent a form of stealth confiscation and may absorb significant amounts of GDP, as in the Scandinavian countries and many other Western European democracies, where the governments routinely tax and spend half, and sometimes more than half, of the national income. Given the scope of the political interests behind the Welfare State it is not surprising that income redistribution in many Western market countries reached such exorbitant levels.

Thus public income in its private, separable capacity proves to be an inherently weak institution. It is vulnerable to politics. This sets an evolutionary limit on private income and prevents its complete permeation of Western market economies. However, the same developments create a self-preservation mechanism of private income. At some point, segments of common income and the Welfare State are stalled and even rolled back.

1. Diffuse costs become sufficiently large for the majority to fight against sectoral subsidies. The expected benefits of globalization and universal free markets add opportunity costs and strengthen the fight.

2. The further growth of the middle class turns the Welfare State into a perpetual motion of redistribution among an essentially homogeneous population—a self-defeating proposition. People realize that their net benefits are nil whereas their opportunity costs, in terms of foregone economic growth and prosperity, due to economic distortions, are considerable.

In the U.S., Great Britain, Continental Europe, and even Scandinavian countries, the growth of socialization of income has been significantly reduced in the last two decades and rolled back in some cases. The emergence of the new, information-based economy both makes people more independent of the government and uproots some entrenched vested interests. This may give further momentum to the rollback of segments of common income in Western market economies. Although public income as a private institution is weak, private income as a system is viable, enduring, and indeed interminable.

But there are no stable laws of disequilibrium dynamics. By that we mean that forces can emerge which enlarge the scope and size of government for a considerable length of time; or, which shrink government. The former occurred during the twentieth century, when the level of government spending in the U.S. rose from a tenth of GDP in 1929 to a third of GDP after World War II, and in Europe when the

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43This is why James M. Buchanan’s quest for constitutional rule is so crucial. See James M. Buchanan, The Limits of Liberty: Between Anarchy and Leviathan.
The postwar size of government grew to half or more of GDP. There is nothing intrinsically stable about government taxing at 10 percent, 33 percent, 50 percent, or indeed 70 percent of GDP. But the trends described in the above paragraphs have, for the moment, produced a relative measure of stability in the size of government in the Western industrial democracies.

A Reference on the Role of Public Finance and Private Finance in Economic Development

The experience of countries that recently became successful market economies seems to conform, for all the variety of specific policies, to the pattern found in eighteenth-century England. Our understanding of extensive work by Ronald I. McKinnon on the order of building market economies in East Asian and Latin American countries in the 1960s-80s is that creating viable public finance was the key to establishing private finance. McKinnon points to ending financial repression and other predatory practices of the government as a key to subsequent economic growth. Financial repression amply summarizes the predatory activities of the government. It suppressed returns on private savings by depleting the value of money balances through inflation, by putting caps on lending interest rates and thus on deposit interest rates, and by diverting investment from more productive to less productive uses. Ross Levine in a detailed overview of studies and evidence on broad cross-country experience in recent decades emphasizes the crucial role of developing private financial markets.

The Paradox of Private Income after Central Planning

Successful post-Communist countries discovered, by design, chance, or evolutionary logic, that public income must be separated from enterprises. In China, Vietnam, Myanmar, and, to a lesser extent, Poland, Slovenia, Slovakia, Hungary, and the Czech Republic, the government broke up the inherited enterprise network and established a measure of private income. We observed this development in Chapter 2. We can now discuss the principal policies applied to this end.

The methods of creating private, separable public income were stunning, if not damning, from the conventional perspective. Countries built market economies by applying apparently anti-market policies. They were stalling liberalization and privatization and even—in Eastern Europe, of all places—started with

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44 Ronald I. McKinnon, *The Order of Economic Liberalization.*


de-liberalization and de facto de-nationalization, thereby rolling back the partial liberal reforms of the 1980s. This is a muted subject, although the documentation is in the public domain, and serious literature exists. The principal task was not to open up free markets—that was relatively trivial—but rather to accomplish this in such a way as to close down common access to public income after the abolition of central planning. The latter task was non-trivial, indeed Herculean, due to the power of the enterprise network and lack of precedents and learning. This task required impious and blasphemous measures. What follows is a set of policies that were relatively successful in unleashing the productive potential of real market forces.

1. **Split the economy apart.** Instead of blanket reform, instead of opening up a unified, free market, the government promoted the new-entrant private sector (as well as the old private sector if it existed); at the same time, it set aside the preexisting sector and kept it under stringent financial and ownership controls. This broke up the enterprise network before it could emerge. Instead of reforming, liberalizing, and privatizing the old sector, the government rather phased it out and

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48 How could Eastern European countries get away with this? Forty years of subjugated experience begot skill. They treated the U.S. Treasury and the IMF the same way they treated the Soviet government and the Comintern in the past: said one thing and did the other. Because of their publicly sworn allegiance to the orthodoxy, the IMF now can (and does) take credit for their partial success. In fairness, the IMF and other parties and research groups involved were intellectually flexible and adopted as their own some of the policies introduced in China, Poland, and elsewhere, such as the emphasis on the new-entrant private sector, which we discussed in Chapter 2.

49 Hereinafter we draw heavily on a marvelous compendium of policies across post-Communist economies in Europe and Asia presented in Ian Jeffries, *Socialist Economies and the Transition to the Market.*
phased in the new sector with private income.\textsuperscript{50}

2. \textit{Retain and reinforce state banking for the preexisting major enterprises.} It is hard, indeed impossible, for enterprises to practice tax non-remittance when the state banking system automatically seizes and remits profits and tax liabilities of state-owned enterprises. This puts a powerful constraint on the ability of liberated enterprises, even after price decontrol, to enforce the tax subsidy, which, in turn, makes excess invoices a self-defeating proposition. Note that reinforcement of state banking in Eastern Europe in 1990 and thereafter for the purposes of automatic remittance of profits and taxes represented in some countries a rollback of liberal reforms of the 1980s. The government in the 1980s allowed enterprises to retain profits in expectation of creating productive incentives. But the government continued to subsidize the purchase of inputs through the soft budget constraint. This combination, instead of stimulating production, led enterprises to maximize subsidies for converting them into wages and managerial bonuses. Before this liberalization, enterprises could use subsidies only for inputs, not for consumption, because the government, through the state banking system, automatically remitted profits and taxes. In addition, wage controls secured government profits. Liberalization of the 1980s ruined public finance and ended up in extreme inflations. It is a widespread illusion that money and banking under central planning played a minor role and served accounting and payment purposes only. On the contrary, they played a major role, although quite different from that in market economies. Money monitored and enforced production\textsuperscript{51} and the state banking system monitored and enforced the fiscal rights of the government as both the tax authority and the residual claimant of profits as the owner of assets. Reinforcement of state banking in the early 1990s allowed the government to minimize subsidies after the abolition of central planning and to repel the tax subsidy, thus establishing a relative degree of orderly and separable public finance.

3. \textit{Impose credit ceilings.} These were quantitative credit quotas specific to banks and enterprises. They did not allow commercial banks and even private banks to lend above the cap. This precluded the transmission of central bank credit to enterprises as part of the tax subsidy to fully match their excess invoices. Recall that central bank credit is issued and transmitted to enterprises through the banking system to substitute for tax non-remittance (that is, to ensure tax remittance) in critical fiscal situations. Thereby, even though the central bank continued to print excessive money and provide inflationary credit to the banking system for the enterprise sector, as well as monetize government budget deficits, enterprises could not enforce the tax subsidy. In combination

\textsuperscript{50}Ironically, although this story immediately associates with China and, to a lesser extent, Poland, the most consistent protagonist was Germany after unification, with respect to enterprises in its Neue Landers. For an excellent discussion see Diane Glikmanas. “East German Economic Transition: A Challenge to the Economics of Transition?” Unpublished manuscript (Stanford, Ca. and Paris, France, Fall 1997). Estonia accomplished the same policy by default, due to the split along ethnic lines, as we mentioned in Chapter 2.

\textsuperscript{51}See Michael S. Bernstam and Alvin Rabushka, \textit{Fixing Russia’s Banks: A Proposal for Growth} (Stanford, Ca.: Hoover Institution Press, 1998), pp. 23-25. We will discuss this matter in detail in Chapter 5.
with the above inability to confiscate tax collection, this thwarted the claims of excess invoices and defeated their purpose. This measure in some countries also comprised a rollback of earlier reforms, which allowed liberal commercial credit, originating, of course, in central bank money printing. Although in Eastern European countries the second and third policies on this list could not be fully enforced, because of the spread of commercial banks, especially private banks, and tax non-remittance was widespread, the government could nonetheless protect and not surrender its fiscal and monetary power. In China, the government simply periodically cracked down on unruly banks and shut many of them down. We never said these measures were subtle.

4. **Close down financial institutions if they pose any danger of passing their liabilities onto the government.** This is an extension of the previous measure. In most Western market and developing economies, the government socializes the debt of failing financial institutions when it bail them out. This happens when the expected spillover effect, such as the loss of deposits and investments, exceeds the bailout costs. Examples range from the savings and loan debacle of the 1980s to the Long-Term Capital Management hedge fund in 1998 to major Japanese banks and insurance companies in the 1990s. Globalization of this practice is exemplified by IMF bailouts during the Asian crisis of 1997 and Brazilian crisis in 1998, which were effectively bailouts of Western lenders. The Chinese government acted counter to this practice, to the annoyance of Western investors. In 1999, it refused to assume the liabilities of Guangdong International Trust and Investment Corporation (GITIC), a failed investment fund owned by the Guangdong provincial government, along with other bankrupt provincial ITICs. Furthermore, it abruptly shut down, without compensation of creditors, most other investment companies which borrowed from Western lenders to finance local ventures. This prevented the creation of a subsidy chain, which could have turned Township and Village Enterprises (TVEs), owned by provincial and local governments, into an enterprise network.

5. **Retain or reimpose wage control.** It restrains the tax subsidy and de-stimulates excess invoicing. Wage control can be direct or indirect, tax-based. If the government retains central planning in the preexisting industrial sector, which it splits from the rest of the economy, as happened in China, direct wage control will do. If central planning is abolished, as in Eastern Europe, it is difficult to enforce wage control by direct administrative means. Then the efficient mechanism is indirect, tax-based wage control. This is a prohibitive, say, 300 percent taxation of wage increases above the government-set baseline.52 Direct or tax-based, wage control in both cases limits the ability of enterprises to pass the tax subsidy onto such specific beneficiaries as workers and managers. This is reinforced in the absence of legal privatization, when managers are not owners and their

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In 2000, after ten years of discouraging wage control wherever possible and de-emphasizing its success elsewhere, the IMF came to recognize its usefulness in view of mounting enterprise arrears and tax arrears and insisted on re-imposition of wage control in Romania. See *The Financial Times*, June 13, 2000. As we mentioned earlier, the IMF, like the Comintern before it, can be flexible.

Compensation is also subject to wage control. In the case of direct wage control, the residual income which constitutes government profit, is enhanced. The government seizes it, and this nullifies the tax subsidy and renders excess invoicing impotent. The effect of indirect wage control is the same. If the government enforces the remittance of taxes levied on wage increases—and it does, or else wage control is meaningless—this remittance offsets the tax subsidy extracted from non-remittance of other taxes. The money is fungible, and through a prohibitive tax the government nullifies the tax subsidy and the benefits of inflated invoices. On top of that, indirect wage control affects enterprises as buyers. Despite the loss of the tax subsidy, managers and owners still increase wages, due to workers’ pressure, because workers become partial de facto owners of state enterprises after the abolition of central planning. Then enterprises have to minimize non-labor costs in order to cope with additional labor costs of punitive taxation for wage increases. Buyers no longer accept inflated invoices from sellers. In all, wage control breaks up the network of counterfeit spending.\(^{53}\) Under wage control, every enterprise is in business for itself, not as part of a network.

6. **Stall privatization until private income acquires critical mass in the economy, over 50 percent of GDP.** When the enterprise network exists, privatization opens more access for enterprises to common income, indeed opens direct enterprise access to public income. Under these conditions, the absence of private owners is a necessary, although not sufficient, condition for denying individuals the gains from the tax subsidy, from acquiring access to public income. Note that a de facto re-nationalization and a rollback of de facto privatization automatically occur when the government re-imposes and enforces remittance of profits on state-owned enterprises. Stalling or rolling back privatization is a direct corollary of the Coase Theorem, applied to common income. The Coase Theorem states that under market conditions (and provided that assets are easily transferrable), property always ends up in the hands of most productive users. This happens because the most productive users are willing to pay the highest price for a given asset, since it is they who can derive the highest return. Therefore, the initial allocation of property rights does not matter because the most productive users will be the ultimate owners.\(^{54}\) It follows that even if there was an initial theft of property, the most productive owners will bid it away from thieves and create wealth for everyone. It also follows that under market conditions asset stripping on the part of legal owners is uneconomical: Why strip assets if they can gain more by selling the firm intact to the most productive (and thus highest paying) users? The corollary to the Coase Theorem states that the rationale changes diametrically if the market economy does not exist and income is common while property is private. Then the value of the asset derives not from its market return but from the

\(^{53}\)In 2000, after ten years of discouraging wage control wherever possible and de-emphasizing its success elsewhere, the IMF came to recognize its usefulness in view of mounting enterprise arrears and tax arrears and insisted on re-imposition of wage control in Romania. See *The Financial Times*, June 13, 2000. As we mentioned earlier, the IMF, like the Comintern before it, can be flexible.

share of redistribution it entails. After the abolition of central planning and in the presence of the inherited enterprise network, the true asset is access to public income, to the tax subsidy. Property rights, ownership of enterprises provide privileged access to common income. Property rights on productive assets become fiscal property rights on the tax subsidy. The corollary to the Coase Theorem states thus: Under enterprise network socialism, property always ends up in the hands of most capable predators on public income, masters of redistribution, subsidy extractors, because they are willing to pay the highest price (apply the greatest force and influence). It follows that stripping productive assets by legal owners is most profitable under these conditions, because it is not from production but from access that they derive their gains. They want to keep the titles to continue to exploit their privileged access to common income and they add asset stripping as a dessert to the main course. It also follows that it matters little how privatization was conducted and what methods were used, which is the subject of a voluminous literature. The best (worst) predators always come on top in the end. China, Vietnam, and other post-Communist countries in Asia, and Poland and Slovenia in Eastern Europe eschewed privatization. They escaped its worst predatory outcomes which befell Russia. To recapitulate, the issue is not the theft of property, because the end is the same even in the case of the cleanest initial assignment of legal rights on assets. The issue is not improper privatization, the issue is that privatization is improper under enterprise access to common income. The issue is predatory natural selection and self-selection of ultimate owners, the surrender of the country to worst predators.

7. **Scrap SLiP.** When a conventional market reform (a package of stabilization, liberalization, and privatization, which we discussed in Chapter 2) begets contraction, do not stay the course, change the policy. Countries that changed direction, as did Poland in 1993, performed much better than those that did not, such as the Czech Republic. It is one of the best-kept secrets of post-Communist experience that the relative success of Poland was due to a fundamental policy shift,

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55See the introduction of this corollary in Michael S. Bernstam and Alvin Rabushka, *Fixing Russia's Banks*, pp. 14-15. The initial theft of assets under common income may appear neutral from the standpoint of eventual efficiency (or inefficiency), but it most definitely is not neutral from the fiscal perspective. What happens when the government gives away assets to predators or allows them to seize assets, instead of, say, using these assets to capitalize retirement accounts, which would ease budgetary pressure in the future, or swap them in exchange for reducing government debt? Either the government has to raise payroll or other taxes to finance its expenditures, which were previously financed by the return on the lost assets, or reduce pensions and perhaps default on debt service. If the government sold these assets to Western investors at market prices and these assets eventually ended up in the hands of domestic predators, it is Western investors, not domestic taxpayers, who would have been robbed. The production (or contraction) effect may be the same, but the fiscal effect is far worse if the predatory seizure of assets takes place in the beginning, not at the end. The production (contraction) effect may actually worsen if a fiscally weakened government compensates its losses by raising taxes or defaulting earlier than it would have otherwise been forced to do.

not to a lagged effect of initial policies; not to continual initial policies but to their discontinuation.\textsuperscript{57} Do not sacrifice growth for reform. There is no such trade-off, given the extent of inherited value subtraction, discussed in Chapter 1. Contrary to the dominant literature, contraction is not an investment in future growth,\textsuperscript{58} it is a pure loss in both the income and asset sense, never recovered. Advocating a second edition of reform, as voiced by the U.S. government and the IMF for Russia, is calling for an accelerated contraction. It is never too late to scrap SLiP, but the sooner the better.

8. \textit{Let economic organizations and property types naturally evolve, self-select, and grow under restricted access to common income and public finance.}\textsuperscript{59} This is probably the most important policy of all. Evolution will naturally select those types of property on productive assets that will adapt to conditions of private income. These will be optimal property types that are least conducive to redistribution of income, socialization, networking, and gaining access to public income. If a country can wipe out the enterprise network in one fell swoop,\textsuperscript{60} private property may be the immediate natural outcome. What type of ownership is optimal under incomplete private income depends on the degree to which the enterprise network is broken up. In Poland, some 30 percent of GDP was produced outside the network even before the abolition of central planning. Such large industries as agriculture and services were already in the private income domain. Although the inherited enterprise network remained in the state sector, its financial claims were constrained by credit ceilings and wage control. New entrants naturally emerged as privately owned firms, filling up various market niches. Most of the new entrants could not join the inherited network and thus, neither by government design nor by deliberate intention, expanded the domain of private income. New entrants started to compete with the inherited enterprise network of the state sector, thereby reducing its share of GDP. This, in turn, strengthened the growth of private income for the next wave of new entrants. A virtuous circle developed. A different serendipity in Estonia led to similar results. Privatization into the hands of foreigners followed the breakup of the enterprise network, which consisted of Russian enterprises and which was razed for political reasons, not as an economic policy design. In other countries, the efficient approach selected itself in China and was reinvented in Vietnam, Myanmar, and elsewhere. Many property types emerged, including shareholding and individually-owned private firms and rural units.\textsuperscript{61} But local government

\textsuperscript{57}For an insightful, insider account see Grzegorz W. Kolodko, \textit{From Shock to Therapy}.


\textsuperscript{59}To mix metaphors, let a hundred flowers blossom (let a hundred schools of thought contend), not just \textit{fleurs du mal}.

\textsuperscript{60}We show in Part Three how to achieve this.

or community ownership prevailed, such as Township and Village Enterprises (TVEs), in China and Vietnam and Cantonment Municipal Enterprises in Myanmar.\textsuperscript{62} Chinese TVEs by themselves set an economic record, turning in about 25 percent growth of output per year and 10 percent annual growth of productivity since the mid-1980s.\textsuperscript{63}

What is their secret? The conventional literature dubs them as halfway houses between state and private property and advocates their convergence with standard private firms.\textsuperscript{64} In our view, they are an organizational species \textit{sui generis}. The secret of TVEs is twofold: Not only do they embody private income, they, of all property types, \textbf{inadvertently established separable public income from scratch.} Consider the effect of provincial and local government ownership when the inherited enterprise network is set aside and kept under central fiscal control:

(a) The central government could not confiscate income of TVEs because they raised revenues for the local governments that owned them. If the central government tried to seize these revenues, it would be stuck with the need to subsidize those local expenditures financed by TVE income. As ever, money is fungible.

(b) The central government could not subsidize TVEs because it did not want to subsidize local governments. It gave them economic freedom to set up TVEs in exchange for fiscal self-sufficiency. The central government closed budget subsidies to outsiders and newcomers such as TVEs, but also precluded allocating state bank credit to them.

(c) TVEs could not join the existing network of state-owned enterprises because the network is blocked from expansion by the central government through such tools as price control, credit ceilings, and wage control, and because, to repeat, the central government did not want to subsidize local government. In effect, a Chinese wall was built around the inherited network. Nor did the network of state enterprises have any incentive to let TVEs join the club. The network would not extend unpaid trade credit and free inputs to TVEs, because state enterprises already receive subsidies (the soft budget constraint) from the government and would rather sell resources


\textsuperscript{63}The World Bank, \textit{From Plan to Market}, p. 51.

\textsuperscript{64}Ibid.
on the open market.

(d) Local governments could not confiscate income of TVEs because they already receive TVEs’ profits as their owners. One does not confiscate one’s own income. Confiscation of more income would amount to decapitalization of TVEs, which would deprive local governments of future revenues. This would amount to killing the goose that lays the golden eggs, and the Chinese much preferred a steady diet of eggs to a one-time feast on roast goose.

(e) Local governments could not subsidize TVEs because local governments derive their revenues from the profits of TVEs, and have no sufficient alternative sources of revenues. The reason that TVEs exist in the first place is to provide income to their local political jurisdictions, not to receive subsidies. If TVEs do not prosper, local governments will shut them down. Managers of TVEs face incentives to perform because, unlike privatized enterprises, there are no preexisting assets to loot. All parties are interested in creating new wealth.

(f) Local governments and TVEs could not establish a new network for extracting subsidies from the central government because they would not survive while they waited for the network to become sufficiently comprehensive to absorb them. As we discussed in Chapter 2, a network with enforcement powers over fiscal and monetary authority can only be inherited.

(g) Self-interest of local governments and TVEs beget competition among themselves for market profits, not collusion for the state subsidy. Local governments can raise capital from local savings and foreign investors, forming local or provincial-level investment funds and using their power to tax as a collateral. Market profits are feasible with relatively little risk. Attempting to secure tax subsidies is more risky. Indeed, in China’s circumstances, TVEs made more sense as a form of ownership than genuinely privately-owned enterprises. Inasmuch as the latter have few assets and limited opportunity to raise capital, they would have greater incentive to make an extra effort to break in into the existing network of state enterprises, to attach themselves to subsidized state enterprises. TVEs rather thrive in the market in dividing production with state-owned enterprises, obtaining inputs from them, and selling some output to them (but mostly to consumers). Their complementarity creates wealth for the entire economy.

(h) It follows, then, that private finance develops after separable public finance. Local governments can raise capital for TVEs because their own income is non-trespassable and credible. This experience of China and similar countries demonstrates that a multi-layer federalism can play a crucial role in separating public income and establishing private finance—a role similar to that in merry old England.65

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The thrust of all these seemingly non-market policies, intentional or not, was (1) to prevent liberalization of the enterprise network and (2) to close access of private interests to public income. All these policies were applied in part and in one or another mix in specific countries. Only to the extent they were applied, did contractions stop or not occur, and growth followed or started instantly. The data presented in figures 2.1 and 2.2 summarize evidence to this effect.

This paradoxical road to the market economy can be viewed from the general perspective of the second best, formulated by Kelvin Lancaster and R.G. Lipsey. They show that in the absence of full markets and in the presence of distortions, market results in particular areas are impossible whatever market policies are applied. Non-market policies constitute the second best and can obtain the best results possible under the circumstances. Market policies, by contrast, can magnify distortions. This is intuitively simple. As in any system, if a crucial link is missing or broken, many others cannot work right. They must be adjusted in a wrong way from the standpoint of the initial equilibrium and system purity, but this is necessary to enable the system to function at all. An alternative is a crash. Case in point: Russia during the 1990s.

The experience of all post-Communist economies shows that the issue is neither speed nor sequence of policies but their thrust. If policies are found for separating public income and establishing private income, they can be applied at once. If they are not found, the policies of liberalization and privatization should not be applied at all, not fast, not slow. Between these two extremes, every successful country found its own mix, its own second-best solutions, and its own speed. If we combine our discussion of the evolution of private income in history with the experience of post-Communist countries, four strategies stand out:

1. Break up the enterprise network and establish orderly, separable public finance.
2. Create a framework for separable, non-trespassable private finance.
3. Assign property rights based on private, internalized income.
4. Liberalize product, labor, and capital markets, but only on the condition of internalization of income.

We discuss in Part Three of our book the details of how to implement these strategies.

Economies Evolve with the Type of Income

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Let us combine the facts discussed in the first four chapters. Economic species evolve and adapt. Economies can evolve from mostly common to mostly private income, as did England after 1688 and China after 1978. To achieve this result, they need to establish a separate fiscal system and separate, private incomes of firms and households. Everything else follows and adapts from these basic, fundamental steps. Going back to redistribution, as practiced by modern welfare states in the 1900s, defeats private income. Economies can also evolve from one species of common income to another. For this, they can increase or reduce the role of the government in the economy. The government can take total control and move from confiscation of relatively free production to forced production under central planning. Or the government can abolish central planning, liberalize, privatize, and surrender fiscal and monetary power to the inherited enterprise network. Reducing the role of the government in the economy under common income does not lead to the market economy. Rather, it creates a new socialist species.

In this chapter, we have sketched the evolution of private income, its origin, and its partial retreat. The next chapter explores various species of common income. We do not claim to present a complete taxonomy, but rather a first approximation. Chapter 6 examines how common income evolves from one species to another. This brings us back to our primary subject, the emergence of enterprise network socialism after central planning, this time from an evolutionary perspective. Chapter 7 tries to combine all previous findings about private and common income economies into a unified taxonomy. Chapter 8 places this story in the context of economic philosophical thought on predatory and productive societies.
Fixing China’s Banks, Not Russia’s

by Michael S. Bernstam and Alvin Rabushka

If a picture is worth a thousand words, what about two pictures? We set them side-by-side in figure 1. Figures 2, 3, and 4 supplement three more pictures.

They encapsulate an eye-catching story of our times. From academics to investment bankers, from governments to New York Times columnists, from philosophers of history to cable news commentators, all Western eyes seem to be focused on a faraway subject, that China is facing a meltdown of its banking system.

Western countries have accorded Russia a market economy and democracy status. They have denied both to China. A viable banking system is a necessary condition of a market economy. This addendum shows how China, not Russia, is developing an advanced, market banking system.

Bad Loans and a Great Evolution

Two themes overlap in this dissection, one specific, the other systemic. The first theme features in The Wall Street Journal, Financial Times, and The Economist. In the 1990s, China encountered a problem of non-performing loans—loans extended by banks to enterprises which became delinquent on paying interest and/or repaying principal—and has been rapidly fixing this problem. Panel A of figure 1 documents this development among China’s four state-owned banks, which command 55 percent of total banking assets.

The second theme is that the rise and fall of non-performing loans in China accompanied an unrivaled financial deepening and economic expansion after the abolition of central planning, in contrast with financial shallowing and economic decline in Russia. Panel B of figure 1 and figures 2 and 3 illustrate these contrasting developments in the global context.

The rise and fall of non-performing loans in China mark financial adaptation in the systemic

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3Gregory C. Chow succinctly put it in his definitive book, China’s Economic Transformation (Malden, MA and Oxford: Blackwell Publishers, 2002), p. 221: “The commercial banks have been providing an outlet for savings during these years in increasing ratios to national income, in spite of institutional weaknesses.” Figure 3 attests to this.
Figure 1. CHINA: NON-PERFORMING LOANS, 2001-2003, AND COMMERCIAL LENDING IN WORLD PERSPECTIVE

Panel A. Non-Performing Loans as a Percentage of Total Loans

Panel B. Commercial Bank Lending to Firms and Households as a Percentage of GDP in Selected Countries


Sources:
Figure 2. LOANABLE FUNDS: BROAD MONEY AS A PERCENTAGE OF GDP, SELECTED COUNTRIES, 2003 OR THE LATEST AVAILABLE YEAR

Notes:
1. Broad money includes currency, demand deposits, savings deposits, and foreign exchange deposits
2. The denominator consists of gross domestic product (GDP) in 2002 or the latest available year

Figure 3. LOANABLE FUNDS:  

Notes:
1. Broad money includes currency, demand deposits, savings deposits, and foreign exchange deposits
2. The numerator constitutes the amount of broad money at the beginning of the year. The denominator constitutes gross domestic product (GDP) in the previous year
3. Due to lack of data, the monetary aggregate M2 instead of broad money is used for Russia in 1990-93. This substitution understates loanable funds in 1990-93.
4. The data for 1990 for Russia are estimated using national income accounts for 1989 and the incomplete monthly series on the money stock in 1990

Sources: IMF, *International Financial Statistics Yearbook*, various years, except for Russia in 1990-93 and 2004, wherein the national official statistics are used
evolution of China’s two-track economy from central planning to the market. Banks separated enterprises and helped break up, forestall, and foreclose their inherited network. In the process, they separated credit from payments and established financial intermediation between households and enterprises. The rise and fall of non-performing loans in Russia (from one percent of total loans in 1991 to 19 percent in 1997 to 3 percent in 2004)\(^4\) accompanied a different evolution after central planning. Russia’s banks do not exist off of and for financial intermediation. They function so as to transmit the subsidy extracted by the enterprise network from the government and the public.\(^5\) Banks share in this subsidy and roll over non-performing loans to facilitate the subsidy flow. In the process, credit was never separated from payments and the banks merely re-intermediate between enterprises. Figure 4 illustrates this divergent evolution in Russia and China.

This addendum will explore and link the two themes. The first section submits a taxonomy of non-performing loans and contrasts China’s and Russia’s financial development. The second section follows credit, payments, and banking in the evolution of economic systems after central planning.

As we suggested throughout *From Predation to Prosperity* (see, e.g., chapters 2, 3, 4, and 5), the contrast between Russia and China opens up a perspective on economic systems and hence on world economies, past and present. Separation between credit and payments, which is the first-order outcome of the rise of financial intermediation in banking, led to emancipation of investment from commerce on the eve of the industrial era. China has long since passed this evolution. Russia left behind industrial central planning but bypassed the world of modern financial intermediation and industrial investment.

### A Taxonomy of Non-Performing Loans

Fixing non-performing loans has a long, creative history.\(^6\) Chinese policy makers found an original and efficient solution for fixing non-performing loans and other banking problems. It may look like creative accounting, and it certainly is, but it is more than that, for it maximizes value on the dollar (or Renminbi), minimizes losses, and wards off relapses.

*Fixing China’s non-performing loans*


\(^5\) For a discussion, see *Fixing Russia’s Banks* and Chapter 1 of *From Predation to Prosperity*.

\(^6\) In Shakespeare’s *Merchant of Venice*, the hostile Antonio offers Shylock surety for a loan of 3,000 ducats to Bassanio for three months: “If thou wilt lend this money, / lend it not as to thy friends (....) / But lend it rather to thine enemy, / Who if he break, thou mayst with better face / Exact the penalty.”
The Chinese solution is threefold.

1. The government recapitalized the four major state-owned commercial banks, the holders of non-performing assets, with $45 billion in foreign exchange assets from the People’s Bank of China (the central bank). This approach preempts the issue of bonds, with its ensuing debt service costs. It also minimizes recidivism (as bailouts invite risky lending and beget new bailouts—what the literature calls “moral hazard”) because domestic bonds can grow on trees but foreign bonds cannot. Foreign bonds cannot be expected to bail out the banks the next time.

2. The government set up four asset management companies (AMCs) in 1999 and swapped banks’ non-performing assets for their debt, on par value, for subsequent disposal at market value. After the discount sale and/or negotiated debt collection from enterprises, the price of AMC bonds will decline commensurate to the AMC reduced capacity to service their debt and redeem their bonds. They will then be able to buy back their debt at a discount and close shop after their mandated 10 years. Better yet, the AMCs could swap enterprise debt for equity and sell this equity, acting as investment banks or venture capitalists. This is an efficient consignment and swap arrangement which minimizes losses.

3. In lieu of uniform regulations, the China Banking Regulatory Commission and the People’s Bank of China refined sector-specific credit restrictions. Bank-specific reserve requirements are linked to the ratio of non-performing loans in the bank’s portfolio. Sector-specific interest rate differentials for commercial banks have been sharpened to restrict risky credit. Bank capital must be raised to 8 percent of loans, which automatically constrains lending. The government will further restrict lending if non-performing loans resurface and erode the equity capital of recapitalized banks. Later in 2004, foreign financial institutions will take stakes in two of the four big state banks. Meanwhile, China has opened its financial markets to competition from 62 major foreign banks which constrain credit by risk assessment.

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7 In 1998, we proposed a similar strategy for Russia’s enterprise payment arrears and similar capital swaps for insolvent banks. See Fixing Russia’s Banks, pp. 91-98.


A conventional triad applied in many countries consists of (1) recapitalization of banks with government bonds and (2) a commensurate negotiation downward, disposal, and write-down of non-performing assets, accompanied by (3) increased regulation. This is a simple swap of good assets for bad assets, at the taxpayers’ expense, while revamped regulation strives to preclude moral hazard and recidivism. Policy (2) partially compensates for the short-term costs of policy (1), while policy (3) addresses the long-term costs of policy (1). This is a typical situation where it is hard to predict whether the cure will turn out to be better than the disease because bailouts tend to reproduce, indeed multiply, non-performing loans (the now-proverbial “moral hazard”).

In contrast, in the Chinese approach, recapitalization is self-contained and moral hazard is thus contained (again, because foreign bonds don’t grow on trees). There is no need to solve the moral hazard consequences of policy (1) with policy (3). The Chinese approach builds-in the safeguards against moral hazard—that is, against policy (1)—within policy (1) itself. This allows policies (2) and (3) to address broader and deeper issues. Both policies lead to restructuring of enterprises, not only banks, and, hence, restructuring of borrowers, not only creditors. Asset Management Companies do not carry fixed liabilities to hundreds of millions of depositors; rather, they carry market-adjustable liabilities to four state-owned banks. They can concentrate on deriving the most value from their newly acquired assets, enterprise non-performing loans, and on streamlining enterprise finances along the way. The conventional triad overhauls banks, the Chinese approach overhauls enterprises along with banks.

A word of caution. China has been fixing its non-performing loans. It is too early to say whether it will have them fully fixed. Overall, according to the China Banking Regulatory Commission, the ratio of non-performing loans to total loans in the entire banking sector fell from 28.0 percent in 1998 to 23.1

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10 Gregory C. Chow proposed an improvement over the conventional policy triad in fixing non-performing loans. In economies with high long-term economic growth (China averaged 9 percent per annum in the last 25 years) and high savings rates, the government can increase the money supply commensurately without causing inflation. Accordingly, the government can recapitalize banks with currency instead of bonds. Currency constitutes government bonds which bear no interest and have infinite maturity, thus never have to be redeemed. When income elasticity of the demand for money balances is about 1.2, as in China, the central bank can issue base money at a growth rate of 11 percent per annum, given a 9 percent growth of real income. This is a zero cost (although there are opportunity costs) recapitalization of banks, eradicating non-performing loans. Chow points out that this approach is not comprehensive for it does not solve the problem of moral hazard and recidivism. Gregory C. Chow, *China’s Economic Transformation*, pp. 229-230.

percent in 2003 to 17.8 percent in 2004.\textsuperscript{12} Panel A of figure 1 displays rapid dissipation of non-performing loans during 2001-2003, from 41.5 percent of total loans of the Agricultural Bank to 37 percent (in 2002), from 30 percent of total loans of Industrial and Commercial Bank to 20.5 percent, from 28.5 percent of total loans of Bank of China to 15.5 percent, and from 20 percent of total loans of China Construction Bank to 10 percent. But this may be a pure accounting result of removing bad assets from the balance sheets of the banks to the balance sheets of AMCs. A timing effect also played a role. A rapid expansion of new loans increases the denominator, total loans, without accounting, as yet, for the amounts that may fail to be repaid and would augment the numerator, non-performing loans. Still, the AMCs have already sold about 30 percent of loans from their portfolio at some 20 cents on the dollar,\textsuperscript{13} and this is not an accounting fluke. In the next two years, AMCs plan to dispose of another 25 percent of these loans. The pace of reconstruction is swift. To adjudicate whether China will have the problem of non-performing loans fixed, one will need to extend this diagram at least three years ahead. If the curves turn upward, the problem resumes. If the curves continue to go downward, the problem has been fixed. This is a straightforward proposition, fully verifiable and falsifiable. In the next few years, one has an opportunity to test a policy against reality.

“\textit{Or lend us gold, and that is perilous}”\textsuperscript{14}

Banking is a risky activity. Banks make money by making up money, one way or another—usually by issuing credit which returns with interest. But borrowers may fail to pay interest and repay debt, and then banks lose money. To lend or not to lend is always the question. But lack of lending means neither business nor profit, so that non-performing loans are always a problem.

Non-performing loans pose at least four dangers, one for bank owners, one for depositors, and two for the economy at large.

1. Owners do not receive a market return on their capital. In the worst case, if the bank fails, owners lose their assets. In modern times, this may affect a broad pool of shareholders.

2. Depositors do not receive a market return on savings. Banks pass their losses onto depositors by suppressing interest rates. In the worst case, if banks fails, depositors lose their assets or any uninsured balance. Banks also redistribute losses to other borrowers by charging higher interest. Lower deposit rates and higher lending rates repress savings and financial markets, which hampers


\textsuperscript{14}Geoffrey Chaucer, The Canterbury Tales, “The Shipman’s Tale.”
3. Non-performing loans epitomize bad investment. They misallocate credit from good projects, which do not receive funding, to failed projects. Bad investment ends up in misallocation of capital and, by extension, labor and natural resources (and may even finance value subtraction, e.g., in Russia\textsuperscript{15}). The economy performs below its production potential.

4. Non-performing loans may spill over the banking system and contract the money stock, which may lead to economic contraction. This spillover effect can channelize through illiquidity or bank insolvency. (a) When many borrowers fail to pay interest, banks may experience liquidity shortages. These shortages can jam payments across the economy exactly like a power plant failure in the Midwest in 2003 caused blackouts in New York and across many states. (b) Illiquidity constrains banks in paying depositors, e.g., cashing their paychecks. Banking panics follow. A run on banks by depositors only amplifies illiquidity. If banks fail, their deposits as part of the national money stock become inoperative. The money stock contracts and economic contraction (recession or depression) follows. (c) Undercapitalized banks become insolvent if the amount of non-performing assets exceeds the banks’ capital base. Subsequent bank failure produces the same contraction effect on the money stock and the economy as described in (b).

It follows that the extent of actual danger of non-performing loans for the economy depends on the overall state and dynamics of loanable funds. If loanable funds of the banking system are large and growing, non-performing loans can be contained. If not, the financial system and the economy fail.

**Loanable funds**

How robust is China’s banking system? As usual, reasonable observers disagree. Gregory C. Chow discerns:

“Is the Chinese banking system in a crisis situation? The answer appears to be no, in spite of the problems and shortcomings of the system (...) People have confidence in the value of their deposits in the banks because they believe that the government owns the banks and implicitly guarantees their deposits. The fact that 20 to 25 percent of total bank loans are bad has not affected this confidence and is not likely to lead to large withdrawals of deposits. Given the high savings rate of the Chinese people and the limited alternatives for their savings, in the decade of the 1990s the ratio of savings deposits to GDP in China was rising (...) Improvement in liquidity in the banking sector was further evidenced by the reduction of its loans-to-deposits ratio from 200 percent in 1991 to 140 percent in 1998 (...) The

\textsuperscript{15}See Chapter 1 of *From Predation to Prosperity*, pp. 23-25.
commercial banks have been providing an outlet for savings during these years in increasing ratios to national income, in spite of institutional weaknesses. (...) The commercial banks have been serving as financial intermediaries.  

*The Economist* advances an opposite view, which is nearly universal in Western intellectual and policy circles:

“Outwardly robust China has a black hole for a heart (...) A developing economy with a broken financial system.”

Who is right? Fortunately, the answer in this case is a matter of fact, not interpretation, a matter of evidence, not eloquence, with clarity seldom shining in the realm of social science and public policy. The data in figures 1, 2, 3, and 4 demonstrate that Chow is right and *The Economist* is wrong.

In the short time span of 25 years, China has developed one of the most advanced banking systems in the world with incredible financial depth. Loanable funds, along with stock market capitalization, are usually employed to evaluate financial depth. The total domestic money stock M2 or M3 (currency plus demand deposits plus savings deposits plus time deposits) or the stock of broad money (M3 plus foreign exchange deposits) approximate loanable funds. The ratio of the money stock M3 or broad money to gross domestic product (GDP) measures financial depth (e.g., in figures 2 and 3). Another indicative measure is the ratio of commercial bank loans to GDP (e.g., in panel B of figure 1). An ultimate measure is the share of savings and time deposits in the money stock M3 (e.g., in figure 4). It shows the depth of financial intermediation in banking—how much credit is available for long-term investment beyond financing short-term payments. By all these measures, China’s financial system is as solid as the Rock of Gibraltar and as good as gold.

Panel B of figure 1 compares commercial bank lending to firms and households as a percentage of GDP in selected countries ca. 2003-2004. Mexico and Russia represent a low bound of the sample, with 15 and 17 percent, respectively. Columbia and Brazil are in the middle, typical for developing countries, with 25 and 36 percent, respectively. Chile, the U.S., and China constitute the upper bound, with 67, 70, and 142 percent, respectively. In fact, China’s depth of commercial bank lending is twice that

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16G. C. Chow, *China’s Economic Transformation*, pp. 72-73, 221. The significance of the last quoted sentence will become apparent at the end of our addendum.

of the U.S.\textsuperscript{18} This puts China in context.

Figure 2 broadens the sample and the context. It plots directly the most widely used measure of financial depth, the ratio of loanable funds to GDP (with loanable funds approximated as broad money), among 37 representative countries at all levels of economic and financial development, in 2003 or the latest available year. The sample readily lends itself to a breakdown into three developmental categories.

\begin{itemize}
  \item \textbf{E}conomies with the ratio of loanable funds to GDP in the range under 30 percent can be viewed as budding financial systems. In our sample, these are Sierra Leone, Nigeria, Burundi, Benin, Mali, Senegal, Botswana, and Mexico. In the unique case of Russia, which fell from 70.0 percent in 1991 to 16.6 percent in 1997 and bounced back to 29.8 percent in 2004 (see figure 3), one can talk about a backsliding instead of a budding financial system.
  \item \textbf{E}conomies with ratios of loanable funds to GDP in the range between 30 and 60 percent can be viewed as developing financial systems. In our sample, these are Bangladesh, Kenya, Bolivia, Bulgaria, Hungary, Poland, Turkey, Brazil, Algeria, Vietnam, Indonesia, Slovenia, Philippines, and Chile. Notice that post-central plan economies of Eastern Europe as well as Vietnam, unlike Russia, belong to this group of developing financial systems.
  \item \textbf{E}conomies with ratios of loanable funds to GDP in the range above 60 percent can be viewed as advanced financial systems. In our sample, these are India, France, Australia, U.S., Austria, Malaysia, Israel, Portugal, Germany, U.K., Belgium, Japan, China, and Hong Kong. China, with the ratio of 182 percent in 2003 is near the top of the list.
\end{itemize}

In terms of financial depth and development, measured by the ratio of loanable funds to GDP, figure 2 finds Russia in the cluster of African economies and China among the most advanced economies of Western Europe, North America, and the Asian Tigers.

Contrary to dire predictions of financial collapse, China demonstrates rapid financial deepening—a dynamic which may be even more important for assessing the impact of non-performing loans vs. loanable funds than the static of financial depth. Figure 3 compares the ratio of loanable funds (approximated as broad money) to GDP in China and Russia after the abolition of central planning. China started in 1979 at the level of budding financial systems, 24.8 percent, which, ironically, is the average level where one can

\textsuperscript{18}Extensive equity and other financial market instruments supplement ordinary credit markets in the U.S. and augment its financial depth. Demographic and economic dynamics contribute to the high rate of savings (and, by extension, deposits and lending) in China. Rapid rise in personal incomes due to spectacular economic growth in the last 25 years after decades of privation shifted the long-term ratios of saving and consumption disproportionally towards saving. Most importantly, at the same time, high fertility and low mortality of the past period created an age distribution with a high proportion of young people who save and a low proportion of old people who spend. See an elaborate discussion in Franco Modigliani and Shi Larry Cao, “The Chinese Saving Puzzle and the Life-Cycle Hypothesis,” \textit{Journal of Economic Literature} 42, no. 1 (March 2004): 145-170.
find the backsliding Russia’s financial system in 1994-2004. China’s financial deepening from the 24.8 percent ratio of loanable funds to GDP in 1979 to 182.4 percent in 2004 was swift, steady, and, during the last five years, accelerating. This ratio increased by 30 percent in 1994-1999 and by 50 percent in 1999-2004. There is no leveling-off of financial deepening even at the most advanced stage of financial development.

Ironically, again, Russia started in 1990, before the abolition of central planning, at the level of the 70 percent ratio of loanable funds to GDP, which is a lower bound of advanced financial systems, e.g., India in 2003. China was at the same level in 1990. As figure 3 displays, China and Russia converged at that level in 1990. Then Russia started its long march of financial shallowing and backsliding after the abolition of central planning, down to 16.6 percent in 1997, lower than most African countries. A partial recovery in 1999-2004 brought Russia up to the 29.8 percent ratio of loanable funds to GDP—about the level in China in 1980. What The Economist above pronounced about China applies instead aptly to Russia.

Ten types with non-performing loans and one without

China’s non-performing loans are different and unique. This section discusses their difference and their origin after the abolition of central planning. Table 1 assembles ten different types of non-performing loans, due to different sources, plus one type of the banking system without non-performing loans.

The eleven items on the list in table 1 are neither necessary, because some may overlap, nor sufficient, because there may be other, additional types of non-performing loans. This list serves merely a comparative purpose. It differentiates non-performing loans after the abolition of central planning under the two-track economic system in China (line 9) and under Enterprise Network Socialism in Russia (line 10) from numerous other types.

Let us start at the end of the list. Line 11, central planning. Central planning did not face the problem of non-performing loans. This fact puts the matter in perspective. If one wants to single out a problem and dwell on it outside of the systemic context, central planning is often a solution. There were no non-performing loans, open inflation, measured unemployment, revenue deficiency, lack of monetary policy credibility, current account imbalances, exchange rate misalignments, currency crises, asset price bubbles, underinvestment, overconsumption, over-leveraging, credit crunches, bank failures, moral hazard, liquidity traps, low-level equilibrium traps, dual markets, backward-bending labor supply curves, excessive litigation, time inconsistency, commitment failures, incomplete contracts, predatory price cutting, externalities of deficient corporate governance, the Dutch Disease, the Olivera-Tanzi effect, rent-seeking, state capture, market failures, and a host of other catastrophes too numerous to mention.

Industrial central planning is an euphemism for economy-wide forced production. Central planning functioned as the nation-enterprise. The supply chain of enterprises acted as the assembly line of the
<table>
<thead>
<tr>
<th>Source of non-performing loans</th>
<th>Description and cases</th>
<th>Separation between the monetary authority and enterprises</th>
<th>Separation of credit from payments, financial intermediation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Asymmetric information</td>
<td>Lenders do not have sufficient information about borrowers (all economies, past and present)</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>2 Moral hazard</td>
<td>Banks expect government bailouts and make risky loans (all modern and developing economies)</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>3 Cycles and bubbles</td>
<td>Banks expand risky credit during booms (all economies)</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>4 Adverse risk selection</td>
<td>High real interest rates imposed by government crowd out good borrowers and invite deadbeats (e.g., Latin America)</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>5 Unrestricted capital flows</td>
<td>Dollar loans to non-dollar earners become non-performing when currencies devalue (e.g., East Asia in the 1990s)</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>6 Principal/agent problem</td>
<td>Management discounts risks to show profits (all economies)</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>7 Financial-industrial groups</td>
<td>Banks lend to related firms (e.g., keiretsu in Japan)</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>8 Industrial policy</td>
<td>Government directs investment to export-oriented industries and manufacturing, some firms fail (e.g., South Korea)</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>9 A two-track economy</td>
<td>Government encloses and rations state bank lending to state enterprises to forestall trade and tax arrears and foreclose the enterprise network, many projects fail (China, post-1978)</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>10 Enterprise Network Socialism</td>
<td>Banks transmit and recycle subsidized loans to the enterprise network to pay trade and tax arrears (e.g., Russia)</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>11 Central planning — no non-performing loans</td>
<td>Automatic government credit to pay off arrears and debt write-off (e.g., USSR, China pre-1978, Nazi Germany)</td>
<td>No</td>
<td>No</td>
</tr>
</tbody>
</table>
government, with forced output quotas connected by forced exchange and forced delivery. Forced production, forced exchange, and forced delivery formed the supply nexus. On the demand side, the government financed production in order to transmit and enforce output quotas. Output produced with controlled inputs at controlled unit prices was funded in advance by plan targets. Banks (branches of the state bank) monitored and enforced payments. Forced delivery and forced payments linked the input-output chains.

Enterprise credit and investment were separate. Bank credit was relegated to pay off trade arrears and transmit credit to creditor enterprises to enforce forced delivery and keep the forced exchange chain intact. The government separated, controlled, and directly allocated investment. Technologically advanced investment was forced onto enterprises. The government was interested in inducing high-quality investment in order to minimize costs, increase productivity, maximize returns, and raise output quotas for enterprises. Enterprises were interested in maximizing spending on low-quality, indeed wasteful, investment in order to maximize costs for the government and retard productivity so as to constrain the government in raising output quotas. The government centralized most enterprise investment and transmitted it from the treasury through the state banks to enterprises. The ultimate source of investment was hidden payroll tax via suppressed wages.

The functions of banking under central planning derived from these conditions. One, direct function of banking was to transmit enterprise investment separately from credit to ensure and enforce its designated use. The second, direct function of banking was to pool household savings for government investment dispensed to enterprises. The third, direct function of banking was fiscal, to automatically remit enterprise taxes and surpluses (profits) due to the government as the owner. The fourth, indirect function of banking was preservation and reinforcement of forced production under central planning. It includes (a) monitoring overuse of inputs; (b) monitoring price manipulation by suppliers; (c) monitoring and enforcement of centrally planned output delivery; and (d) preservation of the supply chain and mandated production mix. This unique function of banking was made possible by a unique function of money under central planning.

Money functioned as the monitor of forced production. Banks monitor enterprise money balances within the centrally planned supply chain. When balances turn negative, they reveal negative net cash increase during the cash flow period accompanied by payment arrears. Under the flowing demand, this position can be due to overuse of inputs above the planned quotas, unauthorized price increases by suppliers, under-production and under-delivery of mandated output to designated buyers, and/or internal consumption of output. Hence the fifth, direct function of banking. The banking system automatically issues credit to illiquid, trade-indebted enterprises and transmits, indeed enforces, payments to creditor enterprises. The government then looks throughout the input-output chain into the causes of cash flow

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shortfalls and punishes managers. Enterprises may repay bank debt when their cash flow improves. Otherwise enterprise debt was written-off within a year as uncollectible.\textsuperscript{20} This is a central plan version of bankruptcy. An automatically and continuously reactivated credit line cleaned up, or rather wiped out, non-performing loans.

An automatic credit line enabled, or rather forced, enterprises to pay suppliers which preserved the centrally-imposed supply chain and kept forced exchange intact. Absent these credits and payments, buyers could reduce production and delivery and/or change suppliers while suppliers could channel delivery of output to more liquid buyers. They could break up the centrally-imposed supply chain, increase prices, extirpate price control, introduce competition, shatter forced exchange, change the production mix, and, ultimately, nullify output quotas and forced production. This sequence would dismantle central planning, melt it down before the government’s eyes.\textsuperscript{21}

State action had to be immediate, indeed automatic, before this chain reaction would set in motion. Automatic credit issue to enterprises with subsequent debt write-off was a cash flow subsidy for buyers which functioned as a forced subsidy to enforce delivery on the part of both buyers and suppliers. This was

\textsuperscript{20}In the case of collective farms in the USSR, debt collection could be extended to three years before a write-off, in order to extract more agricultural output as repayment in kind by reducing internal consumption.

\textsuperscript{21}To reconcile the automatic credit line with suppressed wages the government imposed wage control. Otherwise enterprises could divert credit from paying off trade arrears to raising wages, which would have defeated wage suppression. Suppressed wages represent the ultimate tax under central planning. They make centrally planned enterprise investment possible. Diversion of bank credit from paying off arrears to wages would defeat both wage suppression as the ultimate fiscal source and forced delivery under forced exchange and thus melt down forced production, that is, central planning itself. Wage control was thus essential. The government set up the elaborate and uniform piece-meal wage rates for each specific task on the assembly line and in the value-added chain within the enterprise and pay grades for each salaried position. Positive incentives were added on the margin in the form of discretionary bonuses in money and in kind for managers and workers for meeting and exceeding production quotas. But enterprises had no discretion to alter wage rates and salary grades. However, each enterprise’s total wage fund could not be fixed because of output and employment fluctuations. Hence, enterprises could inflate output, claim overtime, reclassify employees to upgrade their salaries, and upgrade the skill level and thus the piece-meal wage rates of wage workers. To create a cash constraint against wage inflation and preempt diversion of automatic bank credit from paying off trade arrears to paying wages, the government separated currency from credit. First, it made wages payable in currency only, not by checks or deposits. Second, it made credit not convertible into currency beyond the preset wage fund. Non-convertibility between credit and currency ran both ways. (1) Enterprises could not withdraw currency from their account beyond the designated wage fund even if they had money balances after receiving credit to pay off trade arrears. (2) Currency deposited by households was not convertible into credit. Banks could not issue extra credit just because they had extra deposits. Credit was based on the banks’ mandate to transmit payoff of trade arrears, not on household deposits of savings from wages. Having extra deposits was neither necessary (money could be printed) nor sufficient (credit might not be allowed) for issuing extra credit. The money stock was split because the monetary flows were split. Currency (M0) and non-currency (M3 - M0) constituted separate circuits in the flow of funds, in effect, separate, non-convertible currencies. Credit and deposits separated within non-currency. This twofold separation of credit from currency and credit from deposits was the monetary mechanism for fiscal enforcement and enforcement of production quotas under central planning.
Fixing China’s Banks, Not Russia’s

a forced subsidy for the purpose of enforcement of forced production and preservation of central planning.22 The carrot was at the end of the stick.23 In short, non-performing loans wither.

Now we can move from the bottom to the top of the list in table 1, from non-existent non-performing loans under central planning to a plethora of existing non-performing loans. Apart from the idiosyncratic cases of China and Russia after central planning (lines 9 and 10), eight other types are generic. They are summarized in a formulaic and self-explanatory format in lines 1 through 8. We cannot say anything new or original about them, beyond what can be found in the textbooks on banking and finance, and there is no point to pontificate.24

These eight generic types (lines 1 through 8) traverse many different economic systems and belong to none in particular. The types of non-performing loans in China and Russia are system-specific. They can be found only in post-central plan economies—either a two-track economy in China and similar

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22For additional discussion see Chapter 1 of From Predation to Prosperity, p. 5; Chapter 3, Section B, pp. 11-12, especially footnote 40; and Fixing Russia’s Banks, pp. 23-25.

23The literature calls this phenomenon the soft budget constraint but misinterprets it as a government indulgence. See a comprehensive survey in Janos Kornai, Eric Maskin, and Gerald Roland, “Understanding the Soft Budget Constraint,” Journal of Economic Literature 41, no. 4 (December 2003): 1095-1136. In reality it is a government imposition, a forced subsidy to preserve central planning. It is a control and coordination mechanism of central planning, a chain that ties together the gang production on the unified assembly line across the economy. The literature observes the carrot and overlooks the stick. The soft budget constraint means hard life for enterprises. Softness is also limited to government-pursued enforcement. Credit is soft across the economy but not across activities: for paying off arrears and enforcing forced exchange and forced delivery, yes; for other activities, no. In short, soft credit is hard to live with and, more often than not, hard to get. Central planning is no free lunch.

24Perhaps one interesting angle can be added to the principal/agent problem in banking. The principal/agent problem is inherent in organizations, government, and even the family. Agents (managers of organizations, subordinates in the government, or children in the family) can pursue their own agenda different from that of the principals (owners of organizations, superiors in the government, or parents in the family). Banking exacerbates the principal/agent problem. This is a specific affliction of intermediation. Expansion of business in productive activities does not usually mean risky exposure; in banking, it usually does. Managers discount risks to demonstrate their ability to generate quick profits. In addition, not only bank owners but also depositors are exposed. Unlike owners, depositors have few means to monitor lending activity and no authority to control managers. Even competition in banking is a double-edge sword. When some banks increase risky exposure and reap extraordinary returns, e.g., by lending to foreign governments, corporations, and financial organizations while insufficiently hedging against currency risk, default risk, etc., other banks must follow suit in order to match the former’s earnings per share and interest paid to depositors, lest shareholders dump their stock and depositors move funds to their competitors. This collective rush of banks to financial precipice is known in the literature as the lemming effect, named after Scandinavian rodents famous for migrations through the North Sea ending in collective drowning. See, e.g., Georgio Szego, “Introduction,” Journal of Banking and Finance 17, no. 5 (September 1993): 773-783; J. Mei and A. Saunders, “Excessive Gambling with Unfavorable Odds: Financial Institutions’ Real Estate Investments,” and R.G. Rajan, “A Theory of Fluctuations in Bank Credit Policy,” in Kellogg Graduate School of Management, Northwestern University, Proceedings of the Second Annual Symposium on the Globalization and Reform of Financial Institutions (Evanston, IL, May 1993).
countries or Enterprise Network Socialism in Russia and similar countries. The following matrix summarizes how non-performing loans in the two-track economy in China and under Enterprise Network Socialism in Russia are different from all other types:

<table>
<thead>
<tr>
<th>Non-performing loans</th>
<th>Long-term</th>
<th>Short-term</th>
</tr>
</thead>
<tbody>
<tr>
<td>Economy-wide</td>
<td>All types except China and Russia (lines 1-8 in table 1)</td>
<td>Russia</td>
</tr>
<tr>
<td>One-track</td>
<td>China</td>
<td>-</td>
</tr>
</tbody>
</table>

Consider the basic facts about non-performing loans in Russia and China in comparison with other types and between each other.

Facts about China:

1. Non-performing loans are sectoral and period-specific. This is primarily the debt of state enterprises to the state-owned banks accumulated after the abolition of central planning.

2. Non-performing loans arise from a special relationship between a special class of creditors, the four big state-owned commercial banks, and the special class of borrowers, state enterprises inherited from central planning. This special relationship combines a carrot and a stick. State banks issue credit to state enterprises on special conditions. Credit ceilings evolved from the central plan-type financing of trade arrears on account of production targets in 1983-94 to the entitlement-type credit quotas independent of production in 1995-98 to discretionary bank credit subject to caps thereafter. This is a carrot. Non-performing loans arise along the way. State banks conduct industrial policy as a government agent subsidizing another government agent, state enterprises. In the process, and in a continuation of central plan arrangements, banks enforce profit remittance of state enterprises to their owner, the government, and tax remittance. Together with credit ceilings, this is a stick. State banks act as a fiscal agent and property manager (under state ownership, the two functions overlap), controlling another government agent, state enterprises.

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25 A comparative description of both systems is in Chapter 2 of *From Predation from Prosperity*. Additional description of Enterprise Network Socialism is in Chapter 1 and its Addendum, “The Roller-Coaster of the Russian Economy.” Additional description of the two-track economy and hybrids between the two-track economy and Enterprise Network Socialism are in the second part of Chapter 4, pp. 17-26.

26 See Gregory C. Chow, *China’s Economic Transformation*, pp. 52, 72, 223, and *passim*. In addition, after 1994, three new, state-owned policy banks finance specific development projects (Ibid., p. 72). They substituted for direct budget investment in large-scale enterprise projects which characterized central planning. According to the China Banking Regulatory Commission and *China Finance Year Book*, policy banks now hold 8 percent of total loans (cited in Ben Dovlen and Anthony Kuhn, “Capitalizing China’s Farms”).
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This is the state enterprise/state bank track.27

3. The new-entrant enterprises constitute the second track. These are, first and foremost, township and village enterprises (TVEs) owned by local governments, cooperative enterprises, joint ventures, foreign ventures, and, lately and increasingly, private enterprises. Their financial counterparts spawned in the 1990s are International Trade and Investment Corporations, ITICs (joint ventures of local governments and foreign entities), rural credit cooperatives (RCCs, grown up to 35,000 by 2004), urban cooperative banks and credit unions, city commercial banks, and the 11 joint-stock commercial banks, national in scope.28 The second track is—by law and by strictly enforced policy—financially separated from the first track of state enterprises and state banks: trade, yes; credit, no. The government forbids the big four state banks to lend to the second track enterprises and banks. The best word to describe this policy is verboten.

4. Township and village enterprises and other new entrants had to rely initially on self-financing from retained earnings. Now they can use the credit facility of the second-track banks.29 Uniquely in contemporary banking, this facility is effectively moral hazard-free, which makes second-track banks not prone to the buildup of non-performing loans. The second track is not like private and local government sectors in Western market and developing economies, intricately connected by myriads of financial links to the national state sector. The second track is a separate track.30 The

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27In addition, the state track includes savings deposits institutions under the postal offices.


29According to the China Banking Regulatory Commission and China Finance Year Book, the latest distribution of loans is as follows: the four state-owned big banks hold 55 percent of total loans, policy banks 8 percent, joint-stock commercial banks 14 percent, rural credit cooperatives 10 percent, and others, primarily urban cooperative banks and credit unions, 14 percent (cited in Ben Dovlen and Anthony Kuhn, “Capitalizing China’s Farms”). In all, the first-track banks hold about 63 percent of total loans and the second-track banks and rural credit cooperatives, 37 percent.

30Agriculture with private farms holding tenure rights on state-owned land and forming rural credit cooperatives for lending can be viewed as the third track. Without private land ownership, farms have no collateral and no access to bank credit. This impedes sufficient agricultural investment and horizontal integration towards the optimal farm size determined by the market. But this impediment also precludes farms from joining industrial enterprises in a network over the value-added chain. Rural credit cooperatives fill the void of agricultural lending under the multi-track system. Separation of the third track has become more pronounced since the mid-1990s when joint-stock commercial banks discontinued lending to farms exactly in order to minimize their exposure to non-performing loans, which now amount to 26 percent of total loans of rural credit cooperatives. The national government started a drastic policy. It offers to repurchase 50 percent of non-performing loans of RCCs in those provinces which will tighten up RCCs. It strives to consolidate 35,000 RCCs into 3,000 credit unions in order to diversify risk and intermediate deposits to the most efficient investments. This amounts to cutting-off subsidies to marginal farmers at the expense of more successful farmer...
second track is enclosed. There is a Chinese wall of financial separation between the first and the second tracks. In Western market and developing economies, private banks, investment institutions, and productive corporations or financial-industrial conglomerates are subject to moral hazard. They can be and are periodically bailed out because they are said to be “too big to fail.” That is, the spillover costs of their failure to the national economy (the lost of investments and deposits and the subsequent contraction of the money stock and the economy) exceed the fiscal costs of their bailout. The government socializes the cost of their failure and thus invites the next failure, which is the very nature of moral hazard.

In the Chinese second track, nothing and no one is too big to fail. Contrary to world-wide expectations and the ire of Western investors, in 1999 China let the Guandong International Trust and Investment Corporation (GITIC), one of the largest ITICs, along with other, smaller ones, fail. Furthermore, the Chinese government abruptly shut down, without compensation of creditors, most other insolvent investment companies which borrowed from Western lenders to finance local government ventures. The cost of the second-track enterprises and banks joining the subsidized first track and spreading the subsidy chain across the economy vastly exceeds the spillover costs of failures confined within the second track. The government forestalls the two tracks joining together and forming an economy-wide network. This predatory network would have been powerful enough to build up trade arrears and tax non-remittance in order to extract monetization and other self-enforceable subsidies, as in Russia.

The Chinese wall of separation between the two tracks serves as a firewall. Second-track creditors are on their own to bear the costs of non-performing loans and apply risk-averse lending to preempt them. Non-performing loans do not spread from the first track. Both national government and the uninsured second-track investors (local governments, urban cooperative owners-depositors, and foreign co-owners of the second-track banks), while pursuing their divergent, selfish, and indeed conflicting interests, implicitly cooperate to this end. Think of this as the Chinese Invisible Hand on a two-track course.

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31 For a discussion of facts and the policy context, see Chapter 4 of From Predation to Prosperity, pp. 18-25.

32 See From Predation to Prosperity, Chapter 1 and Addendum, “The Roller-Coaster of the Russian Economy.”
Facts about Russia:

1. Between 97 and 99 percent of non-performing loans in Russia were short-term (under one year) in the 1990s. This is an awe-struck statistic. It is sufficient to discern that, first, non-performing loans in Russia had nothing to do with credit for investment and everything to do with credit for payments. Second, banks did not worry and did not stop lending for payments. They continuously rolled over delinquent short-term loans. In contrast, as table 1 attests, non-performing loans in all other economies constitute failed investment.

2. Between 80 and 95 percent of total loans in 1992-98 and 70-80 percent in 1999-2004 were short-term, under one year. Again, these loans constitute credit for payments, not for investment. Banks functioned, by and large, to recycle short-term loans which underwrite and facilitate trade credit, not as quintessential financial creditors for investment.

3. Non-performing loans in Russia are not an independent banking phenomenon. They merely comprise one more category of enterprise debt arrears, along with trade payment arrears, tax non-remittance, and payroll arrears. The roller coaster of non-performing loans, up from 1 percent of total loans in 1991 to 19 percent in 1997 and down to 3 percent in 2004, corresponds to the rise and fall of tax non-remittance and to the roller coaster of enterprise trade arrears relative to the money stock during the same two periods. When trade payment arrears increased relative to the money stock, so did tax non-remittance, payroll arrears, and non-performing loans. When monetization (due to the new Central Bank policy of mandated repatriation of export revenues after the default of 1998) reversed this trend, payment arrears declined relative to the money stock. Tax non-remittance, payroll arrears, and non-performing loans diminished accordingly. Non-performing loans in Russia are part of the system of the enterprise network arrears and their self-enforceable tax subsidy. Banks transmitted and recycled subsidized loans to the enterprise

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33 Central Bank of Russia, Biulleten Bankovskoi Statistiki (Bulletin of Banking Statistics), monthly, 1992-98. The last issue which published these data is no. 1 (56), 1998, pp. 54-55. The series of non-performing loans by maturity was discontinued. This paucity is not important because non-performing loans themselves gradually dissipated in 1999-2003 to less than 3 percent of total loans by 2004, as part of the general trend of monetization of enterprise debts. See “The Roller-Coaster of the Russian Economy,” Addendum to Chapter 1 of From Predation to Prosperity.


35 Documentation is in table 1 and figures 1, 3, 4, and 7 of “The Roller-Coaster of the Russian Economy,” Addendum to Chapter 1 of From Predation to Prosperity.

36 See Ibid. and Chapter 1 of From Predation to Prosperity for a detailed discussion of the tax subsidy.
network as part of this subsidy to pay trade and tax arrears. This transmission is the basic banking function in Russia.

To conclude the contrast, China’s non-performing loans are for investment, Russia’s non-performing loans are for payments. Table 1 lines up systemic differences between various types of non-performing loans. The unique feature of China’s non-performing loans is their predominant confinement to one, separate track of enterprises and banks in a multi-track economy. The unique feature of Russia’s non-performing loans is their short-term maturity and recycling as an appendage to enterprise payment arrears.

The last two columns of table 1 raise bigger questions than non-performing loans. They address the core issues of financial intermediation and systemic separations of credit from payments and payments (and thus enterprises) from the monetary authority. The next section turns to them.

The Tale of Two Credits

China and Russia exemplify two vastly divergent paths in the systemic evolution of credit and payments after the abolition of central planning. This section compares them. Under central planning, an automatic credit line enforced the nexus of forced production, forced exchange, and forced delivery. This was a self-contained system, evolved and congealed over time. What new system could emerge and evolve when the old system is abolished? It depends on the way central planning is abolished. It is a-systemic to expect a linear progression towards a free market economy as the one and only, teleological path regardless of a chosen direction.\textsuperscript{37}

\textit{Two paths, two credits}

If abolition of central planning comes through liberalization of transactions and privatization, the nation-enterprise immediately devolves into an enterprise network. This happens by default, without any collusion on the part of enterprises.\textsuperscript{38} Throughout the inherited supply chain, liberalized seller-enterprises send out invoices to buyer-enterprises overcharging them to the tune of expected inflation. Given the cash flow constraint, payments fall into arrears and the payment system becomes jammed. Seller-enterprises compensate themselves for overdue receivables by not remitting to the government payroll taxes withheld from workers, profit taxes, and value-added taxes from the payments they receive. Enterprises thus take over the fiscal system and bankrupt the government. To resume tax remittance, the government must

\textsuperscript{37}For an extensive discussion of a linear vs. a multi-dimensional approach to economic systems, see Chapter 3 of \textit{From Predation to Prosperity}, especially figure 3.3 and its accompanying exposition, and Chapter 5.

\textsuperscript{38}Chapter 2 of \textit{From Predation to Prosperity}, pp. 1-8 describes this evolution..
Figure 4. RE-INTERMEDIATION OF PAYMENTS IN RUSSIA VS. SEPARATION OF CREDIT FROM PAYMENTS AND FINANCIAL INTERMEDIATION IN CHINA AFTER CENTRAL PLANNING, SELECTED YEARS

<table>
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<tr>
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<th></th>
<th></th>
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</thead>
<tbody>
<tr>
<td>Russia</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Currency</td>
<td>17.2</td>
<td>34.6</td>
<td>36.0</td>
<td>20.3</td>
<td>17.0</td>
<td>9.9</td>
</tr>
<tr>
<td>Transaction Deposits</td>
<td>60.9</td>
<td>44.5</td>
<td>34.6</td>
<td>41.6</td>
<td>31.3</td>
<td>31.7</td>
</tr>
<tr>
<td>Non-Transaction Deposits</td>
<td>21.9</td>
<td>20.8</td>
<td>29.4</td>
<td>38.1</td>
<td>51.7</td>
<td>58.4</td>
</tr>
</tbody>
</table>

Notes:
Currency refers to currency outside banks, the monetary aggregate M0. Transaction deposits include demand deposits and checkable deposits. Transaction deposits = M1 - M0. Non-transaction deposits include savings and time deposits. Non-transactions deposits = M2 - M1. Monetary aggregate M2 sums up currency, transaction deposits, and non-transaction deposits.

Sources:
Russia, 1991: calculated from national statistics.
monetize it. The Central Bank issues credit as a quasi-fiscal subsidy to enterprises.

The banking system serves to transmit this subsidy to enterprises and lives off this transmission. Bank credit by and large comprises transmission of this monetized subsidy. Inflationary expectations are validated. This feedback loop of over-invoicing, network payment arrears, tax non-remittance, and forced Central Bank credit (forced monetization) becomes a new financial system in its own right. Enterprises take over the monetary system. Tax non-remittance and forced Central Bank credit sum up into a self-enforceable tax subsidy for the enterprise network.\(^3^9\) The predatory enterprise network emerges from the devolution of the nation-enterprise through liberalization and privatization. Network arrears and the self-enforceable tax subsidy create economy-wide redistribution of income between enterprises and between enterprises, the government, and taxpaying households. Enterprise Network Socialism is born.

If the abolition of central planning comes through segregation of the economy on a multi-track path, credit is restricted on a track-specific, sector-specific, bank-specific, and enterprise-specific basis as described earlier in this addendum. This multi-track approach breaks up the nation-enterprise and forestalls the enterprise network. The following discussion looks into implications of these two paths after central planning for credit and investment. Figure 4 serves as background information for this comparison. The last two columns of table 1 and the juxtaposed columns of table 2 (The Table of Two Credits) summarize it.

**A multi-track breakup of the nation-enterprise vs. its devolution into a network**

We can now explore how payments, credit, investment, enterprise taxes and subsidies, banks, and the monetary authority reassemble under the new economic systems in Russia and China. Different systems evince different integrations and separations of these generic institutions. This re-assemblage marks the process of adaptation in the evolution of new economic systems past central planning.

To recapitulate, abolition of central planning tore apart the nation-enterprise on two layers at once. It (1) lifted forced production, forced exchange, and forced delivery and (2) deactivated their enforcing, automatic credit line. The third layer of the nation-enterprise, the inherited supply chain, remained underneath. This is a latent enterprise network. It was ready to activate instantaneously unless it was deliberately broken up, the old enterprise sector phased-out, the new enterprise sector phased-in.\(^4^0\) Liberalization and privatization let the inherited enterprise network loose and led to the devolution of central planning.

\(^3^9\) This paragraph summarizes a detailed description in Chapter 1 of *From Predation to Prosperity* and Addendum to Chapter 1, “The Roller-Coaster of the Russian Economy.” See evidence in figures 6, 7, and 8.

\(^4^0\) For a detailed discussion of phasing-in the new enterprise sector and phasing-out the inherited sector across 42 post-central plan economies, see Chapter 2 of *From Predation to Prosperity*. 
planning into Enterprise Network Socialism.

The automatic credit line under central planning forced enterprises to pay off trade arrears and thus forced suppliers to keep forced delivery current. This system necessitates two corollaries, the first already mentioned earlier and the second so extraordinary that its time to surface has arrived only now.

1. **Confinement of credit to payments**: Credit served the primary function of paying-off trade arrears when enterprises could not make payments from regular cash flow. Credit was enclosed to payments. What systemically followed was separation of credit from investment and from deposits, and hence lack of financial intermediation between households and enterprises through the banking system. The banking system was not a financial intermediary.

   Although the automatic credit line is unique to industrial central planning, its consequences—confinement of credit to payment, separation of credit from investment, and lack of financial intermediation between enterprises and households—are not unique.\footnote{Separations of deposits from credit and currency from credit are unique. One is accustomed to think of currency (and later, deposits) and credit as inseparable. They were inseparable in all economies since the monetary and credit system of ancient Athens and the Thessalian League.} For other systemic reasons, primarily government and private confiscations of private savings and frequent repudiation of government debt to financial entities, these features were universal before the Financial Revolution and the Industrial Revolution in 18th century England and in all non-market economies afterwards.\footnote{Chapter 4 of *From Predation to Prosperity* discusses the financial revolution before the Industrial Revolution.} It is their opposites that are novel and unique—separation of credit from payments and integration of credit, investment, and deposits through financial intermediation between households and firms through the banking system. These are novel features, unique to Western market economies, some modern developing and post-Communist economies (see the middle, developing, cluster in figure 2), and the multi-track economy in China. These conditions constitute a prerequisite for the market economy.

2. **Inseparability of monetary authority from payments and thus from enterprises**: The automatic credit line and confinement of credit to payments integrated the monetary authority with payments and enterprise cash flow, and, by extension, with enterprises as such. In the flow of funds, the automatic credit line for paying off trade arrears was the direct monetary pipeline from the State Bank as a monetary authority through its branches to enterprises.\footnote{In terms of the organizational chart, the State Bank was the penultimate monetary authority under industrial central planning. It made decisions on issuing credit. It did not make independent decisions on issuing currency. Under wage control and separation between credit and currency, this distinction mattered. The ultimate monetary authority on issuing currency was the highest level of government. In the Soviet Union it was the Politburo of the Central} Inseparability of monetary
authority from payments, enterprise cash flow, and enterprises is a novel and unique systemic feature of industrial central planning.\textsuperscript{44}

Independence of the monetary authority from the fiscal authority and other government mandates has been a major systemic issue in many economies. For example, to mark their separation, establishment of the independent central bank in Italy in 1947 was called “divorce.” Funding directed government investment under industrial policy in Japan and elsewhere after World War II, in addition to financing and monetizing government debt, can be viewed as an extension of inseparable fiscal and monetary systems. In Japan in the 1950s-1970s, the monetary authority funded the banking system (specifically the “main bank” of each keiretsu) for directed investment provided to firms as a matter of industrial policy.\textsuperscript{45} None of these systemic arrangements involved an automatic credit line from the monetary authority to finance enterprise payments. Either through the fiscal authority or through the banks within an industrial conglomerate, the monetary authority was separated from payments and enterprises. Central planning built-in the inseparability of the monetary authority from payments and enterprises for its own enforcement—to enforce forced production, forced exchange, and forced delivery. The column next to last in table 1 contrasts this feature across economic systems and cases.

When the monetary authority is separate from payments and enterprises, it can conduct monetary policy subject to fiscal mandates and conditions. When the monetary authority is inseparable from payments and enterprises, it cannot conduct monetary policy by itself. Enterprises effectively run monetary policy to one or another extent. This means that money as the store of value for

\textsuperscript{44}This characteristic applies to both multi-industry central planning in modern economies and to mono-industrial central planning in their historical antecedents such as Egypt under Muhammad Ali in 1805-1849. See Chapter 5, Section A of From Predation to Prosperity, p. 11.

<table>
<thead>
<tr>
<th>Russia</th>
<th>China</th>
</tr>
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<tbody>
<tr>
<td>Liberalization and privatization of the nation-enterprise</td>
<td>Multi-track breakup of the nation-enterprise</td>
</tr>
<tr>
<td>1. Network payment arrears create Enterprise Network Socialism. Banks underwrite and underlie the enterprise network</td>
<td>1. A multi-track economy separates the old state sector and the new-entrant market sector. Sector-specific lending restrictions segregate banks and turn them into vehicles that separate enterprises and preempt network payment arrears</td>
</tr>
<tr>
<td>2. Banks transmit the self-enforceable tax subsidy from the government to enterprises to pay off arrears and remit taxes. The subsidy is set by the enterprise network</td>
<td>2. Banks remit taxes and profits from state enterprises to the government and transmit a separate subsidy embedded in subsidized credit. The subsidy is set by the government</td>
</tr>
<tr>
<td>3. No separation of credit from payments</td>
<td>3. Separation of credit from payments</td>
</tr>
<tr>
<td>4. No separation of the monetary authority from payments and thus from enterprises. The network takes over fiscal and monetary policy</td>
<td>4. Separation of the monetary authority from payments and thus from enterprises</td>
</tr>
<tr>
<td>5. Separation of credit from investment</td>
<td>5. Channeling of credit to investment</td>
</tr>
<tr>
<td>6. Banking primarily means re-intermediation between enterprise deposits and enterprise credit for payments</td>
<td>6. Banking primarily means financial intermediation between household savings and enterprise investment</td>
</tr>
</tbody>
</table>

Credit for payments, re-intermediation Credit for investment, financial intermediation
individuals can be debased not only by the government and banks but also by non-financial enterprises. This feature potentially opens the door to collective counterfeiting. Wage control and separation between currency and credit under central planning constrained this outcome. In Russia, liberalization and privatization of the latent enterprise network unleashed collective counterfeiting by enterprises.  

Abolition of central planning deactivated its enforcing, automatic credit line. This set off the chains of financial separations and integrations in a systemic progression. Two opposite evolutions followed. One pursued a multi-track breakup of the nation-enterprise into a restricted market economy with the new entrants in China. Another turned into a socialist devolution of the nation-enterprise via liberalization and privatization in Russia.

First, the chain of financial separations and integrations in China. They unwind how a multi-track approach forestalls the enterprise network from both sides. The government doesn’t let it be and enterprises—both old, state enterprises and the new-entrant market enterprises such as TVEs—don’t want it to be. The nation-enterprise breaks up into a nation of enterprises.

1. The government breaks up the nation-enterprise across the seams of production, taxes, subsidies, and finance. This breakup is track-specific, sector-specific, region-specific, locality-specific, and, ultimately, enterprise-specific. The government sets restrictions on lending and non-lending specific to tracks, sectors, banks, and, by extension, enterprises. (a) Within the first track, the four big

46See documentation and discussion in Chapter 1 of From Predation to Prosperity and “The Roller-Coaster of the Russian Economy,” especially figures 6, 7, and 8. For an early notice of this process, see David Malpass, “The Man Who’s Saving China from Soviet-Style Disaster,” The Wall Street Journal, July 29, 1993, p. A11. In Canto XXX of Inferno, Dante treats debasement of money as counterfeiting. Master Adam of Brescia was “coining florins, // Which had three carats of impurity.” “There is Romena, where I counterfeited // The currency imprinted with the Baptist, // For which I left my body burned alive.” And recollect where Dante meets him.

47Various hybrids developed in between, in Poland and elsewhere. Additional paths were possible after the abolition of central planning. For example, the government can sequester enterprise receivables in arrears every month-and-a-half or two months on a consignment basis, dispose of them through factoring agencies which mark them to market, and remit the proceeds to creditor enterprises. Soon, enterprises will start operating as separate units disconnected from a network of enterprises and arrears. They will sell output in quantities and at prices that buyers will pay in full and on time. This procedure will also work as a national auction settling the producer price level and quashing inflationary expectations. Marking trade arrears to market will mark the beginning of a market economy. The nation-enterprise will evolve into a nation of enterprises, a value-added chain of separate firms. This path is still possible, indeed necessary in Russia to shift it towards a market economy.

state banks can lend only to the inherited state enterprises of the first track. Loans carry subsidies by the virtue of being guaranteed and carry restrictions imposed by credit ceilings. Constrained subsidies pit enterprises in rivalry against one another and state enterprises as a whole against other tracks. This financial separation and the cap imposed by credit ceilings blocks any opportunity for enterprises to extract an open-ended monetary (quasi-fiscal) subsidy from the central bank for paying off trade arrears and for remitting taxes, to enforce monetization of enterprise debts. Banks of the first track cannot act as the agents of networking enterprises and must and do act as the agents of the government. (b) Banks of the first track cannot lend to the new-entrant enterprises of the second track, such as township and village enterprises of local governments, cooperative enterprises, joint ventures, foreign ventures, and private firms. The second-track enterprises have to rely on self-finance and/or uninsured commercial banks and non-banks of the second track such as ITICs, urban cooperative banks, credit unions, and the 11 joint-stock banks. All the second-track financial institutions and their owners, especially local governments, cannot support any risky attempt of any enterprises on their track to join a potential network of trade arrears and forced government subsidies. Here every enterprise is for itself to live or to die.

Restrictions and incentives work together. An enterprise network is blocked on both sides. (1) The government does not allow it and (2) enterprises, both old and new (and local government behind the latter), have no incentives to participate in the network, and the banks seal its fate. State enterprises of the first track have both restrictions and incentives against acting as a network. They earn individual profits and receive individual subsidies. They furthermore have no incentives to coopt the new-entrant enterprises into a network. The latter would mean extending trade credit which would fall into arrears. But, unlike Russia, these arrears will not be accommodated by the government through the banking system. Tolerating arrears sans a compensatory, self-enforceable subsidy ensues that state enterprises would provide free inputs to the new-entrants—a self-defeating proposition. This disincentive against forming the network symmetrically constrains the second-track enterprises. The new-entrant enterprises of the second track have both restrictions and incentives against conjoining a latent network. Local government owners of township and village enterprises and other owners of market new entrants on the second track do not allow their enterprises to build up payment arrears and risk cash flow shortfalls and potential bankruptcy. Banks can extend credit for investment only, not for overdue payments and subsidy extraction.

The banking system on all tracks can neither accord nor afford to serve as a subsidy transmission from the monetary authority to enterprises. This conjunction of restrictions and incentives renders the network dead on arrival.

2. State banks of the first track act as the agents of the government and enforce tax remittance and profit remittance on the part of state enterprises. Symmetric state ownership of banks and enterprises serves a systemic function of preventive custody against the latent network. Inherited state enterprises cannot initiate tax non-remittance as a means for extracting fiscal and quasi-fiscal
The best known factor was the Count of Monte Cristo. Modern factoring agencies make money, not revenge. Absence of network arrears and the presence of credit ceilings lead to downsizing of those old enterprises that do not reform to meet emerging market conditions. The breakup of agricultural communes into individual farms with tenure rights on state-owned land pares off a large bloc from the inherited state sector. Lack of restrictions apart from restricted lending, controlled liberalization (this is not an oxymoron) phases-in the new-entrant enterprises on the second track. Phasing-in new enterprises and downsizing old, state enterprises automatically phases out the old enterprise sector. This is the evolutionary dynamics of the multi-track economy. This process has transformed the nation-enterprise into a nation of separate enterprises bypassing the network.

3. Separation of credit from payments follows from the above. On the side of borrowers, when the windows of tax non-remittance and monetization of trade and tax arrears are closed, enterprises cannot sustain payment arrears and build up their network. On the side of lenders, banks face disincentives to issue credit for payments, save under political duress. Credit for payments ensues high transaction costs and prohibitively high risks of default. Enterprises continuously borrowing for payments exhibit cash flow deficits. They are illiquid and—unless their network forces monetization by the central bank through banks to enterprises for paying off arrears—hover on the verge of technical bankruptcy. Bankrupt enterprises can pull down banks along with them into bankruptcy. This is why Western financial markets developed a special facility for factoring receivables (purchasing them at discount, advancing cash to enterprises, and collecting from delinquent payers), which is separate from quintessential banking. A multi-track economy erects additional lines of separation. On the first track, credit ceilings not only bloc any emergence of an open-ended credit for payments forced by the enterprise network, but also create trade-offs between payments and investment in allocation of credit. Under credit ceilings, both state enterprises and state banks choose credit for investment. On the second track, local governments, depositors of credit unions, foreign ventures, and other owners cannot allow their uninsured banks to engage in risky lending for payments. They are free to lend by the virtue of being free to fail. Moreover, their very raison d’etre is to finance specific investment projects established by their owners and co-owners, especially local governments and township and village enterprises. This is why the second-track banks replaced self-financing of TVEs and other second-track enterprises.

4. Separation of the monetary authority from payments follows from the above. State banks of the first track have neither a mandate (like under central planning) nor incentives (like under Enterprise Network Socialism) to provide credit for payments to enterprises. All banks of both tracks—state

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49 The best known factor was the Count of Monte Cristo. Modern factoring agencies make money, not revenge.
banks of the first track and various commercial banks and credit unions of the second track—have no opportunity to transmit central bank credit to enterprises for payments of trade arrears and remittance of taxes. In the absence of network arrears and, hence, in the absence of tax non-remittance, the central bank is not forced to monetize enterprise debts and gives banks no facility to transmit this monetary subsidy. This combination (no mandate, no incentives, no opportunity, and no facility) separates the monetary authority from enterprise payments. This evolution marks a fundamental separation of the monetary authority from enterprises.

5. Integration of credit and investment follows from the chain of separations unwound in the preceding paragraphs. The first-track banks have both a government mandate and incentives to channel credit to investment. The second-track banks have incentives exclusively to issue credit for investment. The third-track banks, rural credit cooperatives, follow suit, and their forthcoming consolidation will only reinforce this adaptation. Incentives for credit for investment are a mirror-image of disincentives for credit for payments in paragraph 3. Lending for payments carries prohibitive risks and high transaction costs. Lending for investment carries manageable risks and transaction costs. In the absence of a systemic mandate for credit for payments under central planning and a systemic, self-enforceable subsidy for credit for payments under Enterprise Network Socialism, banks adapt and their incentives evolve to channel credit to investment. Banks cannot live off subsidy transmission and recycling of enterprise deposits through loans for payments. They can make profit by making credit into profitable investment. China’s banks of all three tracks function in the same vein as deposit money banks in Western market economies since the Financial Revolution in England in the 18th century: they issue credit for investment.

Second, the chain of financial separations and integrations in Russia. It evolved in the direction opposite to China’s. The nation-enterprise transformed into an enterprise network. Fiscal and monetary authority was devolved to the enterprise network and its enforcing banks. The following points recapitulate an earlier discussion.

1. The enterprise network was ready-made. Enterprises as inherited units of the nation-enterprise immediately adapted to liberalization of transactions by overcharging invoices, building up payment arrears, non-remitting taxes, and forcing subsequent monetization. Privatization of enterprises sealed this process. Banks became vehicles of transmission of quasi-fiscal subsidy from the monetary authority to enterprises. Banks help enterprises to enforce the tax subsidy determined by the enterprise network through accumulation of arrears and tax non-remittance. Banks act as the collective agent of the enterprise network.

2. The difference between the newly spawned commercial banks and deactivated branches of the defunct State Bank is that banks do not have to enforce tax remittance by enterprises. Through non-remittance of taxes collected from workers and consumers, the enterprise network took over the fiscal authority. Banks took passive part in this takeover by forfeiting tax remittance and active
part by re-intermediating non-remitted taxes in enterprise deposits as loans to other enterprises.

3. Banking transmission of monetary subsidy for the purposes of tax remittance and paying off arrears kept credit inseparable from payments. As we cited the evidence earlier, 80 to 95 percent of total loans in 1992-98 and 70-80 percent in 1999-2004 were short-term loans for payments, continuously recycled.

4. It follows that non-separation of the monetary authority from payments and, ultimately, from enterprises remained intact.

5. Confinement of credit to payments left investment to self-financing. Investment is not connected to payment arrears and tax non-remittance and thus does not influence the quasi-fiscal (monetary) forced onto the monetary authority and transmitted through the banking system. Banks are not interested in issuing credit for investment, which is a riskier and less rewarding proposition than transmitting the central bank subsidy and re-intermediating between enterprise deposits and payments. This leaves investment to self-finance by enterprises. Inseparability of credit from payments separates credit from investment.

The first five propositions in table 2 summarize these contrasting chains of separations and integrations in China and Russia. The last two columns of table 1 incorporate them to complete a historical and cross-national comparison of banking systems. The next section moves to proposition 6 in table 2—to the system-defining and epochal question of financial intermediation in banking or lack of thereof.

Financial intermediation in China vs. re-intermediation in Russia

There is always saving\textsuperscript{50} and there is always investment but investment does not necessarily create productive capital. Investment may be channeled into consumption infrastructure, such as pyramids,
Fixing China’s Banks, Not Russia’s

51 I wonder whether undue attention has not been given to the magnitude of the savings ratio at the expense of the form that savings take. Savings may well have been at least as large a fraction of income in the Middle Ages as in modern times; they then in considerable measure, perhaps in major part, took the form of cathedrals, which, however productive of ultimate satisfaction and of social security in more than one sense of that term, were not productive of worldly goods. I understand that budget studies for India, which at first sight seem to give very different results from corresponding studies for the United States, are found largely to duplicate the latter if the category ‘ornaments’ is interpreted as savings or, in the jargon of budget studies, as ‘net changes in assets and liabilities.’ The East was for long regarded as a ‘sink’ for the precious metals, surely evidence both of substantial savings and of the particular form that it took. Perhaps the crucial role that has been assigned to the savings ratio in economic development should be assigned instead to the factors determining the form in which wealth is accumulated: to the investment rather than savings process, as it were.” Milton Friedman, A Theory of the Consumption Function (Princeton, N.J.: Princeton University Press, 1957), p. 236.

Financial intermediation allocates household savings deposited with the banks to the most productive enterprise investment, creating money in the process.\textsuperscript{53} This allocation of capital derived from saving is the ultimate function of banking in the market economy.

China has been rapidly converging with the financial system of Western market economies.

- Total deposits denominated in national currency increased from 33 percent of the value of GDP in 1985 to 67 percent in 1991 to 100 percent in 1997 to 146 percent in 2002.\textsuperscript{54} This pattern of financial deepening is the source of expansion of loanable funds documented in figure 3.

- Household deposits have become a growing proportion of total deposits. In 2002, about two-thirds of total deposits were household deposits such as “urban and rural saving deposits,” “agricultural deposits,” “trusted deposits,” etc., and only one-third were enterprise deposits.\textsuperscript{55}

- Deposits as a proportion of the money stock $M_2$ increased from 80 percent in 1985, and probably less before that, to 90 percent in 2003. Figure 4 shows the trend in decomposition of monetary aggregates in selected years after 1985, the first year for which these data are available. This seemingly modest change is profound. It indicates vigorous money creation by the banking system in the process of financial intermediation between household saving and enterprise investment. To put the data in reverse, the proportion of money created by the Central Bank in the money stock declined by half from 20 percent in 1985 to 10 percent in 2003. Figure 4 yields that the ratio of the monetary aggregate $M_2$ to currency (the aggregate $M_0$) doubled from five to ten. It reached the magnitude of the most advanced Western market economies. The implied money multiplier, the ratio of $M_2$ to the monetary base (currency outside banks plus reserves, which sum up to the money printed by the central bank), increased accordingly.\textsuperscript{56} By any measure, the relative share

\textsuperscript{53}For clarity and sharp distinction, specialists call the money created by deposit money banks “inside money,” as opposed to “outside money,” such as currency and specie printed and minted by the government or the central bank. Outside money forms the monetary base, which sums up currency outside banks and reserves held by the banking system with the central bank. The money multiplier acquires a literal meaning. It indicates the multiplier of money creation by the banking system, the ratio of the total money stock (the sum of inside money and outside money) to the stock of outside money.


\textsuperscript{56}Due to high reserve requirements and especially semi-voluntary excess reserves held by banks with the central bank—which is a prudent restriction in view of non-performing loans of the first-track banks and uninsured
of money creation by the banking system in the process of financial intermediation doubled in 20 years. Figure 4 demonstrates this systemic evolution.

- Non-transaction deposits ("fixed deposits," in the Chinese vernacular), such as savings and time deposits, increased as a ratio of total deposits in national currency from 61 percent in 1978 to 70 percent in 2001. They actually stood at 83 percent of total deposits in 1990.\(^{57}\) For a comparison, in the U.S. in 2004, 87 percent of total deposits were non-transaction deposits.\(^{58}\) Figure 4 shows the share of non-transaction deposits in the monetary aggregate M2 in 2003 in China, 58 percent, was twice as high as Russia’s 29 percent. Non-transaction deposits, which underwrite the core of long-term investment, dominate the money stock and banking activity in China.

Russia moved in the opposite direction. It forfeited financial intermediation between household saving and productive investment through the banking system.

- Total deposits denominated in national currency collapsed from 55 percent in relation to GDP in 1991 to 10 percent in 1993-1997 and then recovered slightly to 12 percent in 2002\(^{59}\) and 15 percent in 2004. This is another mind-boggling statistic, which becomes grotesque when compared with the 146 percent ratio of total deposits to GDP in 2002 in China.


\(^{57}\)Finance Year Book of China 2002, p. 463. One reason why non-transaction deposits declined in the last decade might have been the broadening of the deposit base with the rise of the second-track banks, which carry no deposit insurance. Their depositors may prefer transaction deposits ("current deposits" in the Chinese vernacular, corresponding to demand deposits and checkable deposits).


since the mid-1990s. Thus household deposits make up a paltry 8 percent of GDP.

- The central bank rather than banks invariably dominated money creation in Russia in 1991-2003. Figure 4 shows that the proportion of currency in the money stock M2 doubled in the 1990s from 17 to 35 percent and continued to increase in the 2000s. The proportion of deposits declined from 83 percent in 1991 to 64 percent of the money stock in 2003. The ratio of M2 to M0 fell from almost six in 1991 to 2.8 in 2003, that is, more than halved. The implied money multiplier of M2 to the monetary base declined accordingly. This signifies the collapse of money creation by the banking system.

- Non-transaction deposits such as savings and time deposits staggered from 25 percent percent of total deposits denominated in national currency in 1991 and 22 percent in 1992 to 52 percent in 1997 to 32 percent in 1998 to 47 percent in 2003.\(^{61}\) Except for 1997, the majority of deposits were transaction deposits, primarily demand deposits. Figure 4 shows that in 2003 the share of non-transaction deposits in the money stock M2—investment-ready deposits, as it were—was twice as high in China (58 percent) as in Russia (29 percent). Ironically, on this score Russia ended in 2003 where China started in 1978 when it abolished central planning. In 1978, the fraction of non-transaction deposits in M2 in China stood at 32 percent.\(^{62}\) This backward comparison corresponds to the finding in figure 3 that the overall ratio of broad money (standing for loanable funds) to GDP in Russia in 2004, slightly under 30 percent, is at the level from which China took off in 1979-80.

- The low demand for deposits underlies financial shallowing in Russia depicted in figures 2 and 3 as the high demand for deposits underlies financial deepening in China. Russian saving found an alternative channel. Russian households hoard foreign currency, primarily dollars, outside of the banking system. Retail trade in foreign exchange makes up banks’ major activity and profits. It is impossible to estimate foreign exchange cash balances but it is possible to evaluate their order of magnitude relative to household deposits with the banks. Recent time series of the Central Bank of Russia evaluate net capital outflow by enterprises and households during 1994-2003 as $168.3 billion.\(^{63}\) Household deposits with the banking system stood in 2004 at R1,075 billion,\(^{64}\) which is equivalent to $37 billion at the current exchange rate. If any amount greater than 22 percent of the net capital outflow of the last decade is held by households in foreign cash balances (that is, if up

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\(^{64}\) Ibid., p. 89.
to 78 percent of the new capital outflow purchased real and financial assets abroad), Russian households trust the Federal Reserve more than they trust Russia’s banking system. Their hedge is prudent. Two devastating defaults of the banking system on the real value of deposits within one decade, in 1992 and 1998, precipitated by fiscal defaults, reveal systemic failure and the inherent serial nature of defaults. Deposit insurance can guarantee nominal, not real (inflation-adjusted) value of deposits. Russian savers collectively know, and reveal in their asset allocating preferences, that what we said about Russia’s banking system is consistent with the facts. It does not intermediate and households do not trust it to intermediate, which forms a feedback loop.

- These facts and figure 4 unveil the nature of banking in Russia. In accordance with the low demand for deposits in Russia, figure 4 implies that the money multiplier, the ratio of the money stock M2 to the monetary base printed by the central bank, is systematically low. This multiplier fell from about 5 in 1991 to about 3 in mid-1992 and hovered under or around 2 in 1993-2004.\(^{65}\) This seemingly obscure technical indicator points to a systemic feature. It shows that the demand for deposits in this system is the technical demand for the volume necessary to make payments. Not only enterprises but also households hold deposits in national currency with the banking system primarily in order to make payments such as rent for municipal housing, condominium fees (which in Russia are on par with subsidized municipal rent), and utilities. Credit for payments matches deposits for payments, and vice versa, both quantitatively and in the nature of the system.

A persistent money multiplier around 2 indicates that banks chiefly recycle payments by connecting deposits kept for payments with credit for payments. The central bank monetizes the enterprise network subsidy for paying off trade arrears and remitting taxes. Banks transmit monetized loans by adding to enterprise deposits, make payments, and re-deposit payment amounts less currency withdrawn. If little else happens in the banking activity, the resulting multiplier, after monetary subsidy transmission, depositing, re-depositing, meeting reserve requirements, and cash withdrawals, would spin around twofold of the monetary base printed by the central bank. The money multiplier hovering around two in the ratio of M2 to the monetary base over a long period of time is (1) a subtle, or perhaps not so subtle, indicator of this subsidy transmission to the enterprise network in arrears. (2) It also indicates that what follows this subsidy transmission is re-intermediation between payers and payees, both enterprises and households, but primarily enterprises. This is re-intermediation between payers and payees who continuously trade places and, in the case of enterprises, are both depositors and borrowers—in short, re-intermediation

\(^{65}\)Calculated from national statistics for 1991-92; for 1993-2004, see IMF, *International Financial Statistics Yearbook* 2003, p. 500 and IMF, *International Financial Statistics* May 2004, p. 276. The difficulty in comparing this indicator between China and Russia concerns inclusion of foreign exchange deposits in fractional reserve requirements in Russia after the default of August 1998 but not before that and not in China. This is an unusual but prudential policy of the Central Bank of Russia. It is concerned with potential illiquidity of Russian banks not only on domestic currency but also on foreign policy account, given overexposure of Russia’s banking system to foreign exchange contracts under exchange rate volatility.
between payments. This is not financial intermediation, not capital formation, not allocation of capital, but only recycling of the government subsidy.

Two different banking systems arise from these comparisons and from figure 4. China’s banks are engaged in investment, financial intermediation, and extensive money creation. Russia’s banks are engaged in credit for payments, re-intermediation between payers and payees, primarily between enterprises, and in transmission of the Central Bank monetary subsidy instead of money creation. The sixth line-item and the bottom line in table 2 summarize this stark contrast.

“Of what is past, and passing, and to come”

One little-noticed systemic invention of the Financial Revolution in England in 1688-1756 was the separation of credit from payments. It marked the rise of financial intermediation through the system of deposit money banks, which guided credit to investment in productive assets. Financial markets, through bank and non-bank intermediaries, created impersonal investment pools. Financial depth expanded investment from agricultural (e.g., land and livestock) and trade assets (e.g., vessels and colonial plantations) to capital stock. Thus Europe crossed the bridge from the Commercial Revolution to the Industrial Revolution.

In instrumental terms, one can think of the leap from gold coins and bills of exchange to money created by the banking system, along with stocks and private bonds operated by non-bank intermediaries.

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66 W. B. Yeats, “Sailing to Byzantium.”


68 Frequent debasement testifies to the fact that gold coinage and other metallic specie constituted a technical limit to economic development before the invention of deposit money banking. An increase of production on the supply side due to trade expansion, e.g., in Byzantine in the 11th century and in Venice, Genoa, and the rest of Europe thereafter, led to an increase of transactions on the demand side, which, in turn, for the lack of other options, chipped in currency debasement. But debasement eventually limits, not expands, transactions. This is a negative feedback loop. Continuous wars for resources, which accompanied European-cum-global trade before the rise of domestic production and resource efficiency during the industrial era, also fueled currency debasement. See an account in Costas Kaplanis, “The Debasement of the ‘Dollar of the Middle Ages’,” The Journal of Economic History 63, no. 3 (September 2003): 768-801. Mercantilism, like every economic species, was an end, not a stage. Only the breakup of merchant and trade guilds and the invention of free banking (printing private monies) as an early type of deposit money banking broke out of the above technical limit to the road to financial and industrial expansion. For a discussion of institutional evolution of money and banking, see Milton Friedman and Anna J. Schwartz, “Has Government Any Role in Money,” Journal of Monetary Economics 17, no.1 (January 1986): 37-62.
Figure 5. A SELF-REINFORCING SYSTEMIC EVOLUTION TOWARDS THE MARKET ECONOMY, WITH THE EMPHASIS ON FINANCIAL ADAPTATIONS

**Breakup of networks:**
guilds in pre-industrial England; branch monopolies zaibatsu in Japan; wholesale monopsonies and franchised land estates in Japan, South Korea, and other East Asia; inter-connected industrial-financial groups *Grupos* in Chile; slavery and slave plantations in the U.S. South; agricultural communes and the entire nation-enterprise on a multi-track path in China

**Phase-in of the new-entrant market sector**

**Expansion of the new-entrant market sector, phase-out of the inherited non-market sector**

**Research and invention**

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The evolution of private income and the rise of competitive product, labor, and financial markets

- **Private wage**
- **Private profit**
- **Public income**
- **Private finance**

**Financial markets:** Separation of credit from payments, separation of the monetary authority from payments and enterprises (after central planning), channeling of credit to investment, financial intermediation, impersonal investment pools

**Credit markets:**
- deposit money banks (free banking or commercial banking in the fractional reserve banking system)
- **Deposit expansion, credit expansion, expansion of inside money, financial deepening**

**Capital markets:**
- financial companies, investment houses, brokerages, stock and corporate bond markets

**Investment expansion**

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**Supply Side**

**Demand Side**
In broad societal terms, European cities transformed themselves from independent centers of specialized wholesale trade and its finance (this non-fiscal origin made them unique in the world and epitomized the Commercial Revolution) to territorial units of the national value-added chain of mass production. Institutionally, this marked a move from the trade and craft guilds and local marketplace to impersonal and competitive product and labor markets. Operationally, the landscape shifted from artisan and putting-out workshops to the mechanized factory. Technologically, the world switched from the windmill to the steam engine.69 Humankind reinvented itself.

Separation of credit from payments and channeling credit to investment in the process of financial intermediation enabled individual invention to be applied to mass production. Figure 5 summarizes this evolution preceding the Industrial Revolution in England and rapid economic progress in various parts of the world during recent decades, including post-central plan China.70 On the supply side, market incentives merged the escalated invention and productive investment opportunities. On the demand side, financial intermediation and expansion of money creation by the banking system enabled expansion of productive investment.

Invariably, the initial step was the breakup of inherited networks. After the network breakup, old enterprises were phased out and the new-entrant firms phased-in. The short list of network extirpation includes:

< the breakup of guilds in pre-industrial England;71
< the breakup of industrial branch monopolies zaibatsu in Japan after World War II;
< abolition of wholesale monopsonies and franchised land estates with financial privileges during land reform in Japan, South Korea, and other East Asian countries;72
< the breakup of inter-connected industrial-financial groups Grupos in Chile in 1982-83;73

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69 Vertical windmills were invented in Europe in the 12th century but horizontal windmills existed in Persia in the 7th century A.D. and water wheels in ancient Greece. Vertical windmills were the first widespread prime movers (transformers of natural resources into energy). They increased efficiency of food production, which enabled cities to exist, grow, and spread as unique settlements not originating in governmental storage of food and fiscal collection (see Chapter 5, Section A of From Predation to Prosperity). The steam engine constituted the first prime mover which was a generator of energy as an input in other value-added output. This technological revolution enabled industrial specialization.

70 The upper rows of figure 5 draw on the evolution of private income discussed in Chapter 4 of From Predation to Prosperity. The rest of figure 5 incorporates this addendum.


abolition of slavery and the phase-out of plantations in the U.S. South; and the breakup of agricultural communes and of the entire nation-enterprise on a multi-track path in post-Communist China.

Adaptation of the financial system followed. Separation of credit from payments and channeling credit to investment through financial intermediation, which integrates deposits with investment, can be viewed as a universal necessary condition for a market economy. This is a simple empirical rule readily refutable by counter-examples. In addition, in post-central plan economies, separation of the monetary authority from payments and from enterprises stands as a necessary condition for a market economy. This empirical premise also can be repudiated by evidence to the contrary.

As this addendum laid out, China went through all adaptations depicted in figure 5, one by one, deliberately and thoroughly. Russia had none of them. In the process, China created a multi-track economy with the predominant market sector which is relatively or largely non-free from government restriction—in short, an illiberal market economy. Russia created a free non-market economy, liberal socialism. Russia will need to undergo the evolution that England underwent in the 1700s and China in the 1980s-2000s if it is to move from Enterprise Network Socialism to a market economy.

Judging by economic performance, global experience has shown that free market economies invariably work best. The Soviet Union, Nazi Germany, Communist Eastern Europe, and Communist China demonstrated that socialism can work only if superimposed with forced production under central planning. But its performance is vastly inferior to free markets and functions only for a transient period of time. Over the long run, (1) all market economies outperform all socialist economies, but (2) central planning outperforms a less governmental socialism in historical and developing economies. It is an empirical law, newly reinforced by Russian experience, that less statist and non-state species of socialism perform worse than total state socialism of industrial central planning. Forced production under central planning partly substitutes for the missing productive incentives of the market.

Apart from non-systemic—institutional or policy—failures exemplified by the Great Depression, there has been no exception to the law that free markets beget long-term prosperity. There is considerable

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Footnotes:


uneasiness, though, lack of clarity, perhaps even reluctance to confront the question as to which part of this conjunction of free markets works: Is this that markets are free? Or that this is a market economy as opposed to socialism defined as income redistribution? Or, are both components of free markets inseparable and work only in tandem?

Russian and China contribute new experience and a sharp systemic contrast to address these questions. Judging by their economic performance since the abolition of central planning, an illiberal market economy in China works, whereas liberal socialism in Russia does not. Non-free markets generate long-term economic growth on the path to prosperity on par with free market economies and liberalize thereafter. Free non-markets beget economic failure. These are all forever-testable propositions. They are measurable, verifiable, and falsifiable by past, current, and future evidence across world economies.
Chapter 5

The Taxonomy of Common Income (Section A)

Post-Communist Russia and China break down the familiar view of the world. Each combines two seemingly conflicting characteristics. Russia integrates universal redistribution of income and limited, indeed symbiont government. Enterprise Network Socialism in Russia and similar countries is non-governmental total socialism, or, one can say, communism with a lower-case ‘c’. China and similar countries combine a predominantly market economy and a big government. The latter restricts the residual enterprise network from access to the income of new-entrant market firms. Neither of these systems exists on the traditional, one-dimensional map of the world which stretches along a linear dichotomy of market versus government. This one-dimensional map equates market with limited government, defines socialism as restrictive big government, and cannot locate on it economic systems which do not fit these conditions. With no place for post-Communist reality, the canonical, single-dimensional approach misguides policy. It liberalizes and privatizes the predatory enterprise network, which leads to Great Contractions. Wrong map, wrong navigation.

The traditional map came down alongside the Berlin Wall. Its inability to accommodate post-Communist developments calls for a new map of the world. Chapter 5 shows how treating socialism and government as separate dimensions opens a new, two-dimensional perspective on economic systems. It offers a comprehensive taxonomy of economic systems, which incorporates Enterprise Network Socialism.¹ A better map, and, possibly, policy.

Two Maps of the World

To demonstrate from the outset the capacity of the two-dimensional map, figure 5.1 displays thirteen major empirical economic clusters covering the last 10,000 years. It incorporates the Russian and Chinese economies of the 1990s and fits all of the clusters together on one page. Market and socialism lie on one independent dimension, while government lies on a wholly separate dimension. They form the latitude and the longitude of the new map. The income dimension extends from market to socialism or, synonymously, from private to common income. It measures income redistribution from zero to 100 percent. The government dimension stretches from limited to restrictive government. It measures economic control or restriction from nil to full. Intersections on the two dimensions define economic systems. The chronological inventory below summarizes the major economic clusters mapped in figure 5.1.

## The Taxonomy of Common Income

### I. Common output of primordial hunters and gatherers, predatory socialization of output, common governance

### II. The first government: Storing food in fortified settlements (e.g., Jericho, Catal Huyuk). The first insurance, rationing common output surpluses, the first individual shares, and, subsequently, income. This creates incentives for pre-Neolithic tribes to move from hunting and gathering to farming and herding. The Neolithic Revolution. After which the world splits as follows:

<table>
<thead>
<tr>
<th>A. Agricultural central planning in ancient Egypt, Mesopotamia, China, Japan, India, the Maya, Aztec, and Inca Empires, the Great Zimbabwe: Centralized irrigation network and forced delivery of agricultural output to the state wholesale monopoly and monopsony</th>
<th>X. Private, non-state predation: Conquest, brigandry, plunder, piracy, voluntary communes, later, financial looting</th>
<th>1. State-supplied slavery for private production in ancient Greece and Rome; state-financed colonization, infrastructure, and major transportation; trade is free and private, land is private, rent and prices are separate from tax</th>
</tr>
</thead>
<tbody>
<tr>
<td>B. Franchised state socialism in medieval Islamic States, India, the Ottoman Empire, Imperial Russia, pre-Meiji Japan, Africa: The government franchises revenue collection (rent and taxes, communally or collectively levied) and the wholesale agricultural monopoly and monopsony to provincial/local bureaucracy</td>
<td>2. Feudalism and cities in medieval Europe: The government is separated from the supply of inputs (no slaves); and from capital and finance when cities rise due to competitive protection and competitive tribute. This breaks up uniform common income into the common incomes of the government, fiefs, and guilds</td>
<td></td>
</tr>
<tr>
<td>C. Political state socialism in Latin America, post-colonial Africa, India: The government confiscates and redistributes income and rations private access to common income through the political process (this system is known as &quot;rent-seeking&quot;)</td>
<td>3. Mercantilism in Europe, 1400 to industrialization. The end of rural common income (serfdom), the rise of private rents in agriculture, trade, and craft. Taxes replace tribute. Market is there but with restrictions, confiscations, and privileges (especially guilds)</td>
<td></td>
</tr>
<tr>
<td>D. Industrial central planning: Mono-industry (cotton) forced production in Egypt under Muhammad Ali (1805-1849), multi-industry planning in Germany in 1914-18 (War Socialism) and Nazi Germany, then multi-industry forced production, with forced subsidies and cross-subsidies, in the USSR, Eastern Europe, and pre-1978 China</td>
<td>4. Market economy with limited government, acting as public utility, in industrial Europe, U.S., Japan, the Asian tigers. The breakup of guilds, the rise of private wages and private profit. Finally, private income across-the-board: Non-confiscatory, non-redistributive, separable public income and private finance. Then a step back to the Welfare State</td>
<td></td>
</tr>
<tr>
<td>E. Enterprise Network Socialism in Russia and similar post-Communist countries: Near-total income redistribution by the enterprise network, its self-subsidy (the tax subsidy) under symbiont government</td>
<td>5. Market economy with restrictive government in post-Communist China and neighbors: The government acts as protective custody, restricting the residual enterprise network from new-entrant market firms</td>
<td></td>
</tr>
</tbody>
</table>

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**Table**: The Taxonomy of Common Income, 2023.
FIGURE 5.1. MAJOR EMPIRICAL ECONOMIC CLUSTERS

- **PRIVATE**
  - Market economy, limited government as public utility: industrial Europe, U.S., Japan
  - Mercantilism: Europe, 1400 to industrialization, Meiji Japan
  - Feudalism and cities: medieval Europe
  - Private predation: conquest, brigandry, plunder, piracy, voluntary communes, financial looting

- **INCOME**
  - Government-supplied slavery: ancient Greece, Phoenicia, Rome
  - Agricultural central planning: ancient Egypt, Mesopotamia, China, Japan, Inca
  - Franchised state socialism: medieval Islamic states, India, the Ottoman Empire, Imperial Russia, China, pre-Meiji Japan, Africa
  - Political state socialism ("rent-seeking"): Latin America, post-colonial Africa, India

- **COMMON**
  - Enterprise Network Socialism, symbiont government: Russia, 1990s, the CIS
  - Industrial central planning: USSR, China, pre-1978
  - Pre-Neolithic and Neolithic rationing of common output and income
  - Primordial common output, common governance
These descriptive characteristics of major economic clusters are based on our understanding of facts and the literature. Details of each case will be discussed throughout this chapter. For the moment, the chronological inventory serves as a reference for figure 5.1. Descriptive characteristics determine locations on the map in figure 5.1. Locations approximate the intersections of income redistribution and government restriction for each specific cluster.

Objective and Verifiable Locations

There is no consensus in the literature on the characteristics, the choice, the structure, or even the names of the empirical cases that we assembled in the 13 clusters that appear in figure 5.1. Interpretations vary, swing, and clash. For example, ancient Egypt and Mesopotamia (in cluster A) are alternatively viewed as state-forced irrigation or as precursors of modern Western economies, which combine markets and public works. Central planning in the Soviet Union and China (in cluster D) is viewed, in one perspective, as a nationwide forced labor camp or, from a different perspective, as the implementation of a full employment policy by paternalistic Keynesian planners.

What is important for our purposes is that the two-dimensional map can accommodate any

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interpretation of specific economic clusters and cases (i.e., in which cluster they belong). First, clusters can be easily relocated on the map within the two dimensions. As with geographic maps, knowledge changes latitudes and longitudes of specific sites and improves the map. Second, the map uses direct measurements of income redistribution and government restriction as shares of gross domestic product (GDP). These measurements are free of value judgements which influence interpretations. Whether ancient Egypt and Mesopotamia ran state-forced projects or public works of the Welfare State does not affect their measurement and location. Both interpretations imply a high degree of income redistribution and government management. Whether Soviet and Chinese central planning were forced labor camps or a means to attain full employment, they achieved the same near-total extent of income redistribution and government control. Locations of cases, and the clusters in which they are placed, are objective, even if not precise. They are verifiable by evidence.

In short, the map is free of value judgements and adaptable to learning. A third dimension, property, can be readily added, in the same manner that geographical maps use colors to include additional dimensions. The map is expandable. We will come to this in Section C of this chapter.

All Clusters, Big and Small

The clusters in the chronological inventory are empirically assembled. Each cluster consists of loosely related, time-specific, place-specific examples. Many empirical cases can be added to expand and adjust the interpretation of a particular cluster, or to form one or more new clusters. Clusters can be merged or sub-divided, as illustrated in the following discussion.

# The Welfare State can be singled out as a cluster of its own, from ancient Rome to modern industrial economies, in Germany, Austria, and Italy beginning in the 1880s, in France and Denmark in the 1890s, and in Belgium, Norway, and U.K. in the 1900s.5

# What we dub as political state socialism in Latin America, India, and Africa can be disaggregated. Political rent-seeking in Latin America, India, Turkey, and similar countries in recent decades6 is

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5 Monthly grain allowances to citizens in ancient Rome were established in 58 B.C. and lasted through the end of the Roman Empire. Limited initially to 220,000 plebeian recipients, this entitlement was converted into food stamps by the Third century A.D. and had become inheritable and tradeable. Physically, foods stamps represented bronze tablets on which the names of the recipients were engraved. Grain allowances developed into bread allowances when baking services supplemented entitlements and 274 bakeries in Rome disbursed bread to the recipients. Oil and pork rations were added later for five months of the year. For a detailed description, see Arnold H. M. Jones, The Later Roman Empire, 284-602: A Social, Economic, and Administrative Survey (Oxford: Basil Blackwell, 1964), vol. 2, pp. 695-705. On the early modern Welfare State in Europe, see extensive data in Peter Flora, Jens Alber, et.al., State, Economy, and Society in Western Europe, 1815-1975: A Data Handbook, vol. 1, The Growth of Mass Democracies and Welfare States (Frankfurt: Campus Verlag and London: Macmillan, 1983). The chronology of the introduction of the state pension, unemployment insurance, and health insurance programs is on p. 454.

Political state socialism ("rent-seeking") in Latin America, post-colonial Africa, and India and mercantilism in pre-industrial Europe are viewed by many researchers as one system. The structural difference between the two is that rent-seeking uses modern political institutions for sectoral redistributive gains while mercantilism relies on entrenched and long-term privileges. This means that rent-seeking is highly competitive whereas privileged-based mercantilism is less so. This difference has quantitative implications for the extent of income redistribution and government control. Both the role of the government and the extent of income redistribution are greater in rent-seeking. Privileged redistribution is confined to isolated segments of commerce and agriculture whereas rent-seeking spreads over industries and supply chains and constantly involves the government. If empirical evidence does not warrant this differentiation, the rectangles of

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The Taxonomy of Common Income

mercantilism and political state socialism (rent-seeking) in figure 5.1 can be easily merged. The two-dimensional map does not take sides in these debates. Rather, it is a learning tool.

Franchised state socialism across medieval and pre-modern Asian, African, and Eastern European economies may be too much to lump into one cluster. Two basic elements hold it together.

(1) The government distributes agricultural output. The state wholesale agricultural monopsony and monopoly, inherited or reproduced from agricultural central planning, defines transactions between independent peasant communities and the state, as well as rural-urban relations. It amalgamates tax and rent because producer surpluses above state-set purchase prices accrue to state revenues. Land tax, another principal revenue source, also fuses tax and rent.

(2) This revenue collection, together with the enforcement of the monopsony/monopoly and other taxation, is franchised to provincial and local officials. For this purpose, they are allocated land (or, rather, territory and communities) to separately collect their own keep, initially in kind, and, later, in money income. This system of separate localized revenues is uniformly and independently dubbed in various countries and languages as “feeding,” and its franchised collectors, as “eaters.”


Iqta in the Arab Caliphate, khubz in Mamluk Egypt, timar in the Ottoman Empire, jigaradar in India (the term of Persian origin), daimyo and han in Japan, and kormlenie in Russia are similar terms. They mean the official’s feeding and the land (locale) assigned for feeding. In China, the hierarchical terms circle around “the bowl” (“the rice bowl,” “the
Why this isomorphic “feeding” system from the Arab states to the Ottoman Empire to India to Burma to Russia to China to Japan to Mali, Benin, and Madagascar? In the absence of forced delivery of output to state storage facilities, the central government cannot monitor the fiscal performance of its revenue franchisees and enforce full collection and remittance. To solve the enforcement problem, the government assigns fixed revenue targets and makes the franchisees the residual revenue claimants. They get their own revenues from the same locale after they deliver specified sums to the government. Any uncollected balance owed to the government comes from their own revenues or accrues to their debt. In short, eat as you remit.

If the cluster of franchised state socialism is too inclusive in the judgment of experts, it can be subdivided into two phenomena: (a) franchised taxation and indirect collective (communal) taxation in medieval Islamic states, India, medieval and Manchu China, medieval and Tokugawa Japan, and the Ottoman Empire, which accompanied government wholesale monopoly, and (b) franchised serfdom and direct communal taxation in Imperial Russia.

Communal taxation may also be part of central planning. Examples include collective farms in the USSR, communes in China before 1978, and villages in pre-Columbian America on the periphery.
of the centralized irrigation and infrastructure networks (peripheral franchised central planning and forced delivery of output). Also, communal taxation was carried over from peripheral central planning to political state socialism in Latin America.\textsuperscript{15} One can also view the price scissors in Africa and elsewhere as an indirect method of communal taxation, inherited from franchised state socialism.

Another separate cluster can be set for franchised central planning in India under the Mughal Empire, in medieval and Manchu China, in medieval and Tokugawa Japan, and in pre-colonial Madagascar. But one can also view this element of forced production as a necessary part of franchised taxation.\textsuperscript{16}

Labor management in Communist Yugoslavia in the 1950s-1980s is, in the view of many scholars, a separate phenomenon from, rather than a special case of, central planning.\textsuperscript{17}

In the post-Communist world, Poland and other Eastern European economies can be located along the diagonal between Enterprise Network Socialism in Russia and market economy with restrictive government in China (Poland, closer to China; the Czech Republic, closer to Russia).\textsuperscript{18} They can qualify as a separate cluster.

These examples and many other separate cases, which we did not map and will enumerate later,


\textsuperscript{16} Francois Bernier, who practiced medicine at the Indian court during 1656-1668 and greatly influenced his friend, another physician, John Locke, in 1675-79, grasped it all: “As the ground is seldom tilled otherwise than by compulsion, and as no person is found willing and able to repair the ditches and canals for the conveyance of water, it happens that the whole country is badly cultivated, and a great part rendered unproductive from the want of irrigation. The houses, too, are left in a dilapidated condition, there being few people who will either build new ones, or repair those which are tumbling down. The peasant cannot avoid asking himself the question: ‘Why should I toil for a tyrant who may come tomorrow and lay his rapacious hands upon all I possess and value, without leaving me, if such should be his humour, the means to drag on my miserable existence?’ The Timariots, Governors, and Revenue contractors, on their part reason in this manner: ‘Why should the neglected state of this land create uneasiness in our minds? and why should we expend our own money and time to render it fruitful? We may be deprived of it in a single moment, and our exertions would benefit neither ourselves nor our children. Let us draw from the soil all the money we can, though the peasant should starve or abscond, and we should leave it, when commanded to quit, a dreary wilderness. The facts I mentioned are sufficient to account for the rapid decline of the Asiatic states.” Francois Bernier, \textit{Travels in the Mogul Empire, A.D. 1656-1668}, pp. 226-227.


\textsuperscript{18} Figure 5.2 plots this diagonal based on the national data. We will return to its findings shortly.
are not exceptions or outliers. They are all self-contained cases or possible clusters in their own right. They can be readily located on the map. They do not require special treatment. From the two-dimensional perspective, any specific intersection of income redistribution and government restriction qualifies as an empirical case. As many empirical clusters and cases can be placed on the map as one deems fit, depending on how one interprets the evidence for specific cases and how to combine them to constitute clusters. Which cluster is big and which is small is in the eye of the beholder. It is merely up to a researcher’s judgement to select empirical cases and bunch them into specific clusters or just scatter them over the map. This judgement or misjudgement on selection does not affect the map itself.

The two-dimensional map can accommodate all and any specific clusters at any level of aggregation and disaggregation, because all clusters (and all cases within each cluster) contain some extent of income redistribution and government restriction. Their intersections readily place clusters on the two-dimensional map. One can apply to the two-dimensional map the same simple and merciless test which we used for the unidimensional approach. If a single case can be found outside of the map, or if the map cannot find room for it, then the map fails to grasp comprehensively the relations between market, socialism, and government. If all empirical clusters and cases in any combination can be placed on these two dimensions, and not on just one dimension and not on some other dimension, then we can say with confidence that the two-dimensional map (like figure 5.1) is both necessary and sufficient for capturing the relations between market, socialism, and government.

The objective of figure 5.1 is not to provide the exact selections, aggregations, and locations of empirical clusters but to demonstrate the analytical capability of the two-dimensional map—the existence of specific, identifiable location for every extinct and extant case. Later in this chapter (Section B) we will approximate the specific locations of 86 major and minor empirical cases in a form akin to the Periodic Table of Elements.

Patterns and Paths

Once major empirical clusters are assembled, figure 5.1 reveals their patterns and paths. If the descriptive characteristics in the chronological inventory are in the ballpark, the empirical clusters in figure 5.1 line up in four disparate groups:

# Prehistoric societies, from primordial predatory redistribution of common output to the Neolithic Revolution. We mark them with Roman numerals.

# Western societies, from ancient slavery to feudalism and cities to mercantilism to fully-fledged market economies. They originate in Europe, extend to the British outstretches, and, later, incorporate Japan and the Asian Tigers. We denote them with Arabic numerals.

# Non-Western societies, from agricultural central planning to franchised state socialism to political state socialism and industrial central planning, and, recently, to post-Communist economies. We
identify them with Roman capital letters from A to F.\textsuperscript{19}

\# A diverse, world-wide grouping of private predation. It ranges from the timeless conquests, brigandry, and plunder to historical piracy and voluntary communes to modern financial looting.\textsuperscript{20} We designate it with an X.

The paths tell us more than the four groups themselves. If the locations in figure 5.1 are not too far off mark, they yield three distinct paths:

\# \textit{The government path:} The government path is the development of government and income, depicted by green arrows. Communities invented government to insure their survival by smoothing consumption. This first insurance entailed storing and rationing of very short-term surpluses of common output (daily, weekly, monthly).\textsuperscript{21} The first government controlled access to common output in order to check predatory socialization of output by individuals or small groups. The government broke up primordial common output. This started a 10,000-year march of separation of production from predation, as we discussed in Chapter 3. Breaking up common output formed the basis for the development of unique human society. It is characterized by the capacity to produce beyond subsistence, which releases the variable productivity of resources.\textsuperscript{22} Thus the rise of government, seen in the one-dimensional map as the thesis of socialism and the antithesis of markets, in fact reduced the extent of socialism, as shown in figure 5.1. An important insight of the two-dimensional map is that the emergence of government initially reduced the degree of redistribution. Put another way, the first relationship between government and redistribution was

\textsuperscript{19}The terms “Western” and “Non-Western” are not strictly geographical or cultural, if only because Germany and other countries occasionally bounced between the two groups of economic clusters. We use these terms, for the lack of better ones, to sketch a long-term milieu. It is a geographical coincidence that on the two-dimensional map in figure 5.1 the direction towards market is westward, and towards socialism, eastward.


\textsuperscript{22}On the variable productivity of resources as the defining human characteristic and its material and economic accounting, see Michael S. Bernstam, \textit{The Wealth of Nations and the Environment} (London: The Institute of Economic Affairs, 1991), pp. 29-37, 61-62.
negative.\textsuperscript{23} Government rationing allocated individual shares of common output. This was equivalent to the invention of income and money and led to the birth of exchange. They, in turn, put in place incentives for the shift to agriculture because they enabled individuals (or families) to internalize part of their output beyond a very short-term horizon. After the invention of government and income, the world subdivided into various types of government and income in the West and non-West and also private predation.

\textbf{The socialist path:} The socialist path is consolidation and realignment of common income, denoted by black arrows.

(1) The socialist path is primarily state socialism, bouncing back and forth between clusters. The familiar example is Latin America. Much of it experienced consecutive clusters of state socialism for centuries, despite at least four major market reforms since independence from Spain in the 1820s\textsuperscript{24} and a period of successful market development in Ecuador, Argentina, and Chile in the second half of the 19\textsuperscript{th} century. A fascinating example is Egypt. It moved from centralized irrigation, with forced delivery of agricultural output to the government, at the age of the pyramids to franchised state socialism under Arab, Mamluk, and Ottoman Empires to the first industrial central planning under Muhammad Ali in 1805-49\textsuperscript{25} to political rent-seeking after World War I to the rural-to-urban transfers (“the price scissors”) and the wholesale monopsony/monopoly after the Revolution of 1952, and, at one point in the early 1960s, approached multi-industry central planning as in Soviet Central Asia—a full circle of state socialism from Djoser to Nasser.\textsuperscript{26}

\textsuperscript{23}The canonical view holds this relationship invariably positive, because government and redistribution are postulated as one and the same.

\textsuperscript{24}Hernando De Soto, \textit{The Mystery of Capital: Why Capitalism Triumphs in the West and Fails Everywhere Else} (New York: Basic Books, 2000), p. 3 and \textit{passim}.


\textsuperscript{26}Recently, Egypt has shed many elements of state socialism and moved significantly towards a market economy. See a sweeping treatment by Charles P. Issawi, \textit{The Middle East Economy: Decline and Recovery. Selected Essays} (Princeton: Markus Wiener Publishers, 1995); and a broad overview in Hugh N. Kennedy, ed., \textit{The Historiography of Islamic Egypt}, 950-1800 (Leiden, Boston: Brill, 2001). Egypt, post-Communist China, and southern countries of Latin America in the second half of the 19\textsuperscript{th} century testify that geography (factor endowments) and history (path dependence) are not destiny. In the past, they usually were. In modern times, the world market expanded country policy choices. Chapter 7 will explore these themes. On path dependence in history, see recent summaries by the pioneer of this idea, Paul A. David, “Why are Institutions the Carriers of History? Path Dependence and the Evolution of Conventions, Organizations and Institutions,” \textit{Economic Dynamics and Structural Change} 5, no. 2 (1994): 205-220; “The
The empirical bouncing back and forth on the socialist path can be explained in terms of the government’s decision on how to maximize its fiscal take of the share of national income. One approach is to reduce redistribution and predation in order to increase productive incentives and expand the economy—smaller squeeze, greater pie, greater tax revenue. Reducing the tax burden to increase the tax base, which results in greater revenue over time, works at relatively moderate or low levels of redistribution and restriction. At high levels of redistribution, an alternative approach is to impose forced production under central planning—greater squeeze, greater pie, greater tax revenue. This second approach works only if additional enforcement costs are low and forced production is truly feasible. If both conditions hold, forced production may offer a larger payoff to the government than the first alternative. As we discussed in Chapter 3, forced production substitutes for voluntary productive incentives, the economy expands, and tax revenue and other gains for the government increase. One can say that the government applies cost-benefit analysis to determine which approach, market incentives or forced production, yields the highest return.

The bouncing of common income between clusters does not necessarily result in state socialism. The red arrow on the map pointing southward from industrial central planning shows a different outcome, from state socialism to Enterprise Network Socialism. The result is the liberalization of common income after the abolition of central planning, but with total income redistribution intact. This is socialist devolution, in which government restriction breaks up but common income does not.

The market path: The market path is the path from state socialism to market, from governmental common income to private income. The blue arrows designate the market path. This is the path of serial breakups of common income.

First, there was state-supplied slavery and state-financed colonization. They constituted government production of inputs (slaves, land, infrastructure, transportation) for private production of output. Output itself was un-rationed. This was the shift from the Neolithic rationing of output to free exchange of output in trade, while the government supplied the inputs. Figure 5.1 thus locates the extent of common income and government restriction in ancient Europe at significantly lower levels than the rest of the world for centuries to come.

Second, feudalism and private serfdom removed the government from supplying inputs for agricultural production. Decentralized government, the feudal manors and the feudal network, regulated the inputs of land and labor (private serfdom) but did not produce them. This

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differentiates feudalism from slavery. The advent of feudalism resulted in less redistribution, less
government, their new interaction and different function, namely, regulation versus production of
inputs.

(3) Third, the emergence of cities separated government from handicraft production, transportation,
finance, and investment. The government regulated but did not produce capital inputs. This
differentiates medieval European cities from ancient cities (the government supplies inputs) and
Oriental cities (the government distributes output). Medieval European cities are economic entities
on their own, not secondary to the government economic function.

(4) Fourth, the age of Mercantilism spelled the breakup of labor rationing (serfdom), the end of
rural common income, which redistributed income from peasants to landlords, and the substitution
of centralized taxation for sweeping feudal tribute. The government specialized in protection and
levied taxes as payment for public service. Protectionism, privileges, and other subsidies of
mercantilism meant government regulation of output with generally free, unregulated inputs of labor,
land, and capital. This development resulted in another reduction of redistribution and government
restriction.

(5) Fifth, came the breakup of guilds, both by market forces of spawning rural industries and by
the deliberate action of local and central governments. This breakup created private wages and
private profit.

(6) Sixth, private profit incentives fostered the movement for separable, non-confiscatory, non-
redistributive public income. It ended confiscations, subsidies of colonial plantations, debt
repudiations, and excessive, arbitrary taxation. Public income became the private income of the
government, separate from the private income of firms and households. The government started
to serve the people as a public utility—a market government, as it were. The breakup of
government predation led to the Financial Revolution and private finance fueled the Industrial
Revolution. 

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29 On the critical role of the breakup of private guilds and the rise of rural industries as the cradle of industrialization, see Mancur Olson, The Rise and Decline of Nations, pp. 121-129, 147-150; Eric L. Jones, The European Miracle: Environments, Economies, and Geopolitics in the History of Europe and Asia, pp. 98-102; and, David S. Landes, The Wealth and Poverty of Nations, pp. 242-245, 546-547. This pattern of rural industrial development at the local level, on the backdrop of the decline of traditional cities, reemerges in the Township and Village Enterprises (TVEs) in post-Communist China.

30 We discussed this process in Chapter 4. But there was also backward bouncing from mercantilism to more state socialism. Germany and parts of Eastern Europe saw the restoration of serfdom in the 16th and 17th centuries, often in the form of state-franchised serfdom. The most conspicuous example of backward bending is the introduction of central planning of private corporations in Germany during War Socialism in 1914-18 and under the Nazi regime. The
The serial breakups of common income build the market path. Japan, the Asian Tigers, Chile, other non-European societies, and, finally, post-Communist China and Vietnam wound their way to market through their own breakups of inherited state socialism. The physical destruction of the network of the centrally planned private corporations in Germany at the end of World War II preceded Germany’s return to the market path. The administrative breakup of central-plan private monopolies, zaibatsu, in Japan after World War II had a similar effect. The breakup point in Chile was government eradication of the network of predatory financial-industrial groups (known as Grupos) in 1981-82. South Korea, Thailand, and Indonesia went through a similar process after the crisis of 1997. China and Vietnam, as we discussed in previous chapters, consistently broke up the redistributive network of inherited state enterprises. In the latter instances, the government acted in a protective custodial manner by restricting the residual enterprise network from access to the income of the new-entrant market economy. China and similar countries created market economies with non-market government. This is an impossibility if seen on the one-dimensional map of market versus government, but is a normal outcome if seen on the two-dimensional map. The broken blue arrow in figure 5.1 indicates a possible path of convergence to classical market economies once the eradication of the inherited enterprise network is complete.

The government, market, and socialist paths describe economic evolution on the two-dimensional map. Apart from evolution, the red arrows indicate socialist devolutions, which are government breakdowns from various types of state socialism to predation without breakups of redistribution. The most familiar example is the collapse of the Roman Empire and subsequent brigandry across Europe. Others are incessant conquests after the Neolithic Revolution, the Thirty-Year War in Germany during 1618-1648, and protracted conflicts in Latin America and post-colonial Africa. The latest socialist devolution is Enterprise Network Socialism.

The two-dimensional map points out two key developments of human progress. The first

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classic account of the origins of War Socialism is Carl Ballod, Der Zukunftstaat: Produktion und Konsum in Sozialstaat (Stuttgart: Dietz, 1920). Another example was the privately-run, state-subsidized central plan colony in Java under the Dutch, which we described in Chapter 4. The Portugese Jesuits organized forced plantation communes with central planning among American Indians, amply called reducciones. The best known were the Guaranis in what is now Paraguay and several others in the Sao Paulo region in Brazil. See Philip Caraman, The Lost Paradise: The Jesuit Republic in South America (New York: Seabury Press, 1975); and, Selim Abou, The Jesuit Republic of the Guaranis (1609-1768) and its Heritage (New York: Crossroad Pub. Co., and Paris: UNESCO, 1997). The example which proved to make the most long-lasting influence, survived by today, was the adaptation of Spanish mercantilism, with its privilege politics, in the Latin American colonies. We depict it by the backward-bending black arrow from cluster (3) to cluster (C) in figure 5.1. In the words of Douglass C. North, “the Spanish encomienda system in Mexico substituted the overlordship of Spanish encomenderos for Aztec rulers. In return for ‘protection and justice’, the new rulers received tribute and forced labor.” Douglass C. North, Structure and Change in Economic History, p. 145. For a detailed analysis see, Ernest Feder, The Rape of the Peasantry: Latin America’s Landholding System and Andre G. Frank, Mexican Agriculture, 1521-1630: Transformation of the Mode of Production.

development is the invention of government (and, subsequently, income), which marked the breakup of common output. The second development is the series of breakups of common income.

Together, they form a counter-clockwise movement from primordial predation to modern prosperity (first, the two westward-northward arrows on the map, then the blue arrows). An alternative movement comes full circle from primordial predation to agricultural central planning to franchised state socialism to industrial central planning to modern predation of Enterprise Network Socialism (first, the green arrows northeastward, then the black arrows back and forth, and, finally, the southward red arrow).

One of the key observations of Friedrich A. Hayek, now broadly recognized, is that the twentieth century saw a counter-movement. It went from market and limited government to state socialism, in the extreme, to central planning. Post-Communist experience in Russia and similar countries adds an extra step backwards, the devolution from central planning towards the historical archetype of non-governmental communism.

The Diagonal From State Socialism to Market as a Special Case

Examine the two-dimensional map of economic systems in figure 5.1. One can readily draw a diagonal running from central planning through various clusters of state socialism to the market economy with limited government. This diagonal represents a special case. It is unwarranted to generalize it and to infer from it that government is the only redistributive force. It is also not valid to generalize that state socialism is the only socialism, that the extent of income redistribution and government restriction are the same in every cluster, that market and government are opposites, and that liberalization always leads to market, and never to predation.

The dichotomy of market versus government and the equivalence of government with socialism grew out of this one generalization—movement from state socialism to markets with limited government. This doctrine was articulated in Marxism, which viewed nationalization and government control as the starting point of socialism. Then, in a bizarre twist in the evolution of ideas, this approach was developed by the Austrian thinkers, until it became, in recent decades, part and parcel of the canonical, one-dimensional consensus. This construct gave rise to the unidimensional map:

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The Taxonomy of Common Income

<table>
<thead>
<tr>
<th>Market economy</th>
<th>Government and socialism (state socialism)</th>
</tr>
</thead>
</table>

Or, empirically, and using our earlier terms for major and additional clusters:\(^{34}\)

| Market economy | State socialism: Mercantilism, political state socialism, the Welfare State, feudalism, slavery, franchised state socialism, central planning |

On the one-dimensional map, state socialism means that state is socialism and socialism is state—the concepts are identical and interchangeable. On the two-dimensional map, state socialism means something different, that the government monopolizes redistribution and access to common income—a special, even though prominent and frequent, combination.

The frequency of the group that constitutes state socialism is natural. Predators benefit from scale. Predation, like violence, exhibits decreasing costs, displaces competition, and leads to a natural monopoly.\(^{35}\) Predators either become government\(^{36}\) or are supplanted by government, which takes over predation.\(^{37}\) This has been the rule until the post-Communist case of the enterprise network, which subordinates the government to it. The frequency of state socialism makes it a tendency, but one that is not universal. Restrictive government is neither necessary for socialism (as exemplified by private predation and by today’s Russia) nor sufficient (as exemplified by post-1978 China). State socialism stands as a special case or group of clusters.

Empirically, the one-dimensional map locates 8 out of 13 major clusters in figure 5.1. The 8 include 7 clusters of state socialism and one of market. The one-dimensional map misses prehistoric societies with their development of government and the Neolithic Revolution. Prehistoric economies do not fit the one-

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\(^{35}\)See Douglass C. North and Robert P. Thomas, *The Rise of the Western World*, pp. 6-8, 94. For a most elaborate analysis, see Frederick C. Lane, *Profits from Power: Readings in Protection Rent and Violence-Controlling Enterprises*.

\(^{36}\)Mancur Olson emphasizes this outcome in his *Power and Prosperity: Outgrowing Communist and Capitalist Dictatorships*.

\(^{37}\)Frederick C. Lane emphasizes this outcome in his *Profits from Power: Readings in Protection Rent and Violence-Controlling Enterprises*.
dimensional diagonal because primordial redistribution was greater than the scope of government rationing. The unidimensional map further misses non-governmental, private predation. Yet, until modern times and even recently in some parts of the world, private predation constituted the bulk of human economic enterprise. For millenniums, civilizations were like islands in the ocean of conquests, brigandry, and plunder. A high degree of redistribution coupled with the absence of any effective government generally resulted in non-state socialism. Clusters are not equal in scope over time and space. By missing private predation, the unidimensional map misses more than half of human experience counted in man-years.

Most importantly for our study, the unidimensional map rules out the entire realm of post-central plan economies. It cannot include a market economy under the aegis of a restrictive government such as China and similar countries where government serves the function of protective custody. The one-dimensional map automatically excludes Enterprise Network Socialism in Russia and similar countries with universal redistribution of income and symbiont government. Nor can Eastern European and other post-Communist countries, which combine features of Russia and China, fit the one-dimensional map.

Figure 5.2 plots data on 42 post-Communist economies in the mid-1990s. It displays that the entire post-Communist development occurs on the green-colored diagonal, which is opposite in direction from the blue-colored diagonal of state socialism. For reference and comparison with figure 5.1, we copied the two extreme clusters. Industrial central planning is placed in the northeastern corner and classical market economies in the southwestern corner of the map.

The horizontal axis in figure 5.2 measures the share of income redistribution in GDP. It retrieves the data on private income in figure 2.1, but recalculates the figures to express shares in terms of common income (thus, 77.8 percent private income in China’s GDP becomes 22.2 percent common income and 21.8 percent private income in Russia’s GDP becomes 78.2 percent common income). Following the method applied in Chapter 2, income redistribution is approximated by the output of the inherited enterprise network, which is calculated as the difference between total output and the output of the new entrant and other independent enterprises outside the network. The vertical axis provides rough estimates of government restriction as a share of GDP.

In contrast with generating reasonably confident percentages on income redistribution, we did not develop a reliable method of quantifying government restriction on the basis of published statistics. Instead, we resort to crude approximations using statistics on the government share of income redistribution and various qualitative, descriptive accounts of government control over the rest of the economy. Our estimates of government restriction may be inaccurate by as much as 10-15 percentage points for many countries. The greatest weakness is an overestimate of government restriction in resource-rich Central Asian countries and Azerbaijan. The government ostensibly controls energy and other resource production and exports, but, in reality, the enterprise network is in charge and the government is a symbiont, as in Russia. We chose to err on the side of the government, not on the side of the redistributive enterprise network, which weakens the negative correlation between them, and flattens the slope of the green-colored diagonal. Various alternative tests with possible adjustments of our estimates affect only the slope of the negative
FIGURE 5.2
INTERACTION OF INCOME REDISTRIBUTION AND GOVERNMENT RESTRICTION IN POST-COMMUNIST ECONOMIES, 42 COUNTRIES, MID-1990s

Sources:
Common income: Calculated by the authors from national official statistics, The Economist Intelligence Unit, and national sources.
The data on East Germany refers to 1994 when major industrial enterprises, which produced at least half of GDP, were subsidized by the Ministry of Privatization.
relationship between income redistribution and government restriction. They do not change the negative sign of the correlation or reverse the direction of the green-colored post-Communist diagonal.

To explain this empirical finding, recall the discussion in the policy section of Chapter 4. We surveyed evidence that the development of private income after central planning depends on the breakup of common income, which requires government restriction of the residual enterprise network. This implies a positive relationship between private income and government restriction, or a negative correlation between income redistribution and government restriction. To put it plainly, the more government restricts the enterprise network, the less income redistribution. In this regard, more government results in less socialism. Figure 5.2 shows this correlation. The correlation is weak ($R^2$ is about 0.2) but it is there.

The negative correlation between government restriction and common income creates the northwestern-southeastern diagonal on the two-dimensional map. Along this diagonal lie most post-Communist economies. One can observe a diagonal cross on the two-dimensional map in figure 5.2. The green post-Communist diagonal of the trade-off between redistribution and restriction, the diagonal running from China to Russia, crosses the blue diagonal of the positive relationship between redistribution and restriction, diagramed in the northeastern-southwestern direction from state socialism to the market economy with limited government.

Even on its own turf, the diagonal of the special path from state socialism to market obscures more than it reveals. Specific empirical clusters of state socialism are packed together, each with about the same scope of socialism and government. In addition, there is considerable overlap among clusters lying along or adjacent to the diagonal. Ancient European slavery overlaps medieval and pre-modern non-Western franchised state socialism. Medieval European feudalism overlaps political state socialism in modern non-Western countries. Ancient European slavery and modern non-Western state socialism overlay as equidistant clusters. Collapsing all clusters into one dimension loses all global and historical distinctions. The patterns and paths of major empirical developments are lost. The breakups of common income are lost. The bouncing back and forth of state socialism is lost. The origin of the market economy is lost. The evolution of economic systems is lost.

**Productive Liberalization as a Special Path**

In the unidimensional framework, liberalization invariably leads to market. On the two-dimensional map, the breakups of common income build up the market path. Liberalization leads to market only if it is preceded or accompanied by the comprehensive breakup of common income. This is a special path of productive liberalization. It enhances private productive incentives with increased private opportunities. This was the historical case in England in the 18th century and, later, in other market economies. Figure 5.3, building on figure 5.1, depicts productive liberalization with a diagonal blue arrow.

If common income is entrenched, liberalization creates socialist devolution. The combination leaves income redistribution intact, reduces government restriction, diverts private opportunities to predatory
FIGURE 5.3. PRODUCTIVE LIBERALIZATION AND SOCIALIST DEVOLUTION

PRIVATE   ————————                                 INCOME                             ——————— > COMMON

Industrial central planning: USSR, China, pre-1978

Mercantilism: Europe, 1400 to industrialization, Meiji Japan

Market economy, restrictive government as protective custody: China, post-1978, Vietnam, 1990s

Political state socialism ("rent-seeking"): Latin America, post-colonial Africa, India

Market economy, limited government as public utility: industrial Europe, U.S., Japan

Private productive incentives

Private opportunities

Private predatory incentives

Productive liberalization

Lack of private opportunities

Counter-productive liberalization, socialist devolution

Private predation: conquest, brigandry, plunder, piracy, voluntary communes, financial looting

Enterprise Network Socialism, symbiont government: Russia, 1990s, the CIS

Private opportunities
activities, and releases counter-productive incentives of predatory networks. Chapters 1 and 2 discussed in detail how public income and all incomes in Russia and similar countries became free goods open to common access. Liberalization without separation of incomes turns economic liberty into open access to common income, a free-for-all. Figure 5.3 depicts this counter-productive liberalization after central planning with a red arrow. Similar devolutions can occur after liberalization of other systems of state socialism. Liberal socialism can be as predatory as state socialism before it, and as much distant from a market economy.

Drawing on our previous discussion in Chapters 1 through 4, figure 5.3 puts productive liberalization and socialist devolution in the two-dimensional structure. Private income is the core of private productive incentives. The blue arrow of productive incentives goes from common to private income on the income dimension. Conversely, the red arrow of private predatory, redistributive incentives runs from private to common income. On the government dimension, government restriction reduces private opportunities, while less restriction increases private opportunities. Vertical black arrows depict these directions. It is the two-dimensional combination that matters. Private opportunities can realize only the prevailing incentives, which may be productive or predatory. Figure 5.3 shows the two-dimensional intersection, the cross of private incentives and private opportunities, and the resulting variety of liberalizations.

# The diagonal of productive liberalization combines the maximum of private productive incentives and private opportunities.

# Private productive incentives develop in China with limited liberalization and with restricted private opportunities, after the major breakup of common income and control of the residual enterprise network.

# The drop-down line of socialist devolution, of counter-productive liberalization in Russia without the breakup of common income, descends from central planning to Enterprise Network Socialism.

China’s policy freed the economy from income redistribution. Russia’s policy freed the economy from government restriction. The classical market economies in the 18th century and thereafter were freed from both. The latter, special path of productive liberalization combines both freedoms on both dimensions. But the unidimensional idea of liberalization either takes freedom from redistribution for granted (if the government is the only redistributive force, liberalization automatically ends redistribution), or assumes it away. It generalizes the special case.

This unwarranted generalization of a special path leads to counter-productive policies. The triad of stabilization, liberalization, and privatization (SLiP), which has become the staple policy of recent decades, can succeed only as a special case. In fact, it is a special case of a special case, namely, the application of broadly defined liberalization to the era of fiat money. The SLiP triad worked most successfully in Great Britain in the late 1970s and 1980s at the time of Prime Minister Margaret Thatcher.
Although Great Britain was a highly expansive Welfare State, with numerous producer and consumer subsidies, the core of its economy was based on private income. Liberalization and privatization in the Welfare State cut subsidies and curtailed segments of common income on the redistributive periphery. These segments of income redistribution are the essence of the Welfare State. When SLiP was applied in the 1980s and 1990s to developing countries, which can be characterized as political state socialism (“rent-seeking”), it proved to be much harder to achieve sustained stabilization and sustained economic growth. Liberalization and privatization in much of Latin America and similar regions have been less productive than expected, and financial stabilization, unsustainable. Regarding this experience, Hernando de Soto chose a damning book subtitle: “Why capitalism triumphs in the West and fails everywhere else.”

Under SLiP, deep-rooted redistributive networks evolved to replace old subsidies with new ones, sometimes on a larger scale. Examples include financial looting in Chile in the late 1970s-early 1980s until the government broke up the financial-industrial groups, the patronage system in Indonesia which exploded in 1997, sectoral subsidies in Brazil in the late 1990s, regional subsidies in Argentina, which resumed its economic crisis in 2000, and in many similar cases around the world.

Even worse outcomes evolved after the abolition of central planning. We discussed in detail in Chapters 2 and 4 how SLiP invariably failed in post-Communist countries and how success was dependent on the policies of breaking up the inherited enterprise network. Some of these policies liberalized markets for new-entrant firms. Other polices were illiberal, reinforcing government control over preexisting enterprises and restricting the links between the old and new sectors in the two-track economy. Illiberal policies may have limited private economic opportunities, but they had the beneficial effect of preventing predatory devolution. Post-Communist experience demonstrates the two-dimensional trade-offs between freedom from redistribution and freedom from restriction.

**Two-Dimensional Liberty and Its Trade-Offs**

Russia and China illustrate the idea which could have transpired from historical experience, namely, that economic liberty is two dimensional. One dimension is freedom from redistribution and the other is freedom from government restriction. Liberalization, in contrast, is one-dimensional. It is only freedom from

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39 More precisely, liberty is at least two-dimensional. To go beyond the two dimensions, confiscation of property, such as capital and financial assets, limits one more liberty, and there are others. David Friedman sums it up: “Freedom is multi-dimensional because there are many different things with regard to which you can be free, and there is no natural way of comparing them, of adding them up to give one number. So you have what mathematicians call a partial ordering of societies by how free they are. If country A has a certain amount of freedom in each dimension and country B has as much freedom in some dimensions and more in others, then we can say that B is freer than A. But if country B has more of some freedoms and less of others, then B and A are incomparable, and that will often be the case.” In Walter E. Block, ed., *Economic Freedom: Toward a Theory of Measurement. Proceedings of an International*
government restriction. If both freedoms develop in tandem, liberalization is productive. If not, liberalization releases redistribution from government monopoly and opens the redistribution of resources and income to common access. Once government control vanishes, predatory, redistributive networks of enterprises and other economic participants are free to confiscate output and income from all members of the community.

The practical problem is that the two freedoms cannot work in tandem to achieve productive liberalization unless the breakup of common income has already been attained to a significant degree. This precondition existed in England in the 18th century. It did not, indeed cannot, exist at the time of the dissolution of central planning. This means that trade-offs exist between the two freedoms, resulting in trade-offs between private productive incentives and private opportunities. Consider the Chinese and Russian examples.

# The Chinese case (cluster E) entails more breakup of common income, more de-socialization, more freedom from redistribution, but less liberalization. Private productive incentives increase, but there are reduced private opportunities and temporary preservation of strong government controls.

# The Russian case (cluster F) entails more liberalization, less freedom from redistribution, more non-governmental predation, resulting in socialist devolution. Private opportunities increase, but counter-productive incentives divert them to predation and cause contraction.

The trade-offs mean that we ask the two-dimensional, not the one-dimensional, questions. The two-dimensional questions are, first, does government interference reduce or increase redistribution and by how much, and secondly, does liberalization reduce or increase redistribution. In contrast, the one-dimensional question is only if government interferes and how much.

As a general rule, the greater the extent of common income, the greater the initial distance from the market, and the more that redistributive forces are entrenched in the economy, the less that liberalization is initially warranted. Two simple conclusions follow, especially applicable to China and Russia.

1. In successful historical and contemporary economies, the more extensive the degree of common income, the more its breakup preceded or accompanied liberalization.

2. If redistribution did not decline before or together with government restriction, new private opportunities turned into access to preexisting common income. Open access to inherited common income led to private and network predation within the pre-existing scope of redistribution.

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*Symposium* (Vancouver, B.C.: The Fraser Institute, 1991), p. 46. One correction: countries B and A are comparable multidimensionally if their position on each dimension is measured separately and a comparison includes two or more measurements independently.
(Chapter 5, Section B follows)
Notes:
1. Codes are listed in the legend for the two-dimensional table of economic species
2. Colors designate property types which dominate a given economic species:
   - Private
   - Cooperative
   - Local government
   - National state
   - Common
3. The size of the bubble estimates the rate of remuneration for the production of ideas, invention, and technological innovation
The Omnipresence of Common Income in a Multi-Dimensional World

in a free country, where the master is perhaps either a member of the colony assembly, or an elector of such a member, he dare not do this but with the greater caution and circumspection. The respect which he is obliged to pay to the master, renders it more difficult for him to protect the slave. But in a country where the government is in a great measure arbitrary, where it is usual for the magistrate to intermeddle even in the management of the private property of individuals, and to send them, perhaps, a lettre de cachet if they do not manage it according to his liking, it is much easier for him to give some protection to the slave; and common humanity naturally disposes him to do so. The protection of the magistrate renders the slave less contemptible in the eyes of his master, who is thereby induced to consider him with more regard, and to treat him with more gentleness. Gentle usage renders the slave not only more faithful, but more intelligent, and therefore, upon a double account, more useful. He approaches more to the condition of a free servant, and may possess some degree of integrity and attachment to his master’s interest, virtues which frequently belong to free servants, but which never can belong to a slave, who is treated as slaves commonly are in countries where the master is perfectly free and secure.

That the condition of a slave is better under an arbitrary than under a free government, is, I believe, supported by the history of all ages and nations.\textsuperscript{14}

\textit{Multi-dimensional slavery}

Before the world saw Enterprise Network Socialism in Russia and the two-track economy in China, slavery alone was sufficient to abandon the paradigm of market vs. government. In the tough words of Milton Friedman, slavery comprised “a market in human beings.”\textsuperscript{15} Table 3.2 offers a short list of various species of slavery in three dimensions.

The definition of slavery is as cruel as slavery itself. According to the article “Slavery” in \textit{Encyclopedia Britannica}, “A slave was considered by law as chattel.” Historical practice confirms this legal formula. In all societies listed in table 3.2, slaves were sold and bought in primary or secondary markets.\textsuperscript{16} Slaves were exported and imported, bequeathed and inherited, and exchanged for goods and
## Table 3.2
### Three-Dimensional Slavery

<table>
<thead>
<tr>
<th>Dimensions</th>
<th>Income</th>
<th>Government</th>
<th>Property</th>
</tr>
</thead>
<tbody>
<tr>
<td>Private slavery: U.S. Antebellum South, Cuba, Brazil, 1600-1860</td>
<td>Common (socialism)</td>
<td>Non-restrictive</td>
<td>Private</td>
</tr>
<tr>
<td>Debt-based, local government-enforced private slavery: Mycenae, Sparta,</td>
<td>Common (socialism)</td>
<td>Restrictive</td>
<td>Private</td>
</tr>
<tr>
<td>pre-Solon Athens, pre-Republic Rome, and the ancient Near East</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Government-supplied private slavery: Ancient Greece and Rome</td>
<td>Common (socialism)</td>
<td>Restrictive</td>
<td>Private</td>
</tr>
<tr>
<td>Franchised slavery: Russia, 1497-1861, Korea, 1392-1725, the Kanem Bornu</td>
<td>Common (socialism)</td>
<td>Restrictive</td>
<td>Private</td>
</tr>
<tr>
<td>Empire, 1580-1846, the Oyo Empire, 1650-1800, the Fulani Empire, 1790-1797</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Centrally planned slave trade and forced production by slaves on state</td>
<td>Common (socialism)</td>
<td>Restrictive</td>
<td>State</td>
</tr>
<tr>
<td>plantations: Dahomey, 1680-1892</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Enslavement: Pre-colonial Africa, early medieval Germanic societies, the</td>
<td>Common (socialism)</td>
<td>Non-restrictive and restrictive</td>
<td>Common property and local</td>
</tr>
<tr>
<td>Vikings, 800-1050, Iran, 1501-1850, various historical Arab states, the</td>
<td></td>
<td></td>
<td>government, national state, or private ownership</td>
</tr>
<tr>
<td>Ottoman Empire, pre-colonial India (e.g., Malabar), Burma, Thailand, the</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Indian societies of the American Northwest coast (Kwakiutl and Yurok),</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>spin-offs of piracy, and other world-wide episodes</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Notes and sources:
Footnotes 16-30 in Chapter 3
assets. Slaves were objects of titles and contracts since the ancient times.\(^\text{17}\) Slaves were objects of property taxes, import tariffs, export duties, and trade regulations.\(^\text{18}\) Free people turned family members or themselves into assets to redeem debt and were honored or seized as such assets. Slaves were used and accepted as collateral for trade credit and bank loans.\(^\text{19}\) This list of functions is unambiguous: Slaves were assets on the balance sheet against which owners could redeem or accumulate liabilities. In short, “slavery entails ownership of one person by another,”\(^\text{20}\) and by impersonal owners. Ownership of human beings as assets is the foundation of slavery.

In the spirit of the prior accounting discussion of property rights (ownership), we can offer the accounting definition of slavery. Slaves are human beings operated as tradeable assets whose disposable net value is under exclusive control of one or another owner. Accrual of returns on the labor of slaves is under exclusive control of slave owners regardless of the eventual distribution of returns between slaves, owners, and the third parties such as the government. On the economic plane, slavery moves human beings from labor markets to capital markets. In terms of the production function, slavery converts labor and


\(^{18}\) “Other questions (...) concerned the frequent necessity of defining the words ‘Goods and Commodities’. Was money, that is, gold and silver coin and bullion, a commodity? If so deemed by the economists of the day, it was not so interpreted in enforcing the acts of trade. Were negroes ‘goods’ within the meaning of the act? The decision was finally rendered in the affirmative. (...) The earliest decision was rendered in 1689, when “the judges certified their opinion that negroes were merchandise” (Calendar State Papers, Colonial, 1708-1709, ¶ 226). (...) The question not unnaturally arises whether the term ‘dead commodities’ in the Barbadian Act of 1663, establishing the four and a half [percent] duty, was not intentionally so expressed in order to exclude negroes from its operation.” “The question was asked afterward, in 1720, whether Spanish ships, coming from Spanish possessions in America and laden with the products of those countries, could unload and sell their cargoes at an English plantation. (...) They brought negroes and English-manufactured goods and paid for them in silver coin and bullion. Such a trade was contrary to the navigation acts, which forbade the exportation from the English colonies of any goods or commodities in foreign vessels. (...) This trade raised two interesting questions: were negroes and money commodities under the navigation acts? If so the trade was clearly illegal. The English crown lawyers easily decided the first question in the affirmative; but the second, a very serious one from the point of view of the money supply of England and the colonies, seemed to be covered by clause XV of the act, “Provided that this act or anything herein contained extend not to bullion,” and therefore never became an issue.” Charles M. Andrews, *The Colonial Period of American History. England’s Commercial and Colonial Policy IV* (New Haven and London: Yale University Press, 1964), pp. 83-84, 62. The offensive language is that of the documents of the time.

\(^{19}\) In some cases, slaves served as the matching assets for government development subsidies. A Russian 19th century classic, *Dead Souls*, by Nikolay Gogol, relates the story of an entrepreneur who purchases at discount from slave owners the tax ledgers of their deceased slaves, which had not been registered yet as deceased in the tax rolls, in order to use these slaves as collateral and qualifying assets for a land development subsidy from the Ministry of Finance.

human capital into physical capital as a factor of production. On the existential plane, slavery represents separation between human body as an ontological given and human capital, including human body itself. Slaves are human capital owned by others than those in whom individual human capital is embodied.\(^{21}\) It is this existential separation that makes it possible that human beings become assets on the balance sheet of other owners.

This accounting definition of slavery makes a sharp distinction between slavery and serfdom. Slaves are tradeable assets, serfs are not. By this accounting definition, pre-industrial Russia in 1497-1861 did not have serfdom. It was slavery par excellence.\(^{22}\) Numerous species of serfdom, indentured servitude, peonage, and forced labor are different systems. They lie beyond table 3.2.

This accounting definition identifies various species of slavery across economies. It singles out six major species of slavery in vastly different economies in table 3.2. Due to our fragmentary knowledge, the list may be incomplete.\(^{23}\) This is a selection limited in enumeration of species (there may be more than six major species) and in location of enumerated species (there are more examples of each species and some cases may need relocation or exception). We submit table 3.2 not as a comprehensive analysis of slavery but only as a cross-section of trilateral heterogeneity exemplified by slavery. This is an exercise in three-dimensional accounting. All possible factual corrections reinforce the table if they verify three-dimensional heterogeneity and refute it otherwise.

\(^{21}\)This point originates in John Locke. “This freedom from absolute, arbitrary power, is so necessary to, and closely joyned with a man’s preservation, that he cannot part with, but by what forfeits his preservation and life together. For a man, not having the power of his own life, cannot, by compact, or his own consent, enslave himself to any one, nor put himself under the absolute, arbitrary power of another, to take away his life, when he pleases. No body can give more power than he has himself, and he that cannot take away his own life, cannot give another power over it. (...) This is the perfect condition of slavery, which is nothing else, but the state of war continued, between a lawful conqueror, and a captive. For, if once compact enter between them, and make an agreement for a limited power on the one side, and obedience on the other, the state of war and slavery ceases, as long as the compact endures. For, as has been said, no man can, by agreement, pass over to another that which he hath not in himself, a power over his own life.” John Locke, “The Second Treatise of Government. An Essay Concerning the True Original, Extent, and End of Civil Government,” in John Locke, Two Treatises of Government (Cambridge: Cambridge University Press, 1988), pp. 284-285.

\(^{22}\)This was fully understood by the contemporaries. Aleksandr Pushkin wrote in 1820: “Will I see, oh friends, the people non-oppressed and slavery fallen by the fiat of the Tsar?” Mikhail Lermontov wrote in 1837: “Farewell, unwashed Russia, the country of slaves, the country of masters (...) May it be that behind the mountain ridge of the Caucasus I will be hidden from your pashas,”—a rather prescient analogy with the Ottoman Empire.

This selection of the six species of slavery is empirical but not ad hoc. The accounting definition of slavery identifies its species by their origin. There are six typical origins of slavery: (1) trade, (2) debt, (3) spoils of war, (4) taxation, (5) draft, and (6) capture. They correspond to the six species in table 3.2. The origin of each species corresponds to the interplay between government restriction, if any, and property types.

<table>
<thead>
<tr>
<th>Species</th>
<th>Origin</th>
<th>Government</th>
<th>Property</th>
</tr>
</thead>
<tbody>
<tr>
<td>Private slavery</td>
<td>Trade</td>
<td>Non-restrictive</td>
<td>Private</td>
</tr>
<tr>
<td>Debt-based slavery</td>
<td>Debt</td>
<td>Restrictive</td>
<td>Private</td>
</tr>
<tr>
<td>Government-supplied slavery</td>
<td>Spoils of war</td>
<td>Restrictive</td>
<td>Private</td>
</tr>
<tr>
<td>Franchised slavery</td>
<td>Taxation</td>
<td>Restrictive</td>
<td>Private</td>
</tr>
<tr>
<td>Centrally planned, state plantation slavery</td>
<td>Draft</td>
<td>Restrictive</td>
<td>State</td>
</tr>
<tr>
<td>Enslavement</td>
<td>Capture</td>
<td>Non-restrictive and restrictive</td>
<td>Common and local government or private</td>
</tr>
</tbody>
</table>

1. Private slavery in the U.S. Antebellum South, Cuba, Brazil, and other parts of the Americas ca. 1600-1860 originated in private Transatlantic trade. Slaves were worked on private plantations producing labor-intensive cash crops, such as sugar, cotton, rice, and tobacco.\(^{24}\) Slaves were sold and bought in primary and secondary markets. Private trade at the point of origin, private secondary markets of slaves, and private property on land and slaves did not require government involvement beyond regular enforcement of contracts and property rights. The private trade origin of slavery fits the conjunction of non-restrictive government and private property.

2. In the archaic Mediterranean and Near-Eastern economies, debt-based private slavery was the earliest (and, in Greece and Rome, transient) species of slavery. It combined private contract between debtors, who would become slaves, and creditors, who would become owners, and enforcement of this contract by the local government, which might include the original act of state

enslavement. Private property interplayed with restrictive government.

3. The principal but largely overlooked feature of slavery in classical Greece and Rome is that it is government-supplied by conquests and distributed to private owners as the spoils of war. The government allocated to citizens (1) land and slaves to cultivate it and (2) private concessions in silver and other metal mining and slaves to mine them. Plantations (e.g., Roman latifundia) accumulated both through private trade in land and slaves and through government allocations. This system matched restrictive government and private property.

4. Franchised slavery in Russia in 1497-1861, in Korea in 1392-1725, and in several African pre-colonial Islamic states originated in franchised taxation. The centralized government in many medieval and pre-modern economies in Asia and Africa and in Russia assigned simultaneously tax collection quotas and land allocations to provincial and local officials. They could collect tax revenues for their own upkeep from peasant communities on the land under their control only after and as a residual of the fixed revenue targets due to the central government. We call this system franchised taxation. All non-remitted tax balances accrue to the franchisees’ debt. In order to enforce remittance of tax revenues in full, the government at the next stage turned land into inheritable private property.


of these officials, which made the tax collection duties and debts hereditary. Franchised taxation acquired an added feature in the countries with the open land and a high land/labor ratio where peasants could escape the tax levy. The government bonded peasants to land and to local land-owning tax officials in order to enforce tax collection. To make the tax debt of the franchisees (unpaid tax revenue balances) collectible, the government made their bonded peasants tradeable and inheritable assets. This is the specific origin of franchised slavery. It combines restrictive government with private property.

5. Both the rise and the abolition of the Transatlantic slave trade engendered a unique species of slavery—centrally planned, state plantation slavery in Dahomey, ca. 1680-1892. The government amassed slaves for export to Brazil and the Caribbean and alternated between their work on state plantations and slave trade. Competitive slave trade under government control constituted private concessions and can be called franchised slave trade. When the Transatlantic slave trade was banned in the 19th century, the Dahomey government substituted domestic plantation labor in response to the growing European and Arab demand for plantation crops (palm oil, peanut oil, etc.).

Forced production on state plantations was a species of central planning combined with state slavery and franchised slave trade. One can mark near-total government and state ownership for this species of slavery.

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6. Enslavement encapsulates hundreds of sub-species of slavery through history around the world. The best documented cases include pre-colonial Africa, early medieval Germanic societies, the Vikings ca. 800-1050, Iran in 1510-1850, various historical Arab states, the Ottoman Empire, pre-colonial India (e.g., Malabar and other provinces), Burma, Thailand, the Indiansocieties of the American Northwest coast (Kwakiutl and York), spin-offs of piracy, and numerous other worldwide incidences.\textsuperscript{30} For each individual not born in slavery, enslavement precedes other species of slavery. It originates in capture and ends in what Orlando Patterson termed ‘social death.’\textsuperscript{31} In accounting terms, enslavement confiscates private body and human capital and converts them into common property between the individual and either private captors or the local government and national state which enslaved the individual for trade. Enslavement automatically starts with making property common and ends up in private, local government, or national state ownership in various empirical cases under either limited or restrictive government.

This grim journey around the world of slaves and masters unveils universal bilateral heterogeneity on the government and property dimensions. Any extent of government restriction, from limited in the Antebellum U.S. South to near-total in Dahomey, can coexist with any property type, from common property through enslavement to private and state ownership of human beings.

On the income dimension, slavery always entails common income. Remuneration of slaves, usually inkind, is always smaller than their economic contribution. Modern research has shown that the very raison d’


\textsuperscript{31}Orlando Patterson, \textit{Slavery and Social Death}, pp. 105-131.
"The benefit of coerced labor to the slave owner involves a redistribution of that part of the income above subsistence that would go to a free worker."^{32}

If this were not so, slave owners would have waged manumissions to discount transaction costs of maintenance and enforcement, and slavery would have been a minor and transient phenomenon. Alas, manumissions occurred only when the slave population grew disproportionally relative to available land and the marginal product of slaves rendered lower than maintenance and enforcement costs. The producer surplus for redistributive transfer from slaves to owners dissipated. At that point, it became efficient to select the most productive slaves and convert them into indentured tenants. Owners moved to assign fees and give a buyout option to those slaves who could pay high rent in cash and in kind, by labor and a share of output.^{33} The best known massive case of manumission was agricultural servitude in the Roman Empire called coloni.^{34} Its selective origin explains why slavery and coloni were complementary. Indentured servitude instead of contractual rent ensured a buyout fee. Still, this selective coloni was a milder species of coerced labor than universal serfdom which replaced it in Western Europe when labor shortages reemerged. But this is a story for another occasion. By and large, manumissions were rare.^{35} In all major cases except Rome, slavery was abolished by government fiat. The secular persistence of slavery in each empirical case proves that it carries redistribution of output and/or income. Otherwise slavery would not exist by the voluntary choice of slave owners. They would abolish it through manumission.

All species of slavery make income common. Each species of slavery exhibits its own specific rate of redistribution of income and/or output and its own specific rate of government restriction. We tried to approximate them in Annexes 3.1 and 3.2. These estimates are as rough as can be expected when one lumps together numerous cases of each species in different countries and epochs. These are crudely estimated averages for many historical specimens of each species of slavery. Examination of each specific

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^{33}This selection by owners and self-selection by slaves solves the problem of asymmetric information in a way akin to sharecropping. On the latter, see a summary and the literature in Joseph E. Stiglitz, “Information and the Change in the Paradigm in Economics,” American Economic Review 92, no. 3 (June 2002): 460-501.


case will not only refine measurements but increase the three-dimensional variation throughout the map. The purpose of this exercise is not an accurate evaluation of the rate of extraction of producer surpluses but a demonstration of three-dimensional heterogeneity. Table 3.2 offers its qualitative assessment. Annexes 3.1 and 3.2 locate all species of slavery in different cells which indicate different deciles of income redistribution and government restriction. Slavery can combine various but always high extent of income redistribution with any, low or high, extent of government restriction and with any type of property.

Most importantly, limited government and private property coexist with high extent of common income under private, trade-based slavery in the Antebellum U.S. South and the Americas. This represents a major case of non-state socialism. A legal point leads to the above economic inference:

“In the legal sense, the slave has become the subject of a master rather than the subject of a state. The master takes over the rule-generating and enforcing functions of the state. (...) [This means] extrastatal jurisdiction (...) [and] the existence of an exempt sphere of private justice.”

The treatment of private slavery as non-state socialism may sound paradoxical but it rests on a simple identity. Socialism is redistribution of income and/or output. Private slavery is redistribution of income and/or output conducted extra-state. Private slavery joins Enterprise Network Socialism, brigandry, piracy, voluntary communes (e.g., the Plymouth Colony), and primordial common output (communism without government) in the southern strip in figure 3.3 and in the bottom rows in Annexes 3.1 and 3.2 as a species of non-state socialism.

More paradoxical and rather unsettling are implications of slavery for property rights.

1. The slave trade constitutes privatization of assets because it converts common property of enslavement into private property.

2. Abolition of private slavery constitutes infringement upon and abrogation of property rights of owners and confiscation of private assets by the government. It is transitory nationalization of assets until human capital is vested in the emancipated human bodies.

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Multi-dimensional heterogeneity: Central planning in Nazi Germany

In addition to post-Communist Russia and China and to private slavery, central planning in Nazi Germany makes sharp distinctions between the income dimension, the government dimension, and the property dimension. Central planning in Nazi Germany combined near-total government with universal redistribution of income but based both on private property. This secured better incentives than Communist central planning based on state ownership. Owners and managers in Nazi Germany had more incentives in meeting quotas of forced production and forced delivery than bureaucratic managers in Communist central plan economies. This is why Joseph Stalin shot managers to enforce central planning, while Hitler employed profit to the same end.

Specifically, the Nazi regime preferred family-owned firms as opposed to shareholding corporations because it is easier for the government to control production under concentrated rather than dispersed ownership. Further concentration was achieved through forced cartelization of private industries under government planning. Smaller private businesses were also integrated into vertical and horizontal guilds. The government forced private companies to make subsidized loans to a conglomerate of new industrial plants which was jointly owned by the government and private concerns (Herman Goering Werke). At the same time, the government subsidized plant expansion, research, and development among private firms across industries, financed construction, and provided relief to private farms and agricultural businesses.

All these subsidies accrued in exchange for meeting output quotas. This is the principal systemic feature of central planning familiar from the experience of Communist countries. It combines investment

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38. "I absolutely insist on protecting private property. It is natural and salutary that the individual should be inspired by the wish to devote a part of the income from his work to building up and expanding a family estate. Suppose the estate consists of a factory. I regard it as axiomatic, in the ordinary way, that this factory will be better run by one of the members of the family than it would be by a State functionary—providing, of course, that the family remains healthy. In this sense, we must encourage private initiative. On the other hand, I am distinctly opposed to property in the form of anonymous participation in societies of shareholders. This sort of shareholder produces no other effort but that of investing his money, and thus he becomes the chief beneficiary of other people’s effort: the workers’ zest for their job, the ideas of an engineer of genius, the skill of an experienced administrator. (...) Such gains belong by right to the nation, which alone can draw a legitimate profit from them. In this way, at least, those who create these profits—the engineers and workers—are entitled to be the beneficiaries. In my view, joint-stock companies should pass in their entirety under the control of the State.” Hitler’s Table Talk 1941-1944: His Private Conversations (New York: Enigma Books, 2000), pp. 362-363.

subsidies and the cash flow subsidies for paying off arrears (known as the soft budget constraint)\textsuperscript{40}. In addition to output quotas of forced production, the Nazi government capped profits, managed investment, and imposed wage and price controls. Forced labor also resembled Communist countries even in minor details. Work books (Arbeitsbuch) restricted job change. All males had to participate in compulsory labor service; youth were also inducted into seasonal agricultural service. Like Communist central plan economies, Germany functioned as the nation-enterprise, but it consisted largely of privately owned firms.

\textit{Constraints to multiple combinations and multi-dimensional heterogeneity}

Multi-dimensional slavery, Nazi Germany, and post-Communist Russia and China exemplify

\textsuperscript{40}As we mentioned in Chapter 1, the nation-wide soft budget constraints necessarily accompany forced production. Their sole raison d’etre is to enforce output delivery and production quotas. This enforcement mechanism is two-sided. Every producer enterprise is a buyer of inputs and a seller of output. Over the flow of payments, the seller-enterprises are creditors and the buyer-enterprises debtors. When payment arrears arise in trade credit, an automatic cash flow subsidy from the government to debtor-enterprises finances payment of arrears. This enables illiquid buyers to keep the centrally-planned supply chain in motion. Creditor-enterprises cannot divert inputs from government-designated buyers using arrears as an excuse. This keeps the centrally-planned supply chain intact. This, in turn, enforces output delivery from sellers to centrally-planned buyers across the supply chain. This makes a cash flow subsidy to debtors a forced subsidy to creditors. On the other side of the coin, arrears and negative cash flow balances among debtor-enterprises reveal their failure to fulfill production quotas or output delivery quotas (that is, diversion of output to internal consumption) and/or overuse of inputs. This is a violation of central planning. Managers are then punished and production quotas and delivery quotas enforced. This makes a cash flow subsidy to finance payment of arrears a forced subsidy to debtor-enterprises. See also Michael S. Bernstam and Alvin Rabushka, \textit{Fixing Russia’s Banks: A Proposal for Growth} (Stanford: Hoover Institution Press, 1998), pp. 23-25. In accounting terms, the soft budget constraints represent a special, \textit{financing} subsidy to pay-off trade credit arrears. Operationally, it works as a regularly reactivated credit line from the monetary and banking system followed by the debt write-off. The term ‘the soft budget constraints’ developed as a notion of this subsidy under central planning. How this term sounds, it is too often misconstrued as a benevolent government subsidy to dependent enterprises. In reality, it is a forced subsidy to unwilling enterprises. It forces enterprises into the production line. Forced production needs these forced subsidies to close the system. This is why the soft budget constraints had evolved independently under different species of central planning in the USSR, Yugoslavia, and Nazi Germany. The notion of the soft budget constraints is often extended to include a more familiar phenomenon, occasional sectoral bailouts in the Western Welfare States and developing economies. These occasional sectoral bailouts constitute the cash flow subsidies financing payment of arrears. As such, they operationally qualify as the soft budget constraints. This dissection readily makes up a taxonomy. It distinguishes the two types of the soft budget constraints. One is the nation-wide, automatic forced subsidy under central planning. The second is the occasional sectoral bailouts in the Welfare States and developing economies. They are not forced by the government onto enterprises but are rather solicited from the government by firms. This systemic distinction is missing in the literature which views all subsidies as solicitations and does not consider the existence of forced subsidies. Another missing systemic distinction is more important. The principal feature of both types of the soft budget constraints is that they are government-given, not enterprise-taken. They are given \textit{by} the government, not \textit{taken from} the government. To use a sharp economic distinction, they are exogenous, not endogenous, to enterprises and firms. The self-enforceable tax subsidy under Enterprise Network Socialism is taken by enterprises from the government. It relates to the soft budget constraints the same way as counterfeiting and robbery from the Central Bank and the Treasury relate to government subsidies. The discussion in Chapter 1 submits that this is not a metaphor but a characterization. The difference is between governmental subsidies vs. non-governmental confiscations. These are the specimens of state socialism vs. non-state socialism...
FIGURE 3.3. THE WORLD ON ONE, TWO, THREE, AND FOUR DIMENSIONS

PRIVATE   <———————                                 INCOME                             ——————— > COMMON

Industrial central planning, forced production: USSR, China, pre-1978

Pre-industrial Europe, developing countries, and historical economies around the world

Market economy, restrictive government: China, post-1978

Market economy, limited government: classical England, U.S., the Asian Tigers, Western Europe (pre-Welfare States)

Private slavery, brigandry, piracy, and other private predation

Primordial caves

Enterprise Network Socialism, symbiont government: Russia, 1990s, the CIS

Private Cooperative Local State Common

Property rights (Ownership)
FIGURE 3.4. PROPERTY TYPES ON THE INCOME AND GOVERNMENT DIMENSIONS

- **Property rights (Ownership)**
  - Private
  - Cooperative
  - Local
  - State
  - Common

**Income**
- Private
- Cooperative
- Local
- State
- Common

**Government**
- Non-restrictive
- Restrictive

- **PRIVATE** <- **INCOME** <- **COMMON**

- **State-owned enterprises under central planning (the nation-enterprise): USSR, China, pre-1978**
- **Franchised serfdom: Russia, 1497-1861**
- **State-owned firms with incomes common with the government: Western European Welfare States**
- **State, temple, communal, and private land, forced delivery and irrigation: ancient Egypt, Mesopotamia, China, Inca**
- **Family farms on leased, state-owned land: China, post-1978**
- **Communal land as a fiscal device: Imperial Russia**
- **Local government-owned firms (TVEs) with private incomes: China, post-1978**
- **State-owned firms with incomes common with the government: Western European Welfare States**
- **Voluntary plantation communes: Plymouth colony, 1620s, Russia, 1918-20**
- **Enslavement: pre-colonial Africa and world-wide episodes**
- **State-owned firms and banks nationalized in the Welfare States: Western Europe, 1930s-1980s**
- **Subsidized communal agribusinesses (Kibbutzim): Israel**
- **Neolithic storages of output surpluses and private land occupancy, private debt slavery, post-8000 B.C.**
- **Private slavery in market and state-socialist economies: U.S., Cuba, Brazil, 1600-1860, and plantations: Latin America, 1500 on**

- **Privately-owned feudal manors with servitudes and fees: Europe, 700-1400**
- **Centralized privately-run colonies: Java, 1700s**
- **State, temple, communal, and private land, forced delivery and irrigation: ancient Egypt, Mesopotamia, China, Inca**
- **State-owned firms with incomes common with the government: Western European Welfare States**
- **Enslavement: pre-colonial Africa and world-wide episodes**
- **State-owned firms and banks nationalized in the Welfare States: Western Europe, 1930s-1980s**
- **Subsidized communal agribusinesses (Kibbutzim): Israel**
- **Neolithic storages of output surpluses and private land occupancy, private debt slavery, post-8000 B.C.**
- **Private slavery in market and state-socialist economies: U.S., Cuba, Brazil, 1600-1860, and plantations: Latin America, 1500 on**

- **Franchised serfdom: Russia, 1497-1861**
- **State-owned firms with incomes common with the government: Western European Welfare States**
- **Enslavement: pre-colonial Africa and world-wide episodes**
- **State-owned firms and banks nationalized in the Welfare States: Western Europe, 1930s-1980s**
- **Subsidized communal agribusinesses (Kibbutzim): Israel**
- **Neolithic storages of output surpluses and private land occupancy, private debt slavery, post-8000 B.C.**
- **Private slavery in market and state-socialist economies: U.S., Cuba, Brazil, 1600-1860, and plantations: Latin America, 1500 on**

- **Private plots on collective or state land, USSR**
- **Franchised serfdom: Russia, 1497-1861**
- **State-owned firms with incomes common with the government: Western European Welfare States**
- **State-owned firms with incomes common with the government: Western European Welfare States**
- **Subsidized communal agribusinesses (Kibbutzim): Israel**
- **Neolithic storages of output surpluses and private land occupancy, private debt slavery, post-8000 B.C.**
- **Private slavery in market and state-socialist economies: U.S., Cuba, Brazil, 1600-1860, and plantations: Latin America, 1500 on**

- **State-owned enterprises under central planning (the nation-enterprise): USSR, China, pre-1978**
- **Franchised serfdom: Russia, 1497-1861**
- **State-owned firms with incomes common with the government: Western European Welfare States**
- **State-owned firms with incomes common with the government: Western European Welfare States**
- **Subsidized communal agribusinesses (Kibbutzim): Israel**
- **Neolithic storages of output surpluses and private land occupancy, private debt slavery, post-8000 B.C.**
- **Private slavery in market and state-socialist economies: U.S., Cuba, Brazil, 1600-1860, and plantations: Latin America, 1500 on**
FIGURE 3.5. PROPERTY TYPES, INCOME TYPES, AND GOVERNMENT RESTRICTION: 33 EMPIRICAL EPISODES

(Common property is in red. The crowd symbolizes common income; double crowd near-total common income)

1. Private ownership
2. Cooperative
3. Local
4. State ownership
5. Common property

Privatized ———— Socialized

Privately-owned corporate industries under government planning: Germany, 1933-45
Private land and trade under franchised state socialism: medieval Arab states, India
Privately-owned, state-supplied slavery, state land, mines: ancient Greece, Rome
Centralized privately-run colonies: Java, 1700s
Private plantations, peonage: Latin America
Privately-owned corporations with government-directed investment: Japan, 1950s-70s
Privately-owned feudal manors with servitudes and fees: Europe, 700-1400
Privately-owned pre-industrial firms, guilds, and estates with privileges: Europe, 1400-1700
Peasant homesteads on long-term leases of land: Europe, 1400-1800
Private slavery in market and state-socialist economies: U.S., Cuba, Brazil, 1600-1860
The redistributive network of privatized and state enterprises: Russia, 1990s
Private family farms: U.S., Western Europe
Privately-owned firms with newly-made productive assets and private income: U.S., industrial Europe, Japan

State-owned enterprises under central planning (the nation-enterprise): USSR, China, pre-1978
State, temple, communal, and private land, forced delivery and irrigation: ancient Egypt, Mesopotamia, China, Inca
Franchised serfdom: Russia, 1497-1861
Family farms on leased, state-owned land: China, post-1978

Labor-owned and managed enterprises with central plan: Yugoslavia, 1950-80s
Subsidized communal agribusinesses (Kibbutzim): Israel
Neolithic storages of output surpluses and private occupancy of land, private debt slavery, post-8000 B.C.
State-owned firms with incomes common with the government: Western European Welfare States
State-owned firms with incomes common with the government: Latin America, India, Africa
State-owned enterprises under central planning (the nation-enterprise): USSR, China, pre-1978
Private and state-owned firms and farms with incomes common with the government: Western European Welfare States

Local government-owned firms (TVEs) with private incomes: China, post-1978
Enslavement: pre-colonial Africa and world-wide episodes
Voluntary plantation communes: Plymouth colony, 1620s, Russia, 1918-20
Private firms and banks nationalized in the Welfare States: Western Europe, 1930s-1980s

Communal land, monasteries, conquests, brigandry, piracy, financial looting

Cooperatives in forestry and fishery: Canada, U.S.
Local turnpike trusts, city corporations, private canals: England, since 1630

Common property resources: primordial societies

Assets with open access to private predation: Communal land, monasteries, conquests, brigandry, piracy, financial looting

Private firms and banks nationalized in the Welfare States: Western Europe, 1930s-1980s

Privatized < ———— Socialized

PROPERTY TYPES

NON-RESTRICTIVE > RESTRICTIVE
heterogeneity between income redistribution, government restriction, and property types. Other cases of multi-dimensional heterogeneity abound at all levels aggregation and disaggregation. A quick glance at national economies and supra-national regions in figure 3.3, at 33 property episodes in figures 3.4 to 3.6, and at 110 economic species in Annex 3.2 reveals the world dispersed throughout four dimensions.

Multi-dimensional heterogeneity of the world is vast but not universal. Multiple trilateral combinations are constrained. The next exercise is concerned with these constraints. On the low and high ends of income redistribution, government restriction, and property types, four bilateral combinations do not and cannot exist. Their dissection gives an unexpected insight into the nature of property rights and government.

The main exhibit for this expedition is Annexes 3.2 and 3.3 although figures 3.3 to 3.6 join in. Annex 3.3 makes the same constellation of economic species as Annex 3.2 but reverses the axes of the two-dimensional frame. The government dimension from absent to total government (from zero to 100 percent government restriction) becomes the horizontal axis. The income dimension from totally private to totally common income (from zero to 100 percent income redistribution) serves as the vertical axis. This reversal helps identify the ranges of bilateral impossibilities when they are determined by the absent and near-total government.

Annex 3.3 also adds the rings of the sub-species of private income economies (market economies) with limited and restrictive governments and the sub-species of enslavement. Annexes 3.1 and 3.2 over-simplified their measurements in crudely estimated averages and lumped many sub-species together in one circle. Central plan and similar economies with near-total common income and total and near-total government are sub-divided into 22 separate species in Annexes 3.1 and 3.2. For example, terror-enforced central planning in the USSR ca. 1940-53, in China ca. 1958-71, in Hungary ca. 1949-53, etc., makes up a different species from multi-industry central planning in the USSR, China, Hungary before and after these periods. Hungary ca. 1968-89 and Poland in the 1980s are treated as a separate species of reformed central planning with enterprise discretion, along with state-coordinated labor management in Communist Yugoslavia, which constitutes another species sui generis. Central planning over private corporations in Nazi Germany is another separate species. A defense for this apparent analytical discrimination in favor of a refined taxonomy of central planning against crude averaging and stacking of market economies and enslavement is rather lame. Enslavement is a complicated subject and only additional research, beyond the scope of this book, can tell whether government enslavement as opposed to tribal enslavement and, separately, to private enslavement qualify as separate species or as sub-species, and how to measure them in so many cases of enslavement. Market economies with restrictive government, such as the new-entrant market sector within the two-track economy in China, Vietnam, Cambodia, Myanmar, and elsewhere are new and evolving phenomena. It would require more research to even suggest whether or not to treat, say, the post-central plan Vietnamese economy as a sub-species along with China or a separate species. Western market economies with private income and limited government present an opposite but an even more daunting problem. Exactly because there is so much conflicting literature, it would constitute a separate subject in itself to adjudicate whether continental
ANNEX 3.2
THE FOUR-DIMENSIONAL TABLE OF ECONOMIC SPECIES

Notes:
1. Codes are listed in the legend for the two-dimensional table of economic species.
2. Colors designate property types which dominate a given economic species:

   - Blue: Private
   - Yellow: Cooperative
   - Green: Local government
   - Brown: National state
   - Red: Common

3. The size of the bubble estimates the rate of remuneration for the production of ideas, invention, and technological innovation.
ANNEX 3.3
FOUR-DIMENSIONAL HETEROGENEITY OF ECONOMIC SPECIES

Notes:
1. Codes are listed in the legend for the two-dimensional table of economic species
2. Colors designate property types which dominate a given economic species:
   - Blue: Private
   - Yellow: Cooperative
   - Green: Local government
   - Brown: National state
   - Red: Common
3. The size of the bubble estimates the rate of remuneration for the production of ideas, invention, and technological innovation
Western Europe is so much systemically different from England and the U.S. during various periods since the Industrial Revolution as to warrant one or more separate species. Measuring individual Western market economies or their groups, be they one or more species or sub-species, by the rates of income redistribution and government restriction and by some standard of property types is also a formidable technical project beyond the scope of our book. If this is not hard enough, there are the Asian Tigers. At this point, the lame defense rests.

As a palliative, Annex 3.3 adds the sub-species of enslavement as red rings (red because of common property). It adds the green rings for the sub-species of the new-entrant market sector with private income and restrictive government in a two-track economy (green because of the dominance of local government property in Township and Village Enterprises, TVEs). It adds the sub-species of Western market economies with private income and limited government as blue rings and one brown ring (blue stands for private property, brown marks state ownership). These rings of sub-species add to and extend along the income and government dimensions the average values estimated in the circles of their respective species. In the universe of 110 economic species, they bear the Tropic of Free Market, the Tropic of Restricted Market, and the Tropic of Enslavement.

Annex 3.3 along with other figures readily displays the four areas of bilateral determination.

1. The red scatter: Common property marked in red always coincides with common income. This can be best viewed in Annex 3.2 where the income dimension is the latitude, and also in figures 3.3, 3.4 and 3.5. Every property episode with full or partial common property in figures 3.4 and 3.5 coincides with common income. Every red circle of economic species with common property in Annex 3.2 and every red, common property stripe in the property types attachments on the map in figure 3.3 lie in the area of common income. This pattern applies equally to continuous common property in primordial societies and communes, to enslavement, and to sporadic confiscations of property by governments or private predators. They automatically make income common because returns on assets (land or capital) are or become common. Common property renders private income impossible.

2. The no-government, no-ownership zone: Absent or near-absent government rules out property rights (ownership) and carries common property by default. This is the zone of collective predation. The bottom strip in Annex 3.2, with government restriction less than five percent of GDP, and in figures 3.4 and 3.5 covers this zone. It encompasses primordial common output, brigandry, and piracy.

3. The no-government, no-private income zone: Zero or near-zero government cannot exclude takers from the income of makers. It carries common income by default. This is the same zone of collective predation—primordial common output, brigandry, and piracy. Natural men are collective predators and redistributors. In the absence of near-absence of government, most
people confiscate other men’s assets, output, and income.\textsuperscript{41} Private income is existentially impossible in the absence of government restriction of collective predation. Annex 3.3 marks this zone of existential impossibility. The no-government strip with income redistribution less than twenty percent of GDP is crossed out. It is vacant.

4. \textit{The high end of near-total government, a no-private income zone:} Near-total government can be found only among the most restrictive species of central planning. All central plan economies practice forced delivery of output to the government and/or forced production. Income redistribution exceeds 70 percent of GDP which can be called near-total common income. All 22 species of central planning enumerated in Annexes 3.1 and 3.2 have restrictive government. In half of them, government control of economic activity can be estimated to exceed 80 percent of GDP, which one can call near-total government. Annexes 3.1 and 3.2 place these extreme species of forced delivery of output and/or forced production in the top six cells. They cover the ranges of government restriction above 80 percent of GDP and income redistribution above 70 percent of GDP. Examples of these extreme species of forced delivery to the government wholesale monopsony and monopoly include agricultural central planning in ancient Egypt, Mesopotamia, China, Japan, India, the Great Zimbabwe, and the Maya and Aztec Empires, the agricultural commune in the Inca Empire, delivery quotas and confiscation of output during War Communism in Russia in 1918-20 and the Reign of Terror in France in 1793-94, collectivized agriculture in Algeria in 1963-65, and similar cases. Among the extreme species of forced production are terror-enforced central planning in the USSR ca 1940-53, China ca. 1958-71, and parts of Eastern Europe ca. 1949-53, multi-industry central planning in the USSR, China, and Eastern Europe before and after these respective periods, industrial commune in North Korea, agricultural central plan commune in Cambodia under Khmer Rouge in 1975-79, and centrally planned slave trade and forced production of slaves on state plantations in Dahomey ca 1680-1892. The species in this range are the creme of cremes or the extreme of the extremes, depending on one’s values. Their lonely constellation is salient in the north-eastern corner in Annexes 3.1 and 3.3. Only central planning with its ensuing near-total common income can exist under near-total government. Private income is ruled out. Annex 3.3 marks this zone of existential impossibility. It crosses out private income and partial common income in the zone of near-total government and near-total common income. This zone is vacant.

\textsuperscript{41}“Nature hath given all things to all men; insomuch, that \textit{jus} and \textit{utile}, right and profit, is the same thing. But that right of all men to all things, is in effect no better than if no man had right to any thing. For there is little use and benefit of the right a man hath, when another as strong, or stronger than himself, hath right to the same.” Thomas Hobbes, \textit{The Elements of Law Natural and Politic}, p. 80. Chapters 7 and 8 discuss how the invention of government was an evolutionary survival strategy which enabled primordial humans to store, protect, and ration output in order to smooth consumption. This strategy placed collective predation under control.
The fourth, externalities dimension, adds to multiplicity of combinations and enhances multi-dimensional heterogeneity. The rate of internalization of externalities (especially, compensation of spillovers from production of ideas, invention, and technological innovation) is uncorrelated with income redistribution, government restriction, and property types in all observable empirical cases. We discussed major examples in Chapter 2. Compensation for or government support of science and technological advance started in medieval Islamic states and was most pronounced in such opposite systems as Western market economies, modern Welfare States, and central plan economies in Communist countries and Nazi Germany. Annex 3.2 depicts a vast dispersion of partially compensated spillovers by large-size bubbles. They represent a minority of empirical cases, or else historical and developing economies would have been much more productive and prosperous than in reality. But this minority of cases is scattered across the map.

Annexes 3.2 and 3.3 display property types only when they are dominant in a given economic system, rather than multiple property types which populate each system in practice. This is why confiscations and nationalizations of assets (land, enterprises, banks, household deposits, etc.), which occur sporadically under near-total government and manifest common property, do not appear in Annexes 3.2 and 3.3. Figures 3.4 and 3.5 display multiple property types in each property episode and include common property under near-total government.

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One can file a summary report of this empirical expedition.

<table>
<thead>
<tr>
<th>Ranges of determination</th>
<th>Ranges of impossibility</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Common property creates common income</td>
<td>Common property with private income</td>
</tr>
<tr>
<td>2 Zero or near-zero government breeds common property</td>
<td>Zero or near-zero government with property rights</td>
</tr>
<tr>
<td>3 Zero or near-zero government begets common income</td>
<td>Zero or near-zero government with private income</td>
</tr>
<tr>
<td>4 Near-total government induces near-total common income</td>
<td>Near-total government with private income (or even with partial common income)</td>
</tr>
</tbody>
</table>

Beyond these ranges, any trilateral combination of income redistribution, government restriction, and property types is possible and empirically observable; any rate of income redistribution can combine with any extent of government restriction and any property type.42

Within these ranges, two variables out of three are locked in a given constrained combination but their interplay with the third variable may create multilateral heterogeneity.

- Common property can coexist only with common income but both can combine with any type and extent of government restriction, from zero to total. The red scatter of economic species in annex 3.2 and 3.3 (the latter includes the Tropic of Enslavement) and a more close look at property episodes in figures 3.4 and 3.5 illustrate this heterogeneity.43

- Near-total government can coexist with common income only, but both can combine with any

---

42 The fourth, externalities dimension, adds to multiplicity of combinations and enhances multi-dimensional heterogeneity. The rate of internalization of externalities (especially, compensation of spillovers from production of ideas, invention, and technological innovation) is uncorrelated with income redistribution, government restriction, and property types in all observable empirical cases. We discussed major examples in Chapter 2. Compensation for or government support of science and technological advance started in medieval Islamic states and was most pronounced in such opposite systems as Western market economies, modern Welfare States, and central plan economies in Communist countries and Nazi Germany. Annex 3.2 depicts a vast dispersion of partially compensated spillovers by large-size bubbles. They represent a minority of empirical cases, or else historical and developing economies would have been much more productive and prosperous than in reality. But this minority of cases is scattered across the map.

43 Annexes 3.2 and 3.3 display property types only when they are dominant in a given economic system, rather than multiple property types which populate each system in practice. This is why confiscations and nationalizations of assets (land, enterprises, banks, household deposits, etc.), which occur sporadically under near-total government and manifest common property, do not appear in Annexes 3.2 and 3.3. Figures 3.4 and 3.5 display multiple property types in each property episode and include common property under near-total government.
property type. Examples in Annex 3.2 and figures 3.4 and 3.5 include private property (e.g., under agricultural central planning), cooperative (e.g., agricultural communes under War Communism in Russia), local government (e.g., a segment of municipal ownership in Communist China in 1971-78), state ownership (most Communist countries), and common property (sweeping confiscations and nationalizations).

Absent or near-absent government is the only determinant that excludes any multilateral heterogeneity. It always coincides with common property and common income. This is the zone of collective predation under primordial common output, brigandry, and piracy.

A filer can attach to this report a transparent scheme akin to an x-ray of figures 3.3 and 3.4 and Annex 3.2. Just a quick glance at the maps makes the same impression. Again, income redistribution from zero to 100 percent of GDP is the latitude and government restriction from zero to 100 percent of GDP the longitude.

---

Vacant space:
Government restriction > 80% of GDP,
income redistribution < 70% of GDP

Constrained heterogeneity:
Government restriction > 80% of GDP, income redistribution > 70% of GDP, any property type

Unconstrained heterogeneity:
Government restriction from 5% to 80% of GDP,
income redistribution from 0% to 70% of GDP,
any property type (but common property always entails common income—see the red scatter)

Vacant space:
Government restriction <5% of GDP, income redistribution <20% of GDP

No heterogeneity:
Government restriction <5% of GDP, income redistribution >20% of GDP, common property

The empirical layout and the preceding discussion define not only the ranges of determination and possibilities. In reverse, they open up the ranges of possibilities and indeterminacy between the extent of government restriction, income redistribution and property types. These ranges of possibilities and indeterminacy go to the heart of interrelationships between property rights, government restriction, and income redistribution.
Property rights, government restriction, and income redistribution

One more tabular summary sets the stage. It condenses all figures of this chapter and the table of economic species. It puts together principal empirical findings from the previous discussion on the patterns of multi-dimensional heterogeneity. We use tinted cells to indicate the areas of bilateral determination. These areas only roughly correspond to the actual, quantitative ranges identified earlier. The purple color marks the range wherein common property creates common income. The pink color indicates the ranges where zero or near-zero government begets common property and common income and where near-total government induces near-total common income.

<table>
<thead>
<tr>
<th>Government</th>
<th>Zero or near-zero</th>
<th>More than near-zero, less than near-total (non-restrictive or restrictive)</th>
<th>Near-total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Property</td>
<td>Common</td>
<td>Property rights: private, cooperative, local, or state</td>
<td>Common</td>
</tr>
<tr>
<td>Income</td>
<td>Common, all extent</td>
<td>Private</td>
<td>Common, partial</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Common, near-total</td>
</tr>
</tbody>
</table>

The implications reveal themselves when one looks at this table row by row, upward and downward, and checks specific combinations against empirical figures and the table of economic species in Annex 3.2. The next, accounting section demonstrates that the following implications have simple and sound accounting reasons (hint one: returns on assets make up only a fraction of returns in the economy, a fraction of national income; income redistribution can pervade other returns in the flow of funds; hint two: the government is not the only force in the economy that can redistribute income; everyone else seizes the opportunity to redistribute income throughout the flow of funds). At the moment, the implications derive from the empirical evidence summarized in figures 3.3 to 3.7, Annex 3.2, and the above layouts. These implications may be contentious or unsettling but they rely on readily verifiable and falsifiable observations.

First, common property always creates common income but the opposite pair does not hold. Property rights (ownership) of any type, including private property, do not create private income. All types of property rights can coincide with any extent of income redistribution, from partial common income in the modern Welfare States, in historical and developing economies, and under slavery (including private property) to near-total common income under Communist central planning (state ownership and other property types), in Nazi Germany (private property), and under Enterprise Network Socialism in Russia (private property). Annex 3.2 displays the scatter of all property types, including all types of ownership, throughout the common income area.

Whence follows the first implication: Property rights of one or another type are necessary but not sufficient for the existence of private income (the market economy).
Second, all types of property rights can combine with private income and underlie it. Examples include private property in all Western market economies, episodes of cooperative property on their margins, local government property of Township and Village Enterprises (TVEs) in post-central plan China, and substantial state ownership in Singapore, Taiwan, and, to a lesser extent, Japan. What is necessary, but may not be sufficient for the existence of private income, is that national state ownership is limited so that it does not monopolize sectors and specific industries. Private property and/or local government ownership in a critical mass, that is, a multiple ownership structure in the presence of state-owned firms, are necessary for the existence of competitive markets with private income. State-owned firms can have private income only if their flow of funds is separate from the government and no explicit or implicit subsidies ensue.\(^{45}\) Private property is not unique in relation to private income. Like any other type of property rights, private property can combine with private income and can also undermine private income and underlie common income.

**Whence follows the second implication: Private property is neither sufficient nor necessary as the dominant property type for the existence of private income.**

From the two of the above, it follows that property rights of any type are ambiguous. They can equally undergird private income and common income, the market economy and socialism. As no exception, private property is ambiguous. It can promote socialism (e.g., Nazi Germany, private slavery, guilds and other mercantilism, Enterprise Network Socialism in post-Communist countries, and other historical and world-wide examples in table 3.1, in figures 3.3 through 3.5 and the blue bubbles in Annex 3.2). Alternatively, property rights and private property in particular can support competition, investment, technological innovation, and private income in the market economy.\(^{46}\)

\(^{45}\)England established (but not followed) the tradition of private income for nationalized firms. Herbert Morrison (ironically, a Socialist Cabinet member), who presided over nationalization of the London Underground in 1931, formulated the best case against state subsidies and guarantees to all actors throughout the flow of funds, including the firm, labor, and consumers: Subsidies and guarantees “might well have encouraged a spirit of slackness, or even recklessness, on the part of the board in matters of management, on the part of the traveling public in demanding lower fares and uneconomic facilities and on the part of the work people in asking for big concessions as to conditions of labour.” (Cit. in Tony Jackson, “It’s a Monopoly, Stupid,” *Financial Times*, July 10, 2001). The principle of separate flows of funds became known in England and its colonies as “cash limits”. See David Begg and Richard Portes, “Enterprise Debt and Economic Transformation: Financial Restructuring of the State Sector in Central and Eastern Europe,” in Colin Mayer and Xavier Vives, eds., *Capital Market and Financial Intermediation* (Cambridge: Cambridge University Press, 1993), pp. 230-261. Singapore adopted this system for its state-owned enterprises and it informed other Asian Tigers.

Third, absent or near-absent government and near-total government restriction always create common income but the opposite pair does not hold. Limited and restrictive government in-between (restriction more than zero and less than near-total) do not always create private income. Any extent of government restriction, from zero to total, and any limited and restrictive government in between, can coincide with one or another extent of income redistribution. The entire government dimension in figures 3.3 to 3.5 and in Annex 3.2 is lined up or rather scattered with dozens of cases of common income, from primordial common output and Enterprise Network Socialism to Communist central planning. Annex 3.3 shows that every decile of the government dimension in the common income area is filled up, often with more than one economic species.

**Whence follows the third implication:** The government being more than near-absent and less than near-total is necessary but not sufficient for the existence of private income (the market economy).

Fourth, any extent of government restriction in the range of more than near-absent and less than near-total can combine with private income. This can be observed from limited government in Western market economies to restrictive government in post-central plan China and throughout the Tropic of Free Market and the Tropic of Restricted Market in Annex 3.3. One can surmise that, eventually, all market economies converge to the south-west corner of free market economies. But this historical or rather teleological supposition is immaterial for the observable cross-sectional, multi-dimensional heterogeneity. Limited government, just like restrictive government, can support private income and can equally undermine private income and promote income redistribution, even near-total common income in the case of Enterprise Network Socialism. Free socialism with private property in post-central plan Russia is not a paradox or an anomaly but only one of species in these multi-dimensional ranges, along with private slavery and lesser lights.

**Whence follows the fourth implication:** Limited government is neither sufficient nor necessary for the existence of private income (the market economy).

From the two preceding implications, it follows that the government is non-linear and ambivalent with respect to the market economy and socialism. It is non-linear because zero or near-zero government enables income redistribution everywhere, limited and restrictive government may restrain income redistribution in many cases, and near-total government raises income redistribution to the near-total extent.\(^{47}\) It is ambivalent because both limited and restrictive government (more than near-absent, less than

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near-total) can enable, impose, or promote both private income and common income, the market economy and socialism. Both limited and restrictive government can enable and conduct income redistribution or they can curtail and eradicate it, break up common income and phase-in private income.

It further follows for policy that no extent of liberalization and property privatization can by themselves lead to the market economy and prosperity without the breakup of common income and phase-in of private income.

The most unsettling finding is the omnipresence of common income. It follows from all the above implications and from empirical evidence submitted in this chapter at various levels of aggregation and disaggregation. Socialism has occupied the bulk of human existence across historical and contemporary economies with both restrictive and limited government and with all property types. It is universal. Private income has phased in gradually and intermittently. Only in the last three centuries has it started to dominate a bloc of economies, first England and its outstretches, then Western market economies at large, including more recently the Asian Tigers and a few others, and, lately, post-central plan China. But most of the map of the world apart from the Tropic of Free Market and the Tropic of Restricted Market is the universe of socialism.

The omnipresence of common income has the underlying accounting reasons whereupon we now turn the page.