

THE COMMONS ECONOMY: A PROPERTY RIGHTS INTERPRETATION OF FINANCIAL CRISIS¹

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Abstract

This paper develops a general theory of the commons, which is used here to explain the institutional origins of financial crisis. The process of development or transition typically involves a sequence in which property rights are clarified first for individuals, later for firms, and still later for higher-level economic institutions, including the fiscal and financial systems. The commons economy, a hierarchy of weakly-monitored economic institutions, invites rent seeking behavior from below that cascades up the ladder, creating vulnerability to financial crisis. Even where monitoring at higher levels is not weak, banks and foreign exchange managers may, in the absence of well-developed institutions, such as bankruptcy procedures, be held up by rent-seeking behavior within lower-level economic institutions.

This property rights approach to explaining financial crisis provides an integrated structure for models of incomplete property rights, agency costs, moral hazard, asymmetric information, and adverse selection, all of which motivate the functioning of the commons economy. The model has other interesting implications. It (i) demonstrates linkages among seemingly unrelated phenomena, such as weak corporate governance, inflation, financial repression, and exchange rate crises, (ii) provides an institutional context for the soft budget constraint, (iii) underscores the problem of property rights asymmetries and the role of size as sources of commons behavior, and (iv) emphasizes the role of the IMF as regulator of last resort rather than lender of last resort. Finally, the paper expands the scope and application of the Coase Theorem.

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1. Introduction

The global financial crisis that afflicted numerous developing and transition economies during the latter half of the 1990s inspired an extensive literature on the sources and transmission of financial crisis. Broadly viewed, this literature is of two kinds: the first stresses the domestic sources of crisis while the second emphasizes the role of international conditions. This paper spans both interpretations.

More generally, this paper argues that economic theory creates an unnecessary division between natural resource economics, particularly the concept of the commons, and institutional economics, notably economic institutions in developing and transition economies. By focusing on the institutions that govern the use of economic resources, rather than the nature of the resource itself, this analysis extends the conventional concept of a commons to span all forms of resource, including fixed business capital and financial assets.

This expanded concept of the commons turns out to be a useful device for understanding a condition that is intrinsic to many developing and transition economies. That condition is the tendency for the assignment of property rights to be asymmetric. While sets of rights granted to individuals, and sometimes to firms, may be relatively complete, the assignment of rights to higher, more complex institutions, including fiscal and financial systems, may be incomplete and fragmented. These asymmetries render the economic system vulnerable to rent-seeking behavior that can hollow out successive tiers of economic institutions for which property rights are weakly defined. This phenomenon, which erodes the balance sheets of a nation's key economic

institutions, creates externalities that spill over into the macro economy, or international economy. These externalities of the common property resource cause national economies to be vulnerable to financial crisis.

In the same way that the Coase theorem provides us with a powerful perspective on remedies for the natural resource commons, the focus on property rights and transaction costs is also relevant to reducing externalities that arise from the commons economy. The commons economy invites the application of Coase's analysis to a far wider set of economic problems than those addressed in his classic essay (1960).

2. A General Theory of the Commons

Garrett Hardin (1968), who is generally credited with the phrase "tragedy of the commons," describes a pasture that is "open to all" and subject to overgrazing. According to Hardin, within the commons "each man is locked into a system that compels him to herd without limit..." In his *New Palgrave* entry for "common property," Gary Libecap (1987) characterizes the problem of the commons as "...the failure of individuals to consider the full social costs of their actions. In equating private benefits with private costs in their resource-use decisions, individuals choose to have too many children, to graze too many animals, to catch too many fish." (p. 317). Libecap (1987) discusses the concept of the commons only in reference to natural resources. We will see, however, that what is important about a commons is not the nature of the asset (e.g. fish, forests, or the atmosphere), rather the institution that governs its use.

In their analysis of managerial behavior and ownership structure, Jensen and Meckling (1976) provide a framework for analyzing the various agency costs facing the outside owner of a firm. Because the inside manager's ownership share, α , is less than unity and monitoring is incomplete, the agent is motivated to extract resources from the firm. This is because, for every dollar of resource that the agent successfully extracts, his profit is reduced by only α , which is less than a dollar. Agency therefore reduces the market value of the firm. Jensen and Meckling demonstrate how by ceding a larger share of ownership, α , to the insider-manager and incurring monitoring costs, the outside owner can increase the firm's value. Market value is maximized when rent seeking and monitoring costs are minimized, i.e. when the firm is fully owned by the inside manager.

This classic article is intended to describe the agency problems that arise from the transformation of the 19th century firm into a modern corporation. As ownership shares are dispersed, the incentive to monitor is weakened and asset stripping becomes more problematic. In reality, Jensen and Meckling describe the characteristics of a much larger family of ownership forms, which extends all the way to the conventional commons. Along a continuum, as α , the ownership share of individuals with access to an asset, becomes small and the ability to monitor becomes weak, the asset – whether it be pasture or a firm – increasingly assumes the attributes of a common property resource.

According to Anthony de Jasay's characterization (1987) of the distinction between private and public goods, "Public goods are the special case of private goods where exclusion cost is not being incurred" (p. 100). The exclusion cost consists of some combination of

surrendering outside ownership to the insiders and incurring monitoring costs to limit the unauthorized consumption of the good. We might also turn de Jasay's distinction on its head: private goods are the special case of public goods where exclusion costs *are* being incurred.

In advanced capitalist economies, the egregious case of the firm cum commons is seldom observed, since competition and the legal and regulatory environment are generally hostile to the survival of commercial organizations that are unable to monitor their assets. This is less true in developing and transition economies.

To summarize, as theoretical background to the model of the commons economy, this analysis emphasizes two conditions:

- The nature of the resource, whether natural, physical, or financial, is not the essential feature of the commons; rather, it is the structure of property rights that governs its use and determines its vulnerability to overconsumption, and
- The commons is not a categorical concept; rather the nature of the assignment of property rights that determines access to the resource lies along a continuum.

This is the conceptual starting point for this paper. Where the authority and incentive to monitor a resource are weak, the resource will be subject to overconsumption and will, in consequence, exhibit the essential properties of the classic common property resource.

3. Basic Structure of the Model

Figure 1 illustrates one type of a commons economy – the socialist economy in transition – in which lower-level economic institutions extract and overconsume resources from upper-level institutions. This tendency to hollow out successive levels of economic institutions continues until the overconsumption is either disciplined by the domestic political system or, in the case of the open economy commons, it spills over into the international system.

We define the commons economy as follows: *A commons economy is a hierarchy of economic institutions in which weakly-monitored organizations invite rent seeking behavior that weakens institutions up the ladder, causing the economy to be more vulnerable to financial crisis.* It is important to be clear about the notion of causality in this and other analyses concerning sources of financial crisis. Furman and Stiglitz (1999) specify a kind of weak causality in which they suggest that “...the terms ‘causes’ and ‘vulnerability’ are often used synonymously.” According to Furman and Stiglitz:

The economy can be viewed as constantly bombarded by shocks. An increase in vulnerability means an increase in the probability that these shocks, rather than being absorbed by the economy, will be translated into a systematic downturn (p. 6).

Rather than asserting causality between weak domestic institutions and economic crisis, which implies a sense of inevitability, this analysis views the relationship as one in which weak institutions increase the probability of economic crisis.

There are several variations on the model of the commons economy. Differences among the models may be characterized by the nature of the agent whose rent-seeking behavior transforms the relevant economic organizations into commons. There are four general models, each of which is driven by a different type of agent:

- *Socialist transition economy.* The players include a wide range of workers, managers, and officials who rent seek.
- *The crony capitalist economy.* The owner-manager uses the firm as an instrument of rent-seeking behavior.
- *The corporatist economy.* Facing a more evolved set of property rights and rules than either the socialist transition or crony capitalist economies, owner-managers of conglomerates (or chaebols) in the corporate economy nonetheless employ the high-powered rights of these firms to hollow out upper-level economic institutions.
- *Top down predation.* The political leadership and/or bureaucratic class exploit the commons economy as an instrument of political control and/or self-enrichment.

The essential difference between the socialist-transition economy and the crony capitalist and corporatist economies is the allocation of property rights. In the case of a socialist economy in transition, we assume that the full complement of property rights that exists in a capitalist regime has been secured by individuals, but not by the enterprise system, which constitutes the second tier of the economic hierarchy. In the cases of crony capitalism and corporatism, the

usual set of property rights that are enjoyed by firms in capitalist economies has been fully assigned to the enterprise system. Under this regime of asymmetric rights, rent-seeking owner-managers are therefore able to use the firm as an instrument of utility maximization.

Top-down predation distinguishes itself from the other forms in that rather than hollowing proceeding from the bottom up as in the case of the socialist transition, crony capitalist, and corporatist economies, the agents that hollow out the economic system are principally political figures and bureaucrats. For the purpose of maintaining political control and/or self-enrichment, the leadership sanctions or itself extracts resources from the commons economy.

While each of these forms of commons economy is conceptually distinct from the others, two or more forms may coexist simultaneously within a single economy. Initially, we describe the case of the socialist transition economy, since it incorporates essential features of all four forms of commons economy.

4. The Second Tier: the Enterprise Sector as Commons

In the canonical centrally planned socialist system, control rights reside with the state. In our model of the transition economy, the full complement of property rights has been assigned to individuals; they have not yet been assigned to the managers who monitor the economic institutions that lie above the individual. Unlike the classic socialist economy, individuals enjoy the full range of ownership rights – the rights of use, return, and sale.

In the socialist transition economy, the state selectively assigns rights to individual managers within the enterprise system. While some rights are assigned to managers of state-owned enterprise (SOE), the bundle of rights is generally neither complete nor coherent. The lack of coherence can be characterized along one or a combination of two dimensions.

First, the assignment of rights may lack vertical coherence in the sense that some rights are devolved from the supervisory body to the enterprise; others are not. Alternatively, or in addition, the assignment of rights may lack horizontal coherence. Within the enterprise, rights are dispersed among managers, workers' councils, and party secretaries (see Jefferson, Lu, and Zhao, 1999).

The absence of vertical and horizontal coherence fragments ownership and erodes the functioning of a "central contracting agent" as defined by Alchian and Demsetz (1972). Incoherent and fragmented ownership rights that limit both the authority and incentive for managers to monitor inputs transform the state-owned enterprise into a commons.

With weak monitoring, stakeholders extract more than they contribute to the resource. Overconsumption of the resources of the state-owned enterprise arises from chronic shirking by workers, the extraction of pecuniary and non-pecuniary benefits by managers, government officials overtaxing and extracting favors, and contributions by the state of SOE assets to non-state firms, including equipment, engineering services, and technology. The result of weak monitoring is *non-excludability*, which creates a tendency for the assets of the state enterprise to be depleted.

Non-excludability and resource depletion need not be an inevitable consequence of state

ownership. North (1994) emphasizes the importance of the congruence of formal rules and informal norms. Arguably, in socialist transition the SOE commons problem arises from the lack of consistency between the formal rules that govern state property and the liberalized rules and norms in the transition that empower individuals to seek rents and accumulate wealth.

That over-exploitation of the SOE commons is not inevitable is shown in dramatic form in *Wild Swans*, an autobiography of a woman, who as a girl growing up in China during the early Fifties experienced the “Three Antis Campaign.” According to the author, Jung Chang (1992), whose father was in charge of the campaign in a region of Sichuan Province:

Every official had to make a self-criticism about any infraction, however minor: for example, if they had used an office telephone to make a personal call, or a piece of official notepaper to write a private letter. Officials became so scrupulous about using state property that most of them would not even use the ink in their office to write anything except official communications. When they switched from something personal they changed pens.... There was a puritanical zeal about sticking to these prescriptions. My father felt that through these minutiae they were creating a new attitude among the Chinese: public property would, for the first time, be strictly separate from private (p. 182).

By the 1980s, if not before, this puritanical attitude had been supplanted by an emphasis on the right of personal material gain. Individuals were empowered to accumulate financial and physical wealth, often at the expense of state property.

5. An Extension

Analyses that appeal to moral hazard, asymmetric information, and adverse selection are

generally, in their most basic form, analyses of the commons problem. In his paper “Transition and Financial Collapse,” Harald Uhlig (1995) describes the problem in which information asymmetries create financial vulnerability. The inability of financial intermediaries to monitor entrepreneurial talent during the early stages of transition leads to the accumulation of non-performing debt, rising borrowing costs, which crowd out good entrepreneurs, and finally to the collapse of the financial system. Jefferson (1998) illustrates how the commons operates through adverse selection in the labor market.

Until the late 1980s, China’s labor allocation system circumscribed the rights of students and workers to accumulate and trade on human capital. Within the enterprise system, the authority and incentive of state enterprise managers to monitor and duly compensate labor has remained limited. The consequence of this circumscribed set of managerial control rights is that labor has been monitored along the dimension of quantity, with limited differentiation by *quality*. Education, skill, and motivation have played limited roles in shaping job assignments and compensation. The result has been a relatively compressed reward structure. With restrictions on both the supply and demand sides of the labor market limiting workers and managers to contracting on quantity, the state-enterprise “labor market” has functioned in a kind of low-quality equilibrium.

Transition economies, such as China’s during the 1980s, initiated various reassignments of property rights. These included the elimination of two kinds of restrictions. Elimination of the labor allocation system enabled workers to trade on quality – on their human capital and effort. On the labor demand side, relaxation of restrictions on the entry of firms outside the state system

allowed for the creation of private and mixed-ownership firms in which managers enjoyed the rights to monitor and reward these quality differences. Together, these reforms created the foundation for an emerging market in labor quality. By continuing limited managerial control rights in the state sector, so as to maintain a relatively uniform wage, these reassignments have created a destabilizing cycle of *relative* SOE decline. With the emergence of markets in labor quality outside the state sector, the most skilled and motivated workers have exited from SOEs. Their exit has caused a *relative* decline in SOE productivity and lag in revenue growth. Slower revenue growth has reduced wage growth relative to many non-state enterprises. As wage differentials have grown, successive tiers of able SOE workers have exited, requiring state enterprises to reduce relative wage growth still further, and so on.

Because in the SOE or commons enterprise, worker compensation is relatively undifferentiated, the less productive workers become free riders, while the undercompensated productive workers exit. The continuing problem of adverse selection results in the hemorrhaging of human capital and incentive from the weakly monitored SOE. This condition is, at its root, a commons problem. The problem arises from management's weak authority and incentive to monitor. Even when just a fraction of the stakeholders overconsume, quality exits from the enterprise, which eventually becomes hollowed out. This analysis suggests that the problem of the commons should not be seen solely as a problem of diminishing quantities, but also as a problem of diminishing quality.

6. The Third Tier: the Banking System

According to Jensen and Meckling (1976), in firms where it is “relatively easy for managers to lower the mean value of the outcomes of the enterprise” through theft, leisure on the job, or other means, their ownership structures should be characterized by comparatively little outside equity. To maximize his control rights and avoid being fired, the indulgent manager will seek to secure most outside capital in the form of debt (p. 355). Even where sources of equity exist, whether public or private, weakly monitored firms can be expected to exhibit high debt-to-equity ratios.

If weak monitoring results in state-owned enterprises functioning as debt-ridden commons, why do they not shrivel up and disappear? They do not disappear, because they are

systematically replenished by the economic institutions that lie directly above them – the fiscal and banking systems. In China, for example, during the 1980s, the central government restocked loss-making SOEs with subsidies from the fiscal system; while in the 1990s, replenishment occurred principally through the banking system.

In the commons economy, both government officials and bank officials lack the authority and or the incentive to monitor effectively the resources of the treasury or the banking system. Numerous channels exist through which enterprises and their stakeholders capture resources from these higher-level institutions. For example, local officials in search of funds to replenish locally owned enterprises may exercise control over the housing and social service options upon which local bank managers depend. Alternatively, as described in the extensive-form representation shown in Annex A, bank officials may face a hold-up situation in which they rollover delinquent loans to avoid the accumulation of non-performing debt, which they anticipate will not be recovered through bankruptcy proceedings. In this illustration, the bank manager is more likely to rollover a delinquent loan to a state-owned enterprise under two conditions. First, the expectation of low net returns to lending outside the state sector increases the attractiveness of the rollover option. Returns to lending to non-state enterprises are low when $\gamma + \rho$, the combined probability of loan repayment by firms in the non-state sector and the recovery of such loans, should they become non-performing, is low. Second, the rollover option becomes more attractive when $\alpha > \theta$, that is when the rollover of the delinquent SOE loan serves to improve the prospect of repayment by the enterprise, or capital replenishment by the government, relative to the case in which the bank refuses the rollover. Where the inequality

shown in equation A.1 holds, i.e. the expected total returns to rolling over a delinquent loan exceed the returns from lending elsewhere, banks will continue to loan to the state sector and the banking system will itself function as a commons.

Replenishment from the next level up the institutional hierarchy enables the resources of SOEs to be both *non-excludable* and also *non-diminishable* or *non-rivalous*. Since its resources are now, at least partially, replenished, the enterprise is more than a commons; it is a kind of impure public good.

Kornai's "soft budget constraint" (1980) characterizes the ability of the state-owned enterprise to use resources inefficiently under a regime of bank and government bailouts. The multi-layered commons model, developed above, makes the institutional and behavioral foundation of Kornai's idea more rich and transparent. *Soft budget constraints exist at the interface of two economic commons; they ease rivalry within lower-level commons and thereby enable overconsumption to persist while creating economy-wide externalities.* The economy-wide externalities are made clear in the following section.

7. The Fourth Tier: the Central Bank

Like the enterprise system, the banking system needs to be replenished to avoid financial collapse. How is the banking system recapitalized in the face of the accumulation of bad debt? The principal avenues to recapitalizing the banking system are:

- *financial repression*. By depriving individual savers of high returns through alternative avenues of savings, financial repression sustains the flow of needed deposits to the banking system. Controls on capital account convertibility also constitute a form of financial repression that serves to channel domestic savings to local banks.
- *crowding out private sector activity*. Government raises taxes and/or issues debt to recapitalize the banking system. These measures require some combination of increased taxation, higher interest rates, or expanded credit rationing; each of these displaces resources from the private sector.
- *inflation*. The central bank prints money to recapitalize the banking system (either directly or by buying the public debt); the result is inflation. Inflation may accelerate or yield to price controls, which, in turn, causes widespread resource misallocation.

These measures – financial repression, crowding out, and inflation – each represents a form of externality that arises from the commons economy and impairs overall economic efficiency (Jefferson, 1998). When these externalities become unsustainable, the result is financial crisis.

Financial crisis may materialize through one or combination of channels. The unwillingness of individuals to sustain the flow of deposits may lead to financial crisis. As the banks become weaker, financial crisis may also spread through more indirect channels. Huang and Xu (1998), for example, show how soft-budget constraints generate information asymmetries regarding relative levels of bank solvency. The result is a “lemon” problem in the inter-bank

lending market, which impedes strong banks from securing loans to solve liquidity shortage problems in the face of liquidity shocks. Thus bank runs may break out, which further worsen the lemon problem and can lead to a collapse of the entire banking system.

8. The Fifth Tier: the Role of the Political System

The entire population pays the price of the commons economy, although the portion of the population that successfully rent seeks may enjoy net gains – at least for a period. One means of disciplining the economy is the political system. North (1994) underscores the importance of politics; they “significantly shape economic performance because they define and enforce the economic rules....they create and enforce efficient property rights” (p. 366).

Political systems that enfranchise the population by assigning the right of universal suffrage establish a popular claim on the performance of the economic system. The public exercises their claim through institutions that create transparency and accountability. These include a multi-party system, a free press, independent research establishments, and an independent judiciary. The absence of these institutions impairs the ability of the public to develop, monitor, and enforce the set of rules that are required to govern a nation’s economic institutions.²

In his review of “lessons from the Asian economic crisis,” Haggard (1999) concludes

² In the wake of the Asian financial crisis, the World Bank became an active advocate of more open political systems. According to World Bank president James D. Wolfensohn, “...the free flow of information (is one of) the essentials of good governance.” The *New York Times* further reported: “World Bank officials concluded that a freer, more aggressive news media in the Asian regions would have put a brake on corruption and the crony capitalism that is widely seen at the heart of the mess” (October 11, 1998, p. 21).

“there is ample evidence that weak financial regulation and poor systems of corporate governance were important precursors to the crisis.... (We see) a pattern of business-government relations in which specific firms were able...to secure special treatment” (p. 37). Haggard distinguishes among the political regimes shaping the behavior of the Asian countries. While, in differing degrees, the Asian economies in crisis all suffered from the dominance of industrial policy over financial discipline, crony capitalism, corruption, and nepotism, South Korea and Thailand at least “had self-correcting mechanisms in the form of elections that authoritarian governments such as Indonesia lacked” (p. 34).

9. The Open Economy: Role of the International System

The analysis thus far assumes a closed economy. Opening the economy to financial flows creates an additional source of capital. For the commons economy that has overconsumed the resources of its domestic institutions, foreign borrowing and foreign exchange reserves each represents yet another avenue of replenishment. But, why do international banks overlend and why do nations subsidize foreign borrowing through exchange rate overvaluation?

The international banking system and International Monetary Fund, serving as lender of last resort, soften the budget constraint of the entire national system. The implicit insurance scheme that IMF bailouts create for international banks and investors invites moral hazard by “...promising creditors that they will not lose in the current crisis (and) encouraging those lenders and others to take excessive future risks” (Feldstein, 1998, p. 30). With international

banks relaxing lending standards, the presence of the IMF signals domestic economic and political actors that the system can continue to monitor its economic institutions weakly with rent-seeking benefits; any ensuing financial crisis can be managed with IMF resources. For the commons economy, international borrowing will eventually result in currency weakness. But a devaluation of the exchange rate will increase the home-currency cost of servicing the existing stock of foreign-currency denominated debt. To avoid raising the cost of servicing their foreign debt, domestic agents that are heavily indebted will wish to maintain an overvalued exchange rate, possibly even after it has become widely viewed as overvalued.

For national governments and their domestic debtors that have overborrowed on international financial markets, the promise of IMF bailouts may encourage foreign exchange managers to postpone devaluation. Annex B illustrates the choice of the foreign exchange manager wishing to maximize social utility. According to the extensive-form representation shown in Figure B.1, the manager can postpone the devaluation, hoping for recovery while incurring a risk, δ , that the nation will need to accept the cost of an IMF-led restructuring that bears a social cost, θ . Alternatively, the manager may devalue, which will require an autonomous, domestic workout of the unsustainable foreign debt with cost σ . With probability α , failure of the domestic workout will require an IMF program, also with cost θ . Whether the manager chooses to devalue or not depends on the relative magnitude of these parameters. *Ceteris paribus*, the greater the probability of a devaluation with successful autonomous restructuring, the more attractive the devaluation option. Also, the lower the cost of a domestic workout relative to an IMF-led restructuring (i.e. the smaller σ relative to θ), the more attractive

the devaluation. Both the probability of a successful autonomous workout and its social cost depend on the effectiveness of the nation's bankruptcy procedures and the political system required to enforce them. Conversely, the more generous the terms of an IMF-led restructuring, the more attractive the option of postponing a devaluation. Countries with weak bankruptcy systems and low prospects of a successful autonomous workout following a devaluation are more likely to delay devaluation; they recognize the critical need for IMF resources and sanctions to make a workout succeed.

When the incentive exists to postpone devaluation, the overvalued exchange rate leads to persistent payments deficits and to depletion of the country's foreign exchange reserves. In effect, the foreign exchange reserves are used to pay the premium on the overvalued exchange rate. Society is using its foreign exchange reserves to finance the additional cost of servicing the foreign exchange that borrowers would themselves incur were the exchange rate to move towards its equilibrium. Alternatively, the benefits of fixing the exchange rate for domestic borrowers can be viewed from the perspective of the outside investor/lender. Radelet and Sachs (1998) explain "...the central banks absorbed the risk of exchange rate movements on behalf of investors, which helped to encourage capital inflows, especially with short maturity structures" (p. 24). Because they are held up by weakly monitored enterprises and banks and by the inability of the bankruptcy system to restructure these commons, the nation's financial managers resist devaluation. Delay transforms the nation's foreign exchange reserves into a commons, leading to their subsequent depletion.

The decision of the bank manager to rollover a non-performing loan to a state-owned

enterprise and the decision of the foreign-exchange manager to postpone devaluation share a common feature. In both cases, the underlying problem is a flawed bankruptcy system, which undermines the efficiency of bankruptcy proceedings, increases the cost of financial restructuring, and impedes financial discipline.

A major implication of this analysis is that conventional wisdom misinterprets the essential role of the IMF. According to conventional wisdom, within the international system, the IMF plays the role of “lender of last resort.” But this status carries with it two deeper functions. First, by creating a kind of insurance for both international lenders and domestic borrowers of foreign capital, the Fund encourages overlending. The Fund’s lender of last resort function weakens national economic discipline, thereby sustaining the commons economy and encouraging these economies to become more vulnerable to financial crisis. The second function of the Fund follows from the first. Where overborrowing and financial crisis does occur, the Fund serves to discipline the commons economy. While the immediate problem of the IMF is to serve as lender of last resort, as the backstop to the commons economy, its more fundamental task is to serve as the *regulator of last resort*.

In their paper on recidivism and the IMF, Bird, Hussain, and Joyce (2000), during the period 1980-96, count 38 countries that qualify as “frequent users,” having signed commitments for five or more IMF programs. Among the statistically significant variables that explain the number of years countries spend in IMF programs was an annual corruption index. While corruption is but an indirect measure of the commons phenomenon, as a form of rent-seeking behavior, corruption is likely to be pervasive among weakly monitored economic institutions.

The establishment of flexible exchange rates creates new avenues for externalities arising from overconsumption within the commons economy. These include the inflationary effects of currency depreciation. Depreciation raises the cost of imported goods as well as the cost of foreign capital. While these relative price changes may curtail imports and foreign debt, they do not require more careful monitoring of the nation's economic institutions. In the absence of the requisite political discipline, only dollarization can create a hard standard that can serve to discipline the commons economy.

10. Other Types of Commons Economies

Earlier, this paper identified four general forms of commons economy. Figure 1 and its elaboration in the account above model the socialist economy in transition. The discussion below extends the model to three other forms of commons economy.

Crony capitalist economies and corporatist economies share a common feature. That is, the second tier, i.e. the enterprise system, has acquired well-specified property rights. With well-specified property rights, the owner-manager of the firm becomes an agent for rent-seeking behavior. The owner-manager employs the firm to extract resources from upper-level tiers, including the fiscal and financial systems.

The crony capitalist economy. While the prototype of the crony capitalist economy is Indonesia, numerous transition and developing economies suffer from the interlocking financial interests and weak regulatory oversight that characterized Indonesia's pre-crisis economy. In the

crony capitalist economy, weak monitoring of the exercise of government powers, the collection and distribution of public revenues, and the supervision of bank deposits leave these resources prey to monopoly power, fiscal subsidies, and insider borrowing.

Often two or more of these insider advantages interact. For example, monopolies that are established through government licensing and regulation obtain insider loans; also, tax advantages facilitate borrowing and lending to favored insiders. Viewed from the model shown in Annex A, while the prospect of repayment by favored firms may not be as promising as that of loans to independent firms (i.e. $\beta < \gamma$), guarantees and bailouts for banks that lend to favored firms (i.e. $\alpha > \rho$) make such lending attractive. This syndrome is captured in the World Bank's characterization of certain pre-crisis East Asian banking systems:

Credit tended to flow to borrowers with relationships to government or private bank owners and to favored sectors, rather than on the basis of projected cash flows, realistic sensitivity analysis, and recoverable collateral values (1998, p. 35).

The concentration and scale of such high-risk, weakly supervised lending rendered insider borrowers, banks, and their political patrons vulnerable to financial shock and crisis.

The corporatist economy. The prototype of the corporatist economy is South Korea. In the corporatist economy, owner-managers may operate in an economic system in which property rights and rules are more evolved; political leaders may ostensibly place more emphasis on social welfare objectives. As a result, the means for extracting resources from the system are more subtle.

In South Korea, the mutually reinforcing nature of industrial policy and large chaebols

has afforded the latter an asymmetric size advantage relative to the nation's financial and fiscal institutions. Their sheer scale, social and economic importance, and political clout confer on chaebols the high-powered rights that enable them to overconsume resources of the fiscal and financial systems. Bai and Wang (1998) present a model, intended to summarize the fiscal behavior of South Korea, Indonesia, and Japan, in which governments guarantee or subsidize investments in large, high-risk and high-return projects. The authors show that this policy orientation results in high savings in risky assets, above average growth, and financial crisis.³

Overborrowing by the chaebols causes them, and the banks to which they are heavily indebted, to be overexposed to domestic and foreign debt, resist devaluation, and be vulnerable to financial crisis. Radelet and Sachs (1999) calculate the short-term debt-to-reserve ratios in June 1997 to have been in the range of 2.1, 1.7, and 1.5 respectively for South Korea, Indonesia, and Thailand, well above the average 0.7 level for their seven major Latin American counterparts (p. 15).

The top-down predation economy exhibits patterns of incomplete assignments of property rights that are similar to the case of the socialist transition economy described above. The principal difference is that in lieu of – or in addition to – a large pool of rent-seeking individuals, who exercise no particular political authority, the political leadership and their bureaucratic agents secure personal gain from the commons economy. Among the four categories of commons economy, the literature on the political commons economy is well established. North's (1990) discussion of the "state predation" problem, Overland and Spagat's (1998) examination of

³ Edmund Phelps mirrors this theme: "corporatist economies are 'disequilibrium prone.' They steer capital out of the financial system to industries and firms that are viewed with political favor or as prospective winners. Within corporatist economies, implicit guarantees on corporate and financial investment cause the expected return to be

the “proprietary economy”, and Basu and Li’s (1998) analysis of the role of “corruption in transition” each fits within the framework of a commons economy. In each case, politicians and bureaucrats systematically extract resources from key economic institutions – businesses, banks, and treasuries – that are weakly governed by their nominal managers.

In their empirical analysis of the transition economies of Eastern Europe and the former Soviet Union, Broadman and Recanatini (2000) identify as the roots of corruption, poorly functioning systems, measured by soft budget constraints, weak corporate governance and firms in arrears, legal ineffectiveness, including undeveloped bankruptcy law, and monopoly. Their findings lend support to the proposition that weakly monitored economic and political institutions lie at the center of each of the four forms of commons economy set out in the above typography.

11. The Transition

The model of the commons economy sketched above implies a sequence for the establishment of markets and institutional governance. In general the sequence evolves from smaller, less complicated institutions – individuals and firms – to more complicated systems, notably the fiscal, commercial banking, central banking, and foreign exchange systems.

insured against adverse circumstances” (*Wall Street Journal*, March 25, 1999, p. 20).

Financial system reform may lag not only due to its complexity. As suggested by the illustrations in Annexes A and B, the sequence of reform from lower to higher levels of economic institutions may result from the ability of lower-level institutions that function as commons to hold up both the resources and reform of higher-level institutions. In Annex A and B, the absence of established bankruptcy law and procedures impairs the effective functioning of the banking and foreign exchange reserve systems. These examples illustrate the difficulty, in practice, of distinguishing between the pure case of the commons economy in which all levels of economic institutions are weakly monitored and the hybrid case in which, at upper levels, managerial authority is “held up” by the rent-seeking behavior of lower-level institutions. While personal payments to bank officials, such as cash bribes in Indonesia and the provision of housing and educational services by local officials in China, may be analytically less interesting than the incentive schemes characterized in Annexes A and B, they can serve to sustain the model of the pure commons economy in which resource mismanagement and overconsumption ensue from poorly-assigned managerial incentives.

The dysfunctional quality of transition, i.e. an asymmetry of property rights that enables individuals to rent-seek, may also arise in the modern post-industrial state. Recently, for example, the U.S. experienced a kind of asymmetry in property rights that resulted from a technological shock. The introduction of the internet technology paved the way for Napster, which dramatically altered the technological and institutional landscape for the management of recording rights. Under the institutional regime into which Napster technology was introduced, individuals were able to transform the resource of copyright recordings into a commons, which

raised the threat of diminishing the pool of new high-quality recordings. The process of remedying weaknesses in the inherited institution of copyright law, itself a transition, is requiring a protracted sequence of research, public debate, legal initiatives, and court proceedings to arrive at a new set of well-defined property rights, both formal and informal, in the recording industry.

12. Enter Coase

This paper argues that the essential problem of transition and development lies in the inability of economic organizations to monitor their resources efficiently, thus causing the commons problem to be ubiquitous. As in the case of the overconsumption of a natural resource, weakly monitored enterprises, banks, and foreign exchange reserves also result in overconsumption.

Since this paper draws a parallel between the problem of the natural resource commons and whole categories of economic institutions and their member organizations as commons, it should not be surprising that the paper also enlists a parallel remedy. Coase (1960) demonstrated how the destruction of natural resources could be curtailed by the clear assignment of property rights and, under a regime of zero transaction costs, these rights would be transferred to those parties, who could use them most efficiently. Likewise, the relevant solution for the commons economy is to establish a clear assignment of property rights for a nation's economic assets – those within its enterprise and banking systems. By creating economic laws and regulations, including contract law, commercial law, and bankruptcy law, governments reduce transaction

costs and thereby support the functioning of a property rights market. Owners of assets, whether enterprise assets or bank assets, will have the motivation to monitor their use. Where individuals or groups are unable to utilize their assets effectively, within the context of a well-functioning property rights market, they will be motivated to transfer their assets to others who can use the assets efficiently.⁴

But a well-functioning property rights markets and the economic rules that govern them do not operate in a vacuum. A central theme of constitutional economics is the requirement for a clear set of constitutional rules that govern the electoral, legislative, and judicial processes required to create, interpret, amend, and enforce the laws needed for an efficient property rights market (Elster, 1994). In effect, a well-functioning constitution creates the necessary conditions for an economy to move toward the successful implementation of the requirements of the Coase Theorem.

13. Implications and conclusions

Different lessons regarding the role of the IMF may be drawn from this paper. A tempting conclusion is that the IMF should be abolished or dramatically curtailed, thereby placing the task of disciplined resource management where it belongs – in the national system. Feldstein (1998) offers a more modest remedy: limit the functions of the Fund to those originally

⁴ See Jefferson and Rawski's (2000) characterization of China's emerging property rights market.

intended in its charter, i.e. to provide short-term balance of payments support. But, a central implication of this paper is that in the presence of a common economy, the Fund's functions as lender of last resort and regulator of last resort become inseparable.

For the international system as a whole the IMF serves a critical role. For developing and transition economies, the Fund facilitates the integration of immature economic systems into the international economy. By supporting the integration of national economies into the world's trading and financial systems, the Fund encourages competition, a key ingredient in the development process. Douglas North (1994) emphasizes the necessity of competition and the learning that results from it:

...the most fundamental long-run source of change is learning by individuals and entrepreneurs of organizations. While idle curiosity will result in learning, the rate of learning will reflect the intensity of competition among organizations. Competition... induces organizations to engage in learning to survive. The degree of competition can and does vary. The greater the degree of monopoly power, the lower is the incentive to learn (p. 362).

By reducing barriers, the integration of national economies into the international system reduces monopoly power and broadens competition, which, in turn, accelerates learning. However, the cost of subsidizing the entry into the international economy of economies with poorly-defined property rights is increased vulnerability to financial crisis. When integration does result in financial crisis, nations are challenged to understand its causes and to carry out the reforms that are needed to function effectively in the evolving global economy.

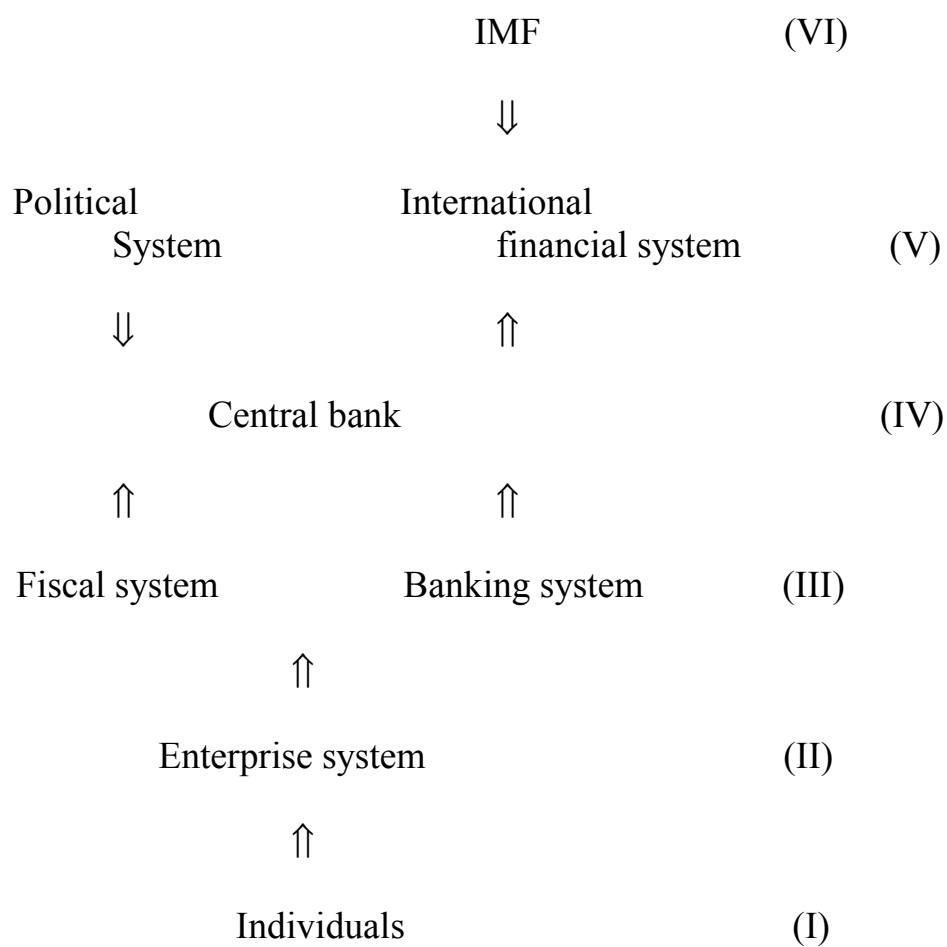
Conceivably, one of the greatest beneficiaries of the Asian financial crisis is China, which has been exposed to an invaluable lesson regarding the economic – and political – vulnerabilities

that arise from delaying the reform of its domestic financial and enterprise systems. More generally, having insisted on deep, intrusive institutional restructuring in the Asian economies, the Fund has, it seems, underscored the cost of relying on the Fund as a substitute for the domestic discipline required to monitor the nation's economic assets. By raising the expected cost of an IMF-sanctioned restructuring, the Fund may have already moved substantially toward the goal of preserving its role of lender of last resort while, at the same time, limiting the moral hazard that has thrust it uncomfortably into the role of regulator of last resort. An increase in θ , the social cost of an IMF program, can tip the expression in equation B.1 in favor of devaluation. Reversing the inequality in equation B.1 will prompt national initiatives both to improve the prospects for successful domestic restructuring (α) and to reduce the cost of implementing bankruptcy and liquidation proceedings (σ).

In conclusion, this paper demonstrates how an asymmetric assignment of property rights during in developing and transition economies can lead to deteriorating balance sheets in key economic institutions and to financial instability. The paper serves to link various seemingly unrelated economic phenomena by explaining how certain macroeconomic conditions, including inflation and shallow finance, may be viewed as externalities that arise from a system of weak corporate governance. The paper also establishes a broad institutional context for understanding the soft-budget constraint, which exists at the interface of two hierarchical organizations that function as commons. Finally, in drawing links between the commons economy and the IMF, we can see how the Fund has been drawn into serving the function of regulator of last resort, a role that extends well beyond its charter and partially explains the criticism, which has beset the

Fund.

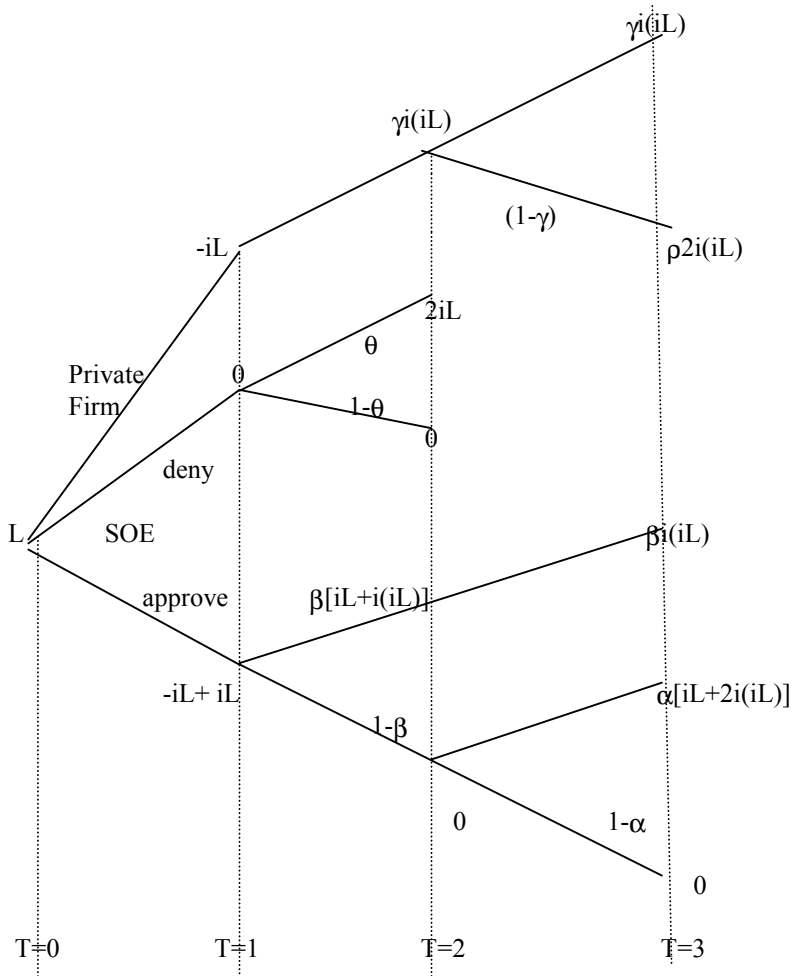
Figure 1
Structure of the Commons Economy:
The Institutional Hierarchy



Annex A
The Bank Manager's Hold-Up Problem

The bank manager receives a request for a loan from an enterprise (say an SOE) bearing the following characteristics: (i) it has an outstanding loan from the bank in the amount of L ; two identical payments equal to iL ($i \geq 0.5$) re needed to repay principal and interest; (ii) unable to make the first payment, the enterprise requests a new loan (or rollover) in the amount of iL ; (iii) if the enterprise receives this loan, it makes two repayments, that total $[iL + i(iL)]$ with probability β .

Figure A.1
Extensive-Form Representation
of the Bank Manager's Decision



The bank manager faces an alternative loan possibility (say a private firm) in which the loan amount, iL , will be repaid in two payments with probability γ , each in the amount of $i(iL)$. The probability of repayment to the alternative firm exceeds that for the original SOE, i.e. $\gamma > \beta$.

Finally, if in any period, an outstanding loan becomes non-performing, the bank can initiate bankruptcy proceedings for which the outcome will be determined in the following period. The bank faces different probabilities of recovering its outstanding balance through the bankruptcy procedure. These are ρ for the private firm, α for the SOE if the bank rolls over the initial loan, and θ if the bank denies the rollover request. Since rollover improves the prospect of enterprise repayment and favorable government treatment for the bank, $\alpha > \theta$.

The manager's compensation and prospects for reappointment are tied to the net revenue generated over the three periods. The manager therefore wishes to maximize total net revenue over these three periods. The discount rate is assumed to be zero.

The decision tree, probabilities, and payoffs are shown in Figure A.1. The condition for approving the loan is that the net revenue for approving the rollover exceeds that for denial:

$$\begin{aligned} &(-iL + iL) + \beta i(iL) + \beta [iL + i(iL)] + (1-\beta)\alpha i(iL) - (1-\beta)\alpha [iL + i(iL)] \geq \\ &-iL + 2\gamma i(iL) + 2\theta iL + (1-\gamma)2\rho i(iL) \end{aligned}$$

This inequality simplifies to $\beta \geq [-1 + 2\gamma i + 2\rho(1-\gamma)i + 2\theta - (2i + 1)\alpha]/(1-\gamma)(2i+1)$. A.1

The comparative statics are shown below:

$\partial\beta/\partial\gamma = 2i(1-\rho)/[(1-\alpha)(2i + 1)] \geq 0$: As the probability for loan repayment in the non-state sector rises, rollovers for the state enterprise will require higher probability of repayment;

$\partial\beta/\partial\rho = 2(1-\gamma)i/[(1-\alpha)(2i + 1)] \geq 0$: As the probability of recovering delinquent loans in the non-state sector rises, rollovers for the state enterprise will require higher probability of repayment;

$\partial\beta/\partial\alpha = 2[-1+\theta-i(1-\gamma)(1-\rho)]/[(1-\alpha)(2i+1)] < 0$ and $\partial\beta/\partial\theta = 2/(1-\alpha)(2i+1) > 0 \Rightarrow \partial\beta/\partial(\alpha-\theta) < 0$.

$\partial\beta/\partial(\alpha-\theta) < 0$: As the probability of loan repayment or capital replenishment conditional on rollover approval rises relative to the alternative of no rollover, rollovers for the state enterprise will require lower probability of repayment;

$\partial\beta/\partial i = 2[\gamma+\rho(1-\alpha)+(i-2\theta)]/[(1-\alpha)(2i+1)^2] \geq 0$, for all $\theta \geq [\gamma+\rho(1-\alpha)+1/4]$ when $i=0.5$. For the extreme case in which there is no prospect of recovering a loan to the private firm (i.e. $\gamma=\rho=0$), θ must exceed $1/4$. As i rises, beyond, 0.5, the interest-free rate of interest, θ too must rise to sustain the negative sign. It is difficult to imagine a plausible set of parameter values in which $\partial\beta/\partial i < 0$. For example, if $\gamma=1/2$ and $i=3/4$, then θ must $> 7/8$.

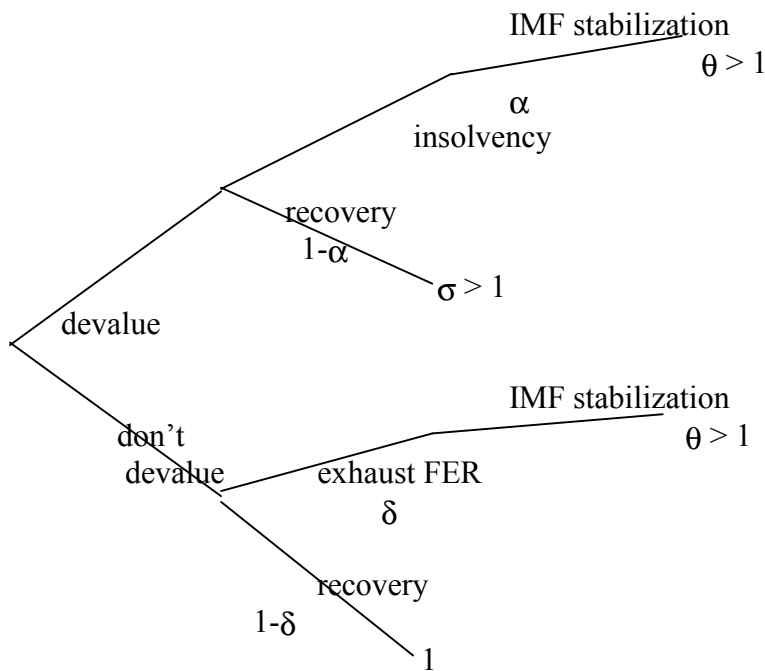
Annex B
 The Foreign Exchange Manager's Problem: Minimizing Social Cost

With the erosion of a nation's foreign exchange reserves, the foreign exchange manager confronts a choice. The choice is whether to devalue, in which case the existing large accumulation of foreign-currency denominated debt threatens to create widespread insolvency for enterprises and banks. Alternatively, the manager can postpone the devaluation decision, causing the country to run the risk of exhausting its foreign exchange reserves.

The manager's choice is fundamentally between summoning the nation's domestic institutions, including its political system, to manage the restructuring or to turn the problem over to the IMF. A devaluation, while stemming the erosion of foreign exchange, will test the resiliency of the nation's banking, bankruptcy, and court systems; it will pose a severe test to the political system that is needed to impose the discipline, including unemployment, required to sustain the workout.

The alternative is also not pleasant; it is not to devalue. A failure to devalue increases the likelihood of exhausting the nation's foreign exchange reserves, which will require immediate action by the IMF. The Fund will require structural adjustment, including a devaluation, but the Fund will cushion the shock with an influx of credit. Moreover, the external authority and monitoring capabilities of the Fund will ensure the discipline required to implement the stabilization program.

Figure B.1
 Extensive-Form Representation of the
 Foreign-Exchange Manager's Decision



The manager's choice set is described in the extensive form representation shown in Figure B.1 above. The set includes four potential outcomes; each is associated with a probability and a social cost. If the manager chooses not to devalue, the possible outcomes are: (i) recovery with probability $1-\delta$; the social cost is normalized at unity, or (ii) failure to recover with probability δ followed by an IMF stabilization program which carries a cost of $\theta > 1$. For a devaluation, the possibilities are: (i) a successful workout, with probability $1-\alpha$ and a social cost of $\sigma > 1$, or (ii) insolvency with probability α , followed by an IMF stabilization program, the cost of which is θ . The magnitude of σ may be more or less than θ .

The manager postpones a devaluation if, and only if, the expected social cost of avoiding devaluation is less than or equal to that of a devaluation, i.e.:

$$(1-\delta) + \delta\theta \leq (1-\alpha)\sigma + \alpha\theta.$$

That is, the manager postpones devaluation if:

$$(1-\delta)/(1-\alpha) \geq (\theta-\sigma)/(\theta-1). \quad \text{B.1}$$

According to this inequality, the relative social costs of an IMF stabilization program (θ) and a devaluation with a domestic workout (σ) determine the how large the probability of recovery without devaluation ($1-\delta$) must be relative to the probability of a devaluation with a successful workout ($1-\alpha$). As the social cost of an IMF stabilization program rises relative to the cost of a domestic workout, the threshold probability above which the manager will avoid devaluation, will approach $1-\alpha$, the probability for recovery given a devaluation.

The numeric logic of the no-devaluation decision can be illustrated with the following example: Suppose the cost of the domestic workout, σ , is 2; that of the IMF-led restructuring, θ , is 3. For this case, $(1-\delta)/(1-\alpha) \geq 1/2$. If the probability of recovery without devaluation is equal to or greater than one-half that of a successful workout with a devaluation, the manager will not devalue. In the limit, as $\theta \rightarrow \sigma$, the manager will avoid devaluation regardless of how small the prospect of a successful recovery. Alternatively, as the cost of an IMF-led restructuring becomes very large relative to that of a domestic workout, the manager will devalue only if the prospect of recovery without a devaluation matches the probability of a devaluation and successful workout.

This illustration, like that in Annex A concerning the decision of the bank manager whether or not to roll over the non-performing debt of a state-owned enterprise, depends critically on the ability of the system to restructure delinquent debt. An economy in which bankruptcy and liquidation procedures are not well-established reduce the likelihood that banks can recover existing non-performing loans (θ in the case of the bank manager) or that economies can workout the non-performing foreign debt of domestic banks and corporations following a devaluation ($1-\alpha$).

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