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Financial Crashes in the Globalization Era

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EVAN OSBORNE

On December 20, 1994, after more than a year of ballooning loan defaults punctuated by several political crises, Finance Secretary Jaime Serra Puche of Mexico announced that his government's target exchange rate for the Mexican currency would fall from 3.47 to 3.99 pesos per U.S. dollar. Although the action was portrayed as a routine adjustment in Mexico's adjustable exchange-rate system, the government announced just two days later that the peso would float freely. Within a matter of weeks, it plunged to five to the dollar as investors rapidly pulled money out of Mexico. In the aftermath of this collapse of the value of its currency and its financial markets, Mexico slid into an economic depression that resulted in a dramatic increase of immigration into the United States (Hanson and Spilimbergo 1999), a substantial decline of Mexican wages, and other economic upheaval that continued for several years.

The Mexican financial crisis was the first of a series of similar events that rippled around the globe, all of them in developing countries that had received huge inflows of foreign capital. In July 1997, the Thai currency, the baht, collapsed and quickly dragged the Thai economy down with it. Spectacular runs on currency and stock markets spread within days to two nearby nations, Malaysia and Indonesia. After a brief respite, two East Asian economies with much higher standards of living—South Korea and Hong Kong—endured similar collapses, as did Russia and Brazil in 1998 and Turkey in 2000. At the height of the turmoil in 1998, many observers wondered whether the international financial system itself might collapse.

The Mexican crisis and the financial crashes that followed it have at various times been blamed on the premature opening of financial markets to foreigners, unexpected

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political events, and changes in both U.S. interest rates and the value of the dollar, among other things. In fact, the Mexican crash was the first of what may be a series of similar crashes that will periodically occur when countries with a long history of statist misallocation of resources confront globalization.¹ Although measures can be taken to lessen the frequency and severity of such crashes, these events are in large part an inevitable result of a clash between economies in which governments have frequently overridden market prices and altered property rights, on the one hand, and a global investment community that demands that the price system determine how scarce resources are allocated, on the other. Thus, the financial crashes of the globalization era differ at least in degree and perhaps fundamentally from earlier collapses in industrializing nations. Moreover, they perform a vital housecleaning function that will enable countries that undergo them to prosper in the new world in which capital can flow immediately around the globe.

Financial Crashes as Rational Events

It will be helpful at the outset to define the events in question. A *financial crash* is a sharp, sudden decline in a wide variety of asset prices, such as corporate stock prices and real estate prices, after a prolonged, substantial rise. It is usually (but not always) followed by a similar prolonged slump in economic growth and an epidemic of business failures. Some observers assume that such a sequence must be a mysterious event that can be explained only as the result of ordinarily disciplined investors' foolish decisions to invest in a certain asset either because future returns are inevitable based on past returns (rather than on future profits) or because everyone else is doing the same. Although some economists have attempted to model herd behavior as a rational activity (Banerjee 1992; Bikhchandani, Hirshleifer, and Welch 1992), the notion of financial crashes as the result of investors collectively losing their minds as they pursue imaginary ever-higher returns in defiance of fundamentals is deeply ingrained in the conventional understanding of these events. Presumably for this reason, the rising prices are often referred to pejoratively as *manias*, whereas the collapses are called *panics*.

The famous Dutch tulip episode of the seventeenth century often serves as the poster child for such putatively irrational behavior. The tulip was introduced into Europe in the mid-sixteenth century and had become very popular among wealthy Dutch by the early seventeenth century. At the height of the craze in late 1636 and early 1637, money flooded in from Dutch and foreign investors to purchase tulip bulbs, and a single bulb sold for the equivalent of roughly \$45,000 today. In February 1637, the bubble suddenly burst, leaving economic devastation in its wake. For many (such as Krugman 1995), the episode holds lessons centuries later for nations that tolerate excessive speculation in nonproductive activities.

1. By *statist*, I mean any use of government power to influence resource allocation, aside from the protection of private property rights.

In contrast, Peter M. Garber (1989) has produced a contrary history of the tulip mania that is instructive about the rationality of both asset-price buildups and subsequent crashes. He notes that astronomical tulip bulb prices in themselves were not mysterious because such bulbs are among a select group of assets, such as racehorses and prize bulls, that can reproduce themselves. Hence, the price of such an asset can be much greater than the income stream the asset itself will yield directly. In combination with the fact that the flowers had become highly sought after by people willing to spend a great deal, the prices were no more mysterious than those that might prevail if prized bottles of Bordeaux could yield many generations of copies. In addition, the tulip market had several peculiar features. There was a constant production of new varieties because of unpredictable viral mutations. The value consumers attached to those varieties was highly idiosyncratic. Although many rare types existed, few ended up in high demand. Once they moved into widespread distribution, they were quickly reproduced, making the existing bulbs eventually much less valuable.

A futures market for bulbs was introduced in 1636. Because of Dutch authorities' deep suspicion of "speculative" as opposed to "productive" investment, the courts did not enforce the contracts in that market. However, a desire to maintain reputation could lead frequent traders to adhere to contracts despite short-term incentives to break them, and Garber musters evidence that for most of the bubble period they did comply with the contracts. The exception occurred in the final two weeks before the crash and almost exclusively in associations of people who had no history of participation in the tulip market and who gathered in taverns to trade. Such associations generally traded ordinary rather than unusual bulbs. Because the participants by and large had little net worth and little if any reputation as traders, repudiation was for them an unusually low-cost option. The spectacular collapse of those markets did contaminate the markets for the distinctive bulbs, but on several subsequent occasions the latter demonstrated the same price run-up as in 1637 without a general collapse. The inference Garber draws is that what went on in those markets was an ordinary recurring activity based on fundamentals, and only the peculiar outbreak in the common-bulb markets was aberrant.

Two of those fundamentals deserve mention because they characterize many developing economies today. The first is *large potential profits*. Consumers in Holland and France evinced a tremendous underlying willingness to pay for certain types of flowers. That such high demand sometimes gave rise to extraordinarily high bulb prices, particularly when combined with the self-reproducing feature alluded to earlier, is not surprising. The second fundamental is *great uncertainty*. No one could predict with assurance which tulip patterns would become popular. That uncertainty, combined with the high profits and the ability to reproduce rare bulbs rapidly once they had attained sufficient density in the population, made it perfectly reasonable that individual bulb prices would rise dramatically and then suddenly collapse. This pattern has been observed in many other flower markets since that time, suggesting that the supposed mania was (the ordinary bulbs excepted) a typical episode in the

flower industry in which rational investors pursued potentially substantial but highly speculative returns.²

The lesson is that spectacular escalation of asset prices followed by equally large, very rapid declines in no way requires mass irrationality. That rational investors can collectively heed all the available information and still participate in markets subject to such wild swings suggests that crashes perform a useful function, allowing the market (brutally in some instances) to sort out truly profitable from merely illusory investments. This shake-out function is an underappreciated function of crashes for those who view them as primarily irrational phenomena, and it plays an important part in my story of globalization era financial routs.

Rational Crashes in the Globalization Era

A Long View of Developing Countries and Financial Upheaval

A casual reading of history suggests that rapidly industrializing societies are far more prone to crashes than are either fully modernized or stagnant, preindustrial societies. The United States, for example, had what by modern standards are severe declines in asset prices followed by deep depressions in 1837, 1857–58, 1873–78, 1897, and 1929–39. Since World War II, the most severe recession in Europe or the United States was that of 1981–83, which was not remotely comparable to the sharp downturns of earlier years.³ The 1987 stock-market crash, though massive, led to no significant economic downturn.

Although the lack of spectacular crashes in the postwar period is sometimes credited to Keynesian macroeconomic management and to the advent of government deposit insurance for individual bank accounts, it can be understood more easily in terms of simple economic theory, in particular international-trade theory. Such theory argues that nations can benefit from trade because they differ. However, investors in a nation just beginning to industrialize will have great difficulty in selecting the goods that the country is best suited to produce. In addition, within a given industry it will take some time for the competitive process to sort out the most efficient firms. The same reasoning applies to nations that trade very little with other nations. Presumably, for competing industries and for competition among firms within an industry, many hopeful starters will fail to reach the finish line. For example, fewer than ten compa-

2. Garber (1989) also argues that the conventional wisdom of the Dutch tulip mania as a pointless episode of speculative excess took hold because it is purely received history. All specific commentary on the buildup and crash can be traced, he says, to documents published by Dutch government officials who wished to channel future investment into infrastructure and industry and who therefore were very skeptical of what they saw as pointless speculation, particularly in futures markets.

3. This statement is based on the decline in gross national product (GNP) rather than on the level of unemployment. Owing to labor-market rigidities and substantial payroll taxes, many European nations in the 1990s had unemployment problems indicative of a slump rivaling the depressions of old in both magnitude and length.

nies engage in automobile manufacturing in the United States today, but at the time of the 1929 crash, hundreds operated.

Competition and differential growth determine the winners. Ill-fated industries or firms may operate and even thrive for a time. Eventually they will fail, but in the meantime they will attract a great deal of investment. In a classic work, F. A. Hayek (1978) has described the ordinary process of competition as a way to reveal information about value and cost. This process occurs in a profound way in industrializing societies. The systematic learning of how a nation's resources should be reallocated during industrialization should lead to long, substantial expansions as physical and human capital are accumulated, with periodic bursts of bubbles as some industries and firms vanish after having been revealed to be unprofitable. This process should presumably continue until the economy has converged to modern living standards, when most of the difficult resource reallocation work has already been done. The gradual spread of modern division of labor and technology to regions of the world that have not experienced it will presumably be a bumpy ride from time to time—it certainly was for the United States, Europe, and Japan.

The Globalization Factor

Present conditions differ from those during the industrialization of North America, Europe, and Japan because of the globalization revolution. The word *globalization* itself is relatively new and means different things to its supporters and its opponents. One indisputable fundamental economic change during the postwar period is the vast increase of both the amount and the mobility of foreign portfolio and direct investment.⁴ Although portfolio investment has received most of the attention in analysis of recent crashes, the conclusions here apply to both types of investment.

Neither type of investment is novel. The British and Dutch East India Companies were importing materials to Europe by the seventeenth century, and many foreigners were heavy purchasers of the bonds that financed U.S. industrialization in the nineteenth century. In recent decades, however, modern investment institutions and technology have greatly enhanced the ability to move money and production across national borders, whether moving in because a country appears attractive or moving out because investors have become pessimistic. In the United States and other industrialized countries, the large increase in the share of the population investing in financial assets either directly or indirectly via mutual funds has led to a surge of money looking for a destination. At the same time, disposing of assets is simpler than ever, involving nothing more than a telephone call or a few strokes on a computer keyboard. Similarly, lower construction and transportation costs for foreign direct invest-

4. These terms take the standard meaning: *foreign direct investment* is construction of physical production facilities in foreign countries, and *foreign portfolio investment* is investment in foreign stocks, bonds, and other securities.

ment have caused it to surge in the postwar period, particularly in the 1980s and 1990s. The total flow of such investment was a mere \$25 billion in 1975 but \$430 billion in 1998—a growth rate far exceeding that of both global output and trade during the same period (United Nations 1997).

The impact of this technology on the number and size of financial crashes may well be profound. Of course, the massive global investment community constantly seeks higher returns, so it constantly probes various firms in various industries in various countries in an attempt to find them. The process has always been one of trial and error, but the current ability to move investment in and out much more rapidly as new information is gathered implies that a spreading series of countries will suffer (by past standards) highly erratic flows until their economies are modernized. Hence, their general economic upswings and downfalls will also be greater.

The Unraveling of Statism

A third factor that enters the model of financial crashes in the modern era is, like the much more rapid flow of portfolio and direct investment, a new phenomenon. We must distinguish initial industrialization from a preindustrial base, on the one hand, and liberalization of an economy with substantial modern industry after a long period of state dominance, on the other. An initially industrializing economy reallocates labor and other scarce resources away from relatively simple activities, such as labor-intensive farming or urban peddling, toward gradually more sophisticated industries. A liberalizing economy has a much more difficult task: the reallocation of resources from some complex, relatively modern industries established under state (mis)guidance to others whose payoff is uncertain. In the most extreme example, that of many formerly communist countries, resources were allocated almost exclusively by state command rather than by voluntary exchange. Such command-economy procedures were not dominant in countries such as India or Brazil, but the state nonetheless played a major role in determining what would and would not be made. Note that state influence over resource allocation does not require outright state ownership. The state can influence a society's industrial profile by selective protectionism, taxation, subsidy, access to import and foreign-exchange licenses, and a host of other actions.

The degree to which developing economies endured state interference in the price mechanism and property rights is in many ways the key to understanding the global economic story of the postwar period. Such interference was boosted both by the belief that free trade was another way for the colonial powers to reassert economic hegemony and by developments in mainstream economic thought in the West.⁵ By the 1950s, the Keynesian revolution, advocating government countercyclical management of a macroeconomy that could not look after itself, was well entrenched. In

5. Yergin and Stanislaw (1998) go so far as to date the era of statism, arguing that it began with the election of the British Labour government at the end of World War II and ended decisively with the 1997 Asian crash.

addition, European nations had nationalized many firms by the late 1970s. As the new nations gained their independence from the 1940s through the early 1960s, it is not surprising that contamination from prevailing first-world economic doctrine reinforced the local preference for statism that arose out of colonialism.

From Jawaharlal Nehru's claim that the state should always control the economy's "commanding heights" to the claims of U.S. macroeconomists in the 1960s that the business cycle was obsolete, the state was viewed as capable of correcting systematic failures of free markets. Thus, governments throughout the developing world adopted a host of price controls, produced a wide variety of goods through "parastatal" public organizations, and largely sealed their economies off from the outside world. Such policies, of course, led to spectacular resource misallocation. Therefore, societies that emerge from such command structures as they liberalize have greater but even more mysterious potential than a preindustrial economy. For example, before liberalization, there may have been large production of steel and automobiles, owing to state regulation of prices or state ownership of manufacturing facilities, but much of that production was probably unjustified by underlying demand and supply. How the resources tied up in those industries should be used is unknown at the outset of liberalization and is learned only after a long period of competitive experimentation. If capital moves quickly, the underlying resource base is strong, and the efficient arrangement of resources is more difficult to discern than usual because of past statist distortions, we can expect speculative buildups followed by crashes.

Although scholars often refer to the transition economies as those formerly within the Soviet bloc, it is more useful to speak of *poststatist* economies. All such societies are forced by years of poor economic performance to undo the regulation, subsidies, and other state interference that are substantially responsible for their backwardness. As liberalization occurs in such societies, workers, land, and other productive resources will be allocated away from industries favored by the state and into other (perhaps initially nonexistent) uses. As competitive liquidation of the inefficient statist economy proceeds, investment capital and other resources may flow to many industries and firms viewed as promising, even though in the end only some of them will be successful.

Eventually, some industries and firms will be revealed to have been poor bets, so investment capital will flow out of them. These episodes, like the flower price cycles of past and present, are a necessary step in efficient resource reallocation. Indeed, if one of the things investors learn is that statist intervention has a far greater impact or is far different than previously believed, the need to shed resources may still be substantial even after a shake-out crash, especially if strong potential remains but necessary reforms are not as extensive as they were expected to be. We may reasonably expect, therefore, a series of bubbles and crashes, possibly of progressively diminishing magnitude, before resources are finally allocated efficiently.

It is worthwhile to consider what Eugene White (1990) has written about the great crash of 1929. Like the tulip mania years, the 1920s are often presented as a time when investors took leave of their senses and assumed that what went up would never come down. White disagrees with this presentation, depicting the period instead as a time of unusually profound economic transformation:

The economy of the 1920s underwent major structural changes. New industries using new technologies became the leading sectors, and the system of industrial finance was wholly charged. Confidence in prosperity based on these new industries was not misplaced, but there was no past experience to evaluate the profitability of emergent companies, such as General Motors or RCA. Parallel to the unification of the railroads in the 19th century, utilities in the 1920s were combining to create regional and national networks. This was another immense advance, but one whose success was hard to measure. Speculation was centered in those securities whose fundamentals were not well defined. (237)

The nations making the transformation to a market economy have uncertainties similar to those of the United States in the 1920s, magnified by the greater speed of movement of capital from losers to winners and by the greater initial resource misallocation resulting from years of state economic mismanagement. Hence, financial crashes differ in both degree and result in two senses from those of earlier eras. Because of the easier flow of foreign capital, the degree of speculative buildup is likely to be greater, and because of previous statist misallocation, the need for the investment community to shake out mistaken ventures (and hence the extent to which very flexible markets will perform that function) is greater for a country just beginning modern economic growth or for an already industrialized country sorting out a series of emerging new technologies. At the same time, the faster nature of modern markets implies that the time between initial liberalization and a shake-out crash is likely to be much shorter.

The 1998 financial crash in Russia can usefully be interpreted in terms of the framework presented here. The immediate event that galvanized world attention was the Russian government's announcement on August 17, 1998, that it would default on some Treasury bills and declare a ninety-day moratorium on its payments to foreign creditors. This announcement led to a stampede out of the Russian currency and stock markets. But, as Åslund (1999) notes, the crumbling of Russian asset markets actually began earlier, with a 20 percent stock-market plunge in one day in October 1997, sandwiched between wild instability throughout much of 1997 and 1998.

Such instability during the liberalization transition is hardly surprising given the twentieth-century history of Russia. The road to a free economy will be more difficult for Russia than for almost any other nation because the new Russian economy is being built on the rubble of the almost fully centrally planned economy of the Soviet Union.

Russia emerged from the Soviet experience with immense potential. In addition to a huge endowment of a wide variety of natural resources, it possesses tremendous scientific talent. In the absence of the price mechanism, however, that talent and all other resources were systematically misallocated, and the task at hand upon the emergence from communism is to reallocate them properly. Russia in 1991 had many factories that were essentially worthless in terms of their ability to produce goods of value to freely choosing consumers. Discovering what to do with Russian land, workers, and other resources is an immensely complex task that the price system will accomplish only with considerable difficulty.

Such reallocation has been made considerably more difficult by the sporadic nature of reform in Russia in the years since its last communist ruler, Mikhail Gorbachev, left office. As far back as the late 1980s, many communist apparatchiks were able to take advantage of liberalized decision-making procedures under the Gorbachev regime to get natural resources at state prices from Soviet state-owned enterprises (SOEs) and to resell them on world markets for enormous profits. A few of these officials became immensely rich and were able to take advantage of their new wealth to buy many SOEs at fire-sale prices during the privatization of the early 1990s. They used their influence with the Boris Yeltsin government to gain the enactment of many competitive restrictions and subsidies, thereby substituting tremendously inefficient private monopolies for the SOEs of a few years earlier.

When Russia began to open up its economy in the 1990s, foreign investment surged in, attracted by the country's tremendous economic potential. However, because property rights were not well established⁶ and because resources had been systematically misallocated for more than seventy years, investors had no way of immediately knowing the precise ways in which their investments could generate the highest returns. Such information had to be revealed through learning, and learning necessarily involves making many mistakes. The repeated upheavals in Russian financial markets, including the 1998 crash, are presumably part of this process.

The Russian reallocation was also aggravated by unexpected Russian government measures. In particular, in July 1997 the Russian Duma rejected a reform package endorsed by Western governments, the Russian executive branch, and the International Monetary Fund (IMF). That event is often viewed as the immediate trigger of the August 1998 crash. Whether it was or not, however, the efficient disposition of foreign investment capital and Russian resources in general is clearly a process still in its early stages. In all likelihood, Russia can expect more such episodes, albeit perhaps of smaller magnitude, before its reform is complete.

In sum, in rapidly industrializing nations, occasional booms and crashes are a natural event; they can occur even in societies with minimal government economic intervention. The peculiar features of the modern global economy—faster realloca-

6. Even now, more than a decade after the fall of the Soviet Union, land cannot be bought and sold legally in Russia.

tion of resources plus a long history of systematic misallocation by the governments of many promising economies—make such events likely to be more severe and more common, especially in societies emerging from rampant statism. With this explanatory framework in mind, we now proceed to explore the relation between it and existing explanations of the recent financial crashes.

Other Theories of Financial Crashes

Two theories of macroeconomic fluctuations are sufficiently prominent to merit comparison: (1) what has come to be known as the Austrian theory of the trade cycle, and (2) the neo-Keynesian analysis of recent crashes in developing countries, whose most prominent current adherent is Paul Krugman. It should be noted that although the terms *business cycle* and *trade cycle* are commonly used, they imply a regularity that is not warranted in the view developed here. My present goal is simply to explain speculative buildups and crashes in poststatist developing countries as necessary adjustments to a radically changed economic environment. Of necessity, the overlap with traditional theories will be limited because those theories are intended to explain a much broader range of events.

My theory shares one feature with the Austrian model and hence is complementary with it up to a point. In Austrian theory, real economic disturbances, such as unexpectedly large productivity improvements, can cause a higher rate of economic growth. However, private banks can create credit without the backing of metal or other real assets (Mises 1996), and the guarantees provided by the expansion of central-bank liabilities during the boom allow private banks to create more credit than they would in a competitive market for money (Rothbard 1996). Consequently, during periods of economic progress, banks create credit faster than underlying conditions warrant. Economic actors eventually discern this excess, but as they begin to reallocate resources, central banks typically lower interest rates. Those lower rates cause producers to misallocate resources “vertically”—that is, to overinvest in earlier stages of the production process rather than to invest in later stages such as the distribution of consumption goods. That mistake, too, is eventually learned, but the longer this learning takes and the more it is hobbled by faster credit creation, the more painful is the inevitable adjustment.

Austrian theory, however, has little to say about the original cause of the boom, focusing instead on problems caused by central-bank error (both directly and indirectly via the incentives central banks give private banks). There is no requirement in Austrian theory that an original event must lead to a great boom followed by a crash. Indeed, adherents of the Austrian theory tend to suggest that many periods of unusually fast growth are unnatural and rooted solely in credit expansion. In contrast, my approach suggests that some periods of rapid growth are rooted in real economic change and provides an explanation for the initial surge and the subsequent downfall in economic activity that hinges on real resource allocation decisions that occur independently of central-bank activities.

However, these two approaches can be complementary because nothing in the Austrian theory precludes a rational speculative buildup or subsequent crash, and my own approach is perfectly consistent with the possibility that central-bank policy magnifies the amplitude of economic cycles in poststatist economies. That the Great Depression was an event with real roots, for example, in no way forecloses the possibility that the Federal Reserve exacerbated the problem. The theory advanced here can be thought of as to some extent completing the causal chain of Austrian thinking by providing a theory of what sort of event may launch the boom that eventually leads to the effects whose monetary components the Austrians emphasize.

In the modern Keynesian interpretation of booms and crashes, the explanation also hinges in part on money, but in this view the problem has to do with aggregate demand via money demand.⁷ When an economy crashes, consumers seek to hoard money, so the amount of money circulating is insufficient to support economic recovery. According to the Keynesian view, the solution is therefore perfectly straightforward and diametrically opposed to the Austrian solution. In the event of a sudden crisis, interest rates should be lowered dramatically. In a prolonged slump, characterized by an unwillingness to borrow money at any rate of interest (the “liquidity trap”), the currency should be moderately inflated until consumers become unwilling to hold additional amounts of it. As money spending increases, aggregate demand revives, and the slump ends.

Unfortunately, even assuming that this view were correct and that expansionary monetary policy would cause growth to resume, the recommendation is flawed if one assumes that a crash occurred because of profound resource misallocation problems. In the Keynesian view, unemployed workers and idle factories are assumed to be self-evident waste, but waste can be defined only in relation to what is desired and how resources can be converted into what is desired. It is not obvious at all that the sudden unemployment of large numbers of people and the shuttering of thousands of businesses are events to be avoided, as Keynesians have always assumed. Those facilities were constructed on the basis of given knowledge, which had manifested itself in price signals modified by whatever state activity existed at the time. When the crash itself reveals new knowledge, to insist on the same use of resources is to treat that new knowledge as worthless.

A Thai factory that is saved from bankruptcy only because the money supply has expanded is no less wasteful than a Soviet cement factory that operates only because its resources have been commandeered by the state. The proper definition of waste always hinges on whether or not given resources would create more value in other uses. To inflate the baht to save the Thai factory and thousands of similar businesses is to presume with certainty that operating those facilities is the most valuable use of scarce resources. But that presumption is inconsistent with a recognition that only the price system can allocate resources so as to create the most

7. A useful and brief description can be found in Krugman 1999. At one point, Krugman describes “depression economics” as “insufficient private spending to make use of the available productive capacity” (155).

value, *given that information is costly and decentralized*. In the Keynesian view, the past (precrash) allocation of scarce resources is unjustifiably presumed to be efficient simply because it existed. Preventing restructuring, however, only makes it more difficult for investors to ferret out the best uses of resources, a particularly compelling problem for poor countries, whose crying need is to accomplish that task as rapidly as possible.⁸ If the source of the slump is real resource misallocation, the solution must be real resource reallocation. To suppose that recovery can occur without a substantial amount of such reallocation is to assume, in effect, that there is such a thing as a free lunch. If resource misallocation is the problem, any solution that does not focus on resource reallocation only postpones genuine prosperity.

In addition, the inflation remedy risks creating a costly moral hazard problem in economies that badly need restructuring. If businesses survive because of inflationary monetary policy even though they would have failed because their operations are not consistent with costs and consumer valuations after the crash, investors learn that mistaken investments have no downside risk, and hence they are encouraged to make such mistakes repeatedly. They will continue to make investments unsupported by consumer valuation or resource cost, secure in the knowledge that the monetary authorities will come to their rescue.

What to Do about Financial Crashes in the Developing World

The view of postglobalization financial crashes developed here has a number of implications for policy in rapidly industrializing countries and in multilateral organizations such as the IMF. The first lesson that must be learned by those designing policy for such countries is that shake-out crashes are inevitable to some extent. The unique circumstances of poststatist economies in the globalization era entail that there will be many false starts and blind alleys as local entrepreneurs and foreign investors struggle to find the right investments and firms. Countries such as Mexico, India, Russia, and China will undoubtedly go through a lengthy period of rapid growth interrupted by occasional meltdowns.

Information Conductivity

Countries can take certain measures to minimize the frequency and trauma of such events, though. One commonly discussed and important means of improving the ability of investors to make intelligent decisions is the provision of greater trans-

8. Although Krugman assumes that moderate rather than extreme inflation will usually be sufficient to revive the economy, it should also be noted that for a variety of reasons inflation is often thought to interfere with the ability of prices to relay information to buyers and sellers about value and cost (Leijonhufvud 1981). A deliberate inflation would thus seem to make it even more difficult to move misallocated resources in a very poor society to where they have greatest value.

parency—that is, making the operations and financial circumstances of the state and the private sector more visible to those who are asked to fund local entrepreneurs (Friedman 1999). A prime way to help accomplish this task is to ensure that public and private accounting statements more accurately reflect underlying financial performance.⁹ If companies or governments in tremendous financial difficulty mask those circumstances, investors will eventually find out anyway, but concealing the truth will make the eventual reckoning costlier.

A second consideration is freedom of the press, in particular the financial press. In many countries in which the economies are dominated by elites who are either in the government or have close links to it, it is common to suppress the ability of both the domestic and the foreign press to report on government shortcomings and financial data. Such limitations increase the economy's opacity, forcing investors to work harder to discover the true financial status of the government and to determine which firms are profitable and which are not. As entrepreneurs and investors strive to identify efficient resource use, they will make more errors because of this opacity, leading to more instability in the modernization process.

Corruption

Corruption is another remediable problem. Corruption is critical to investors because it requires them to ferret out a great deal more information. Although a participant in a particular economy has information about the corruption he has experienced firsthand, and he may know that the economy in general is very corrupt, the existence of corruption makes the viability of other particular firms difficult to appraise. When deciding whether to invest in car production in country X, he observes that several other firms (foreign or domestic) operating there are at least nominally profitable. He may not know, however, the extent to which that profitability rests on specific privileges provided by a corrupt government. This lack of information makes it more likely that he will make the wrong decision. He may overemphasize the importance of corruption and not invest when he should, or he may underemphasize it and invest when he should not. Corruption in general amounts to “noise” in the signals of the price system; it reduces the informational value of observed firm-specific economic data.

That corruption is a big problem in many developing societies is hardly a revolutionary insight, of course, but the insights developed here put its costs in a different light. Whereas press restrictions and accounting opacity represent barriers to information, corruption distorts valuable information, making it difficult to perceive. The more corrupt an industrializing country is, the more skewed its resource allocation

9. *Editor's note:* Observing that “central banks have a history of hiding information and, yes, lying,” Steve H. Hanke has recently proposed that the IMF require every central bank to post its current consolidated balance sheet on a Web site, in English and in an orthodox form. A country that failed to comply with this requirement would “not qualify for IMF support.” See “IMF Early Warning Should Start on the Web,” *Wall Street Journal*, May 1, 2001, A26.

will be because of government interference in the assignment of property rights and in the operation of the price system. In the presence of information barriers, very corrupt societies will probably have to fall farther when a crash occurs.

And Then the Deluge

The interplay of these problems in contributing to the frequency and severity of crashes can be illuminated by thinking of them as a catastrophic “dam break.” Investing in a foreign economy (or anywhere for that matter) can be thought of as wading through a river in the dark in order to reach its source. The water flow represents guidance for the investor, and as long as the flow is even, the investor can continue to proceed carefully and successfully. However, rocks and other obstacles represent unprofitable ventures that have to be clumsily circumvented. Each barrier to information collection represents a brick in a dam separating investors from valuable information they need in order to proceed successfully. Corruption (and resource misallocation arising from government economic intervention generally) generates a high volume of information that investors would like to encounter as smoothly as possible, but that information is backed up behind the dam. Investors who encounter major obstacles and finally the dam begin individually removing and chipping away at them. Each chip by each investor causes the dam of informational barriers to weaken until finally it collapses. In other words, investors collect information, despite the obstacles they face, until the markets crash. Then information comes flooding out as the extent of corruption and boondoggle ventures is revealed, and investors adjust as rapidly as they can to the new circumstances. Clearly, erecting extra obstacles to information collection only makes the dam higher and hence the eventual dam break that much worse.

In this perspective, the 1997 crash in Southeast Asia is revealing. Thailand had a pegged exchange-rate system in which the central bank, by buying and selling in the foreign-currency markets, tried to maintain a stable exchange rate of the baht against a U.S. dollar that was then rising against major world currencies. As far back as early 1996, the baht came under selling pressure, which led the Thai authorities to try to defy economic gravity by depleting their foreign-currency reserves to preserve the peg. Later in 1996, economic growth decelerated, and the financial position of many banks and other finance companies began to deteriorate. In February 1997, a major real-estate developer, Somprasong, defaulted on foreign-debt payments, and stock trading in a finance company, Finance One, was suspended amid concern over its ability to make foreign-debt payments. Throughout the second quarter of 1997, the stock exchange of Thailand continued a substantial but reasonably orderly decline that had begun in 1996.

As sentiment mounted that the overhang of dubious loans in Thailand posed a substantial problem, another speculative attack on the baht began in May 1997. At

considerable cost, the Thai government maintained its peg for a few weeks, but only by nearly exhausting its foreign-currency reserves, a fact the world would not learn until later. On July 2, 1997, the government announced that it would no longer attempt to maintain the peg rate of twenty-five baht to the dollar. Because so many Thai companies had debts denominated in dollars, the subsequent collapse of the baht caused bankruptcies, explicit and functional, to soar, and the Thai economy collapsed in short order. On July 28, 1997, Thailand asked for and quickly received loans from the IMF to enable it to get its financial house in order.

Although much attention has properly been devoted to inadequate regulation of the financial system and other weaknesses that in hindsight should have been red flags to the local and world investment communities, an undeniable result of the Southeast Asian crash was a massive shake-out in economic activity as thousands of firms collapsed, releasing resources to be used elsewhere (Friedman 1999). Some indication of the amount of missing investor information prior to July 1997 can be inferred from the fact that the IMF, upon disentangling the government accounting statements of South Korea and Thailand, discovered that both countries had overstated their foreign-currency reserves by more than 200 percent when their economies were most besieged. If IMF member governments could successfully deceive the international investment community about such a basic and widely publicized economic variable, private firms must also have been concealing a tremendous amount of information, causing the eventual crash to be all the more spectacular.

The Southeast Asian experience is also instructive for the different lessons to be drawn from my approach versus the modern Keynesian analysis. Krugman (1999) makes much of the fact that Sweden and Britain in the 1990s suffered episodes of questionable lending and significant currency depreciation, respectively, without enduring a catastrophe. He argues that in Thailand a panic took hold: a costly feedback from declines in financial markets to declines in the economy and back again caused the Thai economy to spiral out of control. The panic then spread, in defiance of common sense, to economies fundamentally in much better condition.

The solution? At various points, Krugman suggests tariffs to increase employment and hence aggregate demand in Argentina, and monetary expansion to increase aggregate demand in Japan and other Asian economies, but he errs by supposing that Mexico and Thailand should have reacted as Sweden and Britain did. In the latter, much less corrupt economies, the conductivity of financial information is great, and development has already occurred. They are places, in short, where the conditions of speculative buildup sketched here do not exist without dramatic technological change. The same fundamental distinction arises again: do buildups and crashes happen because of “manias,” “contagions,” “tequila effects,” and other systemic deficiencies of profit-maximizing investors, or do they happen in substantial part because of the (in certain circumstances) inevitable misallocation and subsequent necessary reallocation of scarce resources?

The State, Prosperity, and the Third World

A simple set of recommendations emerges about how to deal with speculative buildups in the developing world. The first is to recognize that to a substantial degree such events are inevitable, particularly in countries with a long history of substantial state influence over resource allocation. The more extensively an economy was previously state directed, the more difficult its adjustment will be. Fortunately, governments can take measures to minimize the magnitude and frequency of such events. The most important, of course, is to maximize the conductivity of the financial information system. Recipes for disaster include accounting standards that tolerate the masking of financial irregularities and laws that restrict the reporting of both those irregularities and the full extent of the connections between government and business.

My argument also suggests an additional rationale for restricting state involvement in economic development. Among the traditional reasons for limited government as a means of promoting prosperity is the idea that states make poor decisions about resource allocation, so that a dirigiste process in which the state nurtures strategic industries and firms is over the long haul likely to fail (Page 1994). In addition, an interventionist state encourages economic actors to devote more and more resources to currying the artificial rewards created by state intervention and fewer resources to actual wealth creation (Krueger 1974; Tullock [1967] 1980). The novel argument here is that corruption introduces so much noise into the price system that its signals become very difficult to detect. Investors will make more mistakes over longer periods of time, delaying prosperity and making the journey to it much more turbulent.

Global Capital Mobility: Friend or Foe?

Another implication of my approach concerns a widely offered nostrum for financial instability in the developing world: close local financial markets to short-term foreign capital. Many prominent scholars, notably Joseph Stiglitz, former chief economist of the World Bank, have suggested that allowing unrestricted portfolio investment by foreigners does more harm than good because it is so unstable (Stiglitz 1998). Foreign funds flood into a country in pursuit of higher returns, but after any modest change in investor sentiment, justified or not, panic sets in, and the market is routed. Therefore, such highly liquid flows should be restricted. In evaluating such policies, we should note that inevitably they increase the difficulty of getting access to capital to fund both wise and (in hindsight) unwise projects. When Latin American countries went through their debt crises of the early 1980s, much of the debt was to banks, especially U.S. banks. Because of the painful rescheduling programs of that period, many of those nations had little access to foreign capital of any sort for many years, as once-bitten, twice-shy bankers refused to return. In contrast, the nations of Southeast Asia were tapping global financial markets again within months of their collapse, often

after significant (although still far from complete) reforms. Short-term portfolio investors are much more forgiving of past mistakes, as long as they believe necessary reforms have been made, than are risk-averse bankers. To limit access to short-term capital is to close off promising but underdeveloped economies from vast sources of the resource they need most urgently.

In addition, those who recommend capital restrictions misunderstand why capital sometimes rushes in and then rushes out. Recall that countries such as Russia, India, and Mexico have abundant human and natural resources that have been systematically wasted for decades. Capital flows in precisely because these countries hold such great promise. However, no one knows *ex ante* precisely how best to exploit that potential. As the layers of the statist onion are peeled back, investors learn more and more, but at the cost of having to undo their previous mistakes. Discovery of such mistakes, of course, periodically prompts investors to withdraw their capital. Capital flows are the symptom, not the disease.

In fact, given the need for substantial reconfiguration of many economies in the developing world, an argument can be made that rapidly adjusting global financial markets can accelerate the reform process by culling out the losers more quickly. In the absence of these markets, the rot in Asia and elsewhere might have taken years to discover, and once the discovery did occur, recovery might have been years more in the making. The failure to take account of this function of foreign portfolio investment—that is, its role in the restructuring of societies laden with heavy legacies of statist resource misallocation—is a major omission in the analysis of these markets. To leave this function up to traditional banks or, worse, to multilateral financial organizations whose objective is not profit maximization would condemn developing countries to an unnecessary postponement of prosperity.

Conclusion

Financial crashes in developing countries have been misunderstood in recent years. It is always assumed that a crash occurs because of a completely preventable error. Given the ruin that follows crashes, preventing them therefore seems like an obviously necessary step. But crashes, like fires ignited by lightning in the American West, perform an immensely useful if seemingly destructive function. They allow societies to cull the deadwood of firms and industries with no long-term prospect of success, given consumer demands and production costs. Perhaps equally important, they place pressure on governments to accelerate reforms that allow the price system to function more effectively and therefore allow long-term, lasting prosperity to be attained more expeditiously.

The experience in many countries after their brushes with globalized death is instructive. In Thailand, a bankruptcy law was finally adopted after years of delay, giving creditors and debtors a way, at least in principle, to settle debts in an orderly,

nonrandom way. Laws restricting the ability of foreigners to own stakes in domestic businesses and to lease land were relaxed. In Indonesia, there were twenty-eight thousand instances of whistle-blowing against government misconduct between the resignation of President Suharto in May 1998 and July 1999 (Boon 1999). Malaysia has been forced to engage in a transparent cleanup of corrupt banks. The South Korean government has liberalized laws restricting layoffs and has reconciled itself to foreign ownership of several crown jewels among the assets of its dominant firms.

In each case, the reforms are only preliminary, and much remains to be done. Many commentators believe that reform has occurred predominantly in the financial sector. Reform of industry, in particular the cutting of the links between industrial firms and governments, remains in its infancy. But such reforms will inevitably follow unless these countries cut themselves off from the global capital markets at tremendous cost. Assuming they do not cut themselves off, then reforms will ultimately (though not necessarily immediately) occur and will immensely benefit the residents of postcrash societies.

Another question my analysis does not resolve concerns the pace of reforms. Some anecdotal evidence suggests that both dramatic, one-shot “shock therapy” of statist economies (for example, Chile in 1973 and Poland in 1989) and gradual reforms (for example, India since the late 1980s) can be effective. Clearly, however, gradual reforms imply that the necessary resource reallocation will take longer, and hence the road to prosperity, though potentially less bumpy, will nonetheless be longer. Even after more than a decade of reform, India has not achieved growth rates approaching those of the East Asian miracle economies of the 1960s through the 1980s, nor has it come close to eliminating statist impediments to prosperity. Although India may not experience a Thailand-like crash for some time, that delay comes at the cost of postponing the entry of hundreds of millions of desperately poor people into modernity. If crashes perform the shake-out function suggested here, such delay of genuine reform may actually be counterproductive.

Finally, the analysis is suggestive with respect to the moral hazard claims made against bailouts of countries that have gone through episodes of boom and crash. Whether one considers the U.S. guarantee of Mexican public debt in 1995 or the later IMF bailout of investors in Thailand and Korea, such actions immunize investors from the consequences of poor decisions and therefore almost guarantee that they will again make excessively risky decisions in the future. If investors in poststatist developing countries are essentially engaged in sorting the promising from the unpromising, then government diminution of their downside risk only makes successful accomplishment of that task more difficult. Besides making future speculative buildups more likely because of moral hazard problems, such bailouts place obstacles in the path of the difficult but necessary work of reconfiguring these economies.

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