The causes of financial crises: moral failure versus market failure

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"Blaming victims is an appealing evasion of responsibility, especially when the victims are far from virtuous. But when the sins are as heterogeneous as those of the Latin American regimes of 1980, one wonders how well the exemplary mass punishment fits the alleged individual crime."

Carlos Díaz-Alejandro, 1984[1]

Victorian: typical of the moral standards, attitudes, or conduct of the age of Victoria, especially when considered stuffy or hypocritical.

Merriam-Webster Dictionary

[1] Díaz Alejandro (1984).

The Argentine atrocity

In December 2001, violence and looting on the streets of Buenos Aires caused democratically-elected president Fernando de la Rúa to resign. The Argentine economy had been contracting for three consecutive years, but things were to get worse still. After de la Rúa's departure Argentina had five presidents in less than two years. In 2002 the economy shrank by an extraordinary 11 percent. By one estimate, nearly half of the citizens of this once-rich country were living below the poverty line. Early that same year Argentina defaulted on its foreign public debt. It was the largest default ever in a world already chockablock with financial meltdowns.

It is tempting to see finance as a morality play: those who get into trouble must have done wrong, and bankruptcy is the proper punishment for the wayward. When it comes to Argentina, a country that was muddling through its fourth financial crisis in two decades, that temptation was particularly strong. Argentina's most recent default was the fifth on its government since independence from Spain in the early 19th century[2]. The country has a reputation for imprudent policies and flashy politicians (Carlos Menem, president between 1989 and 1999, liked to drive a Ferrari Testarossa around town; he is now married to a former Miss Universe).

Pundits were quick to allocate blame, and most of that blame went to Argentina and its government. The most popular conclusion: too large a budget deficit was to the cause of the crisis. After all, the public had gone from 80.3 billion dollars at the end of 1994 to 144 billion dollars in 2001. Michael Mussa, chief economist at the IMF at the time the Argentine crisis was unfolding, wrote a whole book on the subject that blamed "the large and persistent excess of public spending over recurring revenues that led to an unsustainable accumulation of public debt…"[3] The view keeps being repeated. In a recent Newsweek article, Kenneth Rogoff, a Harvard professor and Mussa's successor as chief economist at the IMF, has written: "…one didn't have to be Nostradamus to foresee Argentina's recent collapse. Facing persistent budget deficits and volatile world prices for its goods, Argentina fought in vain to maintain a rigid currency peg to the dollar."[4]

The view sounds plausible. Fighting to maintain a peg almost always ends in disaster. But as an account of what went wrong in Argentina, it is incomplete. To gain some perspective it helps to recall that just a few years earlier Argentina had been the toast of Wall Street, celebrated for its success in axing inflation, privatizing, deregulating, and linking its currency to the dollar through the so-called *convertibility* system. This was not pure ideology. In 1991-97 the Argentine economy grew 6.7 percent per year on average, a spectacular performance second only to Chile's within Latin America.

Argentina had not gone on a spending party. Non-interest government expenditure – including Argentina's notoriously free-spending provinces– remained constant as a share of GDP throughout the 1990s. It was 24.6 percent of GDP in 1993, a year when

[2] Reinhart, Rogoff and Savastano (2003), Table 1.
[3] Mussa (2002), (p. 51).
[4] Newsweek International Edition, February 16, 2004.

Argentine ministers were being cheered on Wall Street, and 24.4 percent in 2001, with almost no variation in between.[5] [6] There was a budget deficit, due mostly to collapsing revenue and ballooning interest payments. But successive Argentine governments tried again and again to fix the budget. They also pursued other policies to armor-plate the country against a possible financial crisis. As late as May 1999, the International Monetary Fund was claiming that "Argentina is to be commended for its continued prudent policies… the sound macroeconomic management, the strengthening of the banking system and the other structural reforms carried out in recent years ... have had beneficial effects on confidence.[7] After that Argentine finance authorities persevered, raising taxes sharply in early 2000. In November 2000 the IMF voted another jumbo loan, yet again expressing faith in the soundness of the policies pursued by Buenos Aires. Argentina cut government wages and pensions by 13 percent in August of 2001, as part of a "zero-deficit" policy. Yet nothing was sufficient to prevent the debacle.

Not even the most fanatical tango enthusiast would claim that Argentina's policies were unfailingly sound and its politicians unwaveringly prudent. No country is in that position, and certainly not Argentina. Yet vulnerabilities that few analysts (if any) identified in 1996, 97 or 98, when presumably the seeds of the crisis were planted, are held today to have been self-evident. "I told you so" is easy to say after the fact.

Argentina is not the only nation to be blamed this way. Between 1997 and 1998, Thailand, South Korea, Malaysia and Indonesia went down the financial toilet. In all four countries currencies collapsed and debts had to be renegotiated. Indonesia and Thailand also suffered full-fledged banking crisis. These countries did not have Argentina's checkered financial history. None had a large fiscal deficits or large public debts. In fact, they had long been held as examples of how to do things right. All four had grown spectacularly in the previous decade, with Korea becoming a world class industrial power. Many a tome was written on the successful East Asian experiences and how to emulate them elsewhere. A 1993 World Bank report entitled *The East Asian Miracle* claimed that good macroeconomic and exchange-rate management was a key ingredient in the Asian recipe for success. Most developing countries would have given anything to be the next Korea.

Yet Korea melted down, and so did many of its Asian neighbors. In the aftermath, pundits were again quick to point fingers. Since fiscal sins were hard to detect, other alleged miss-steps had to be singled out: poorly regulated banks, too much short-term debt, government guarantees, overinvestment, quasi-carnal relations between politicians and businessmen, outright corruption –all these were singled out as self-evident causes of

[5] Fiscal figures are from Hausmann and Velasco (2002).

[6] The weaknesses were elsewhere. As a result of privatization and reductions in payroll taxes, social security revenues fell from 5.6 to 3.5 percent of GDP in the same period. Other tax revenues collapsed as the economy went into a tailspin in the late 1990s, just as country risk and the marginal interest rates paid on government debt spiked, taking the interest burden from 0.8 percent of GDP in 1993 to 4.6 percent of GDP in 2001. One can make the case that the weak fiscal policy outcomes were more of a *consequence* than a *cause* of the collapse of the economy. See Hausmann and Velasco (2002).

[7] IMF, News Brief No. 99/24, May 26, 1999

the Asian crisis. Again, the countries and their authorities were not blameless and sins had arguably been committed. But the roots of the mess were complex enough so that no one quite saw it coming. As Paul Krugman put it: "Before the crisis they [the Asian countries] were advertisements for the power of capitalist thinking; afterwards, anyone could see that they were hotbeds of crony capitalism, a far cry from the real thing."[8]

In these episodes and many others, finger-wagging has largely taken the place of analysis. Much writing on the subject has been closer to Victorian moralizing than to modern economic analysis. Some alleged *moral* failing of the victims, invariably identified after the fact, is to be blamed for the various crashes.

The problem is that *ex post* moralistic explanations may offer consolation (at least to policy gurus residing in Boston, New York or Washington) but little or no guidance on how to avoid the next crash. This essay attempts to move the debate past the simple blaming of the victims. After reviewing the evidence, we point to problems –market failures, institutional weaknesses- that are the root of crises and that cause them to recur. We close by suggesting some priorities for reform.

Classifying crises

A financial crisis almost always involves the collapse of a country's currency, which loses much of its value against the dollar. That is why economists sometimes speak of "currency crises" as the generic expression covering all kinds of meltdowns.

Exactly what else is involved in a crisis changes from country to country and also has tended to change over time. Sometimes the crisis comes with a default of the government, who finds itself unable to pay the now more expensive external debt. Other times, it is the private firms who cannot pay. In other instances, it is the banks that get into trouble, as their two major credit customers – the government and the corporations, are weakened, and the public, anticipating problems runs for the exits, precipitating a banking crisis.

Developing countries, especially in Latin America, had their share of currency collapses already in the 1950s and 1960s.[9] In those days of limited capital mobility, a country's international reserves and (very limited) loans from rich country governments were pretty much the only way to finance a trade and current account deficits. When dollars ran out (and to some countries like Chile and Argentina this happened quite frequently), the standard medicine involved a devaluation to deter imports and stimulate exports. Some budget cutting was also often part of the package. Such adjustment was painful, but the pain was usually short-lived.

By the 1970s, access to international capital markets was increasing the options. The quadrupling of oil prices in 1973 had made the Gulf States fabulously rich and unable to

[8] "I told you so," posted on the Paul Krugman website on May 3, 1998. Available at www.pkarchive.org.
[9] They had also devalued and defaulted on their debts during the Great Depression, but that is another matter.

spend their new dollar income at the rate they were earning it. The bulk of the money ended up in the major international banks. At the same time, the "oil shock" caused a serious recession in oil-consuming industrial countries. Their central banks, intent on cushioning the blow to their economies, adopted a policy of loose money. Awash in financial resources, and with the recession limiting the appetite for credit at home, the major banks went around the world looking for worthy clients with a promising future and bankable projects to invest in. They opted for Latin America.

Mexico, by then a modest oil producer with large unexploited reserves, went on a borrowing spree, in part to invest in getting the oil out of the ground, in part to invest in the other things that richer Mexicans would demand, in part to consume part of their future wealth. International banks, impressed by Mexico's new-found wealth, were eager to lend. But by 1976 Mexico appeared to have bit off more than it could chew. As prices of oil came tumbling down, the country went into crisis and had to devalue its currency. Oil prices shot up again in the late 70s, and almost exactly the same movie was replayed. Loans flowed to Mexico, which was already benefiting from the higher oil income. The second crash happened in August 1982, after a spike in US interest rates. The peso again tumbled, and this time the government added injury to injury by nationalizing all Mexican banks. Lending to all of Latin America froze, triggering the so-called Latin American Debt crisis, which lasted for the rest of the decade.

By the time the 1990s rolled around, crises of one kind or another had become frightfully common occurrences. The crises also became bigger and more complicated. Domestic banking systems often went down with the currency. Defaults on domestic as well as foreign debts became common. Costs also grew larger, with annual output contracting by 10 percent or more in a number of cases.

A list of so-called *emerging market* countries that have suffered currency or financial meltdowns (often both together) since 1980 includes Argentina (twice), Bolivia, Brazil (twice), Bulgaria, Chile, Colombia, the Czech Republic, the Dominican Republic, Ecuador, Hungary, Indonesia, Korea, Malaysia, Mexico (twice), Panama, the Philippines, Peru, Romania, Russia, Turkey, Uruguay (twice) and Venezuela (four times). Absent from this list are the many countries that have also got into trouble but are too chaotic (the former Soviet Republics) or too poor (most of sub-Saharan Africa and South Asia) to qualify as emerging markets.

Boo to the boundless borrowers

What could be behind all these crises? If you go back to the 1960s and 1970s, the answer seemed clear: living beyond your means. A current account deficit is by definition an excess of expenditure over national income. Reduce expenditure and your problems will go away.

The post-mortem on the 1980s debt crisis was not too different. Government and firms could no longer pay their debts and default. Was this not *prima facie* evidence that they had borrowed too much? Imprudent behavior by countries, then, was to blame. And this

time the admonition came with a twist: countries did not have the resources to repay their debts because they had consumed too much and invested too little. The moral failure was double: not just spending too much, but spending on the wrong items as well.

Some economists argued at the time that the picture was a bit more complex. Among them was the late Carlos Díaz-Alejandro of Yale, who pointed out that some countries like Brazil had been hit by an unpredictable double whammy: record high oil prices (Brazil is a large oil importer) and a spike in international interest rates; that some countries that crashed, like Chile, never had a fiscal deficit before the crisis hit; and that almost all had been hit by contagious fears from the Mexican default of August 1982. Díaz Alejandro's conclusion: Blaming victims is an appealing evasion of responsibility, especially when the victims are far from virtuous. But when the sins are as heterogeneous as those of the Latin American regimes of 1980, one wonders how well the exemplary mass punishment fits the alleged individual crime." [10]

But Díaz-Alejandro's position was in the minority. The general view was that the Latin countries had misbehaved and were paying for their sins. This is a view that, as a general explanation for crises, has proven remarkably enduring.

One reason for this resilience is that economists have long understood there are many reasons why governments overborrow. Political pressures coupled with myopia is the simplest among them: eager to build support and triumph at the next election, politicians will shower an unsuspecting electorate with borrowed funds. After all, the bill will only have to be paid after the next election. Having highly variable government income (linked, as in Mexico, to the export of natural resources) can worsen the situation. During commodity booms, the "voracity" of political pressure groups demanding government expenditures rises, while creditworthiness and the willingness to lend on the part of foreigners also increase. The elements are all there for a spike in loans followed by a crash. This is why some economists have called an abundant endowment of natural resources a "curse." [11][AMS1]

Matters are even more complicated if countries have weak and decentralized fiscal institutions. It is not a coincidence that Argentina and Brazil, both federal republics, have been among those nations that in the past had most trouble balancing their books. Provinces (in Argentina) or states (in Brazil) know that the benefits of greater spending accrue locally, while the costs will be partially picked up by the rest of the country through the federal government. It is the old problem of ten friends who go to a restaurant and, before ordering, agree they will split the bill in equal parts. The menu offers chicken or lobster, with the latter twice as expensive. Each friend conjectures that if he orders lobster, nine-tenths of the additional cost will be borne by the others, and therefore decides to do so. But if all think alike, they will each end up ordering lobster and paying for it in full, even though at that price they would have rather ordered chicken. One could claim that the same happened in the past to Argentina and Brazil, but with a twist: having

[10] "Latin American debt: I don't think we are in Kansas anymore." *Brookings Papers on Economic Activity*, 2, 1984.
[11] See the analysis in Lane and Tornell (1999) and Hausmann and Rigobon (2003).

paid with their credit cards, when the bill arrived at the end of the month they did not have the cash and defaulted.[12]

And governments are not the only ones that can overborrow. Private firms and banks also can, and sometimes have. One factor may be what economists term *moral hazard*: again the conjecture that someone else will pay part of the bill, but this time for different reasons. This conjecture is plausible when private firms and banks operate under explicit or implicit government guarantees. With banks, guarantees are often explicit: deposits up to a certain limit are typically insured by government. Understanding that their funds are safe (to the extent, at least, that the promise to insure them is credible), lenders and depositors have no incentive to monitor what bankers are up to. Unless they have enough of their own money at stake (i.e. their capital), bankers have an incentive to borrow too much and invest the money in projects that are too risky. Hence, the government must impose on banks through *regulation* the requirement to hold minimum levels of capital and should *supervise* that the money is actually there. This is a lesson that many emerging markets –Chile, Mexico and Indonesia among them—have learned the hard way. In the phrase of Carlos Díaz-Alejandro, countries that deregulated banking said "good bye financial repression, hello financial crash."[13]

And while according to this story locals may be eager to take on big loans, foreigners may be overeager to provide them. That is, lenders can suffer from moral hazard just as surely as borrowers. International bailouts –whether orchestrated by the IMF, the US Treasury or some other large source of dollars—play in this story the role of domestic government guarantees. Knowing that if anything goes wrong daddy IMF will step in and help, hordes of young and well dressed New York investment bankers enthusiastically knock on the door of emerging market finance ministers and corporate CFOs peddling the latest in syndicated loans and Eurobonds. Whenever US interest rates are low, all caution is thrown to the winds and lending takes off. The costs are paid later –when the lending officer and the borrowing official have moved to bigger and more lucrative jobs.

Monetary madness

There is no shortage of reasons, then, why the public or the private sector in the typical emerging market may misbehave and overborrow. And from overspending to currency crises there is only one short step, and it involves monetary policy. Fiscal deficits need financing. If no loans (whether at home or abroad) are available, printing pesos (or baht or reais) is the only way out. If debt financing is available, then the accumulated obligations will have to be repaid eventually, and at that point the government may choose to turn on the printing press. In short: a deficit today may well imply a more expansionary monetary policy, whether today or in the future.

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[12] For a theoretical account of this problem in a more complicated dynamic setting, see Velasco (1993). Alesina et al (1999) discuss the relationship between fiscal institutions and fiscal performance in Latin America. Hausmann (1998) discusses the trade-offs between alternative policy solutions.

[13] Díaz-Alejandro (1985). How to square the fact that Chile had no fiscal deficit and followed quite conservative policies with the fact that its exchange rate crashed anyway in June 1982? This is where bad bank loans come in. As banks came crashing down the Central Bank had to print pesos to prop them up, and this brought down the peso. For an explanation along these lines, see Velasco (1987).

The problem is that in a world of capital mobility, printing pesos freely and fixing the value of the peso in terms of the dollar are mutually inconsistent. If the central bank prints additional pesos that people do not want to hold, they will turn around and use those pesos to buy dollars from the central bank. If this goes on again and again, official dollar reserves will decline, until the authorities have no dollars left. At that point, sustaining a fixed exchange rate becomes impossible, and the currency comes crashing down.

This story is at the core of a famous paper by Paul Krugman that started modern theorizing on currency crisis.[14] Krugman added a twist: understanding what is going on, citizens do not wait passively until the government has run out of dollars. Fearful that a devaluation will reduce the value of their pesos, they jump into action once dollar reserves are low, trading those dollars in exchange for unwanted pesos. This speculative attack, as Krugman called it, depletes government coffers prompting the collapse of the value of the local currency.

The Krugman story had a clear implication. Currency crashes are not caused by evil speculators, but by irresponsible fiscal and monetary policies. Avoid big fiscal deficits, do not print too many pesos and you shall be fine.

The Mexican mess

That was an influential lesson. Many an adjustment plan and stabilization effort in the late 1980s and early 1990s had fiscal reform at its core. Some countries succeeded at this task better than others, but no one doubted its importance. Same thing with monetary policy. Tighter money and independent central banks became the fashion of the day. At first, the new policies seemed to pay off. In the set of countries the IMF groups as belonging to the "Western Hemisphere" (the US and Canada excluded), average inflation fell from over 500 percent in 1988 to just 35 percent in 1992.

For a brief period in the early 1990s, macro instability and crises seemed like a thing of the past. The lessons learned seemed to be the right ones. And just when countries thought it was safe to go back into the water… again came Mexico.

To realize how big a shock the 1994-95 Mexican blowup was, again a bit of history is useful. After the default of 1982, Mexico spent a few years in the financial dog house. But in the late 1980s and early 1990s a new generation of reforming technocrats came to power. Their political methods were sometimes unpalatable, but their economics –at least in the view of most international pundits—was impeccable. President Carlos Salinas de Gortari (1988-1994) and his Finance Minister Pedro Aspe became poster boys for sound economic management. They privatized, opened up and deregulated like there was no tomorrow. International markets amply rewarded the country for its virtuous behavior. Capital inflows were massive, averaging more than 6.7% of Mexican GDP in 1990-1994. Yet the assassination of a presidential candidate at home, plus higher interest rates

[14] Krugman (1979).

abroad, were enough to bring the economy to a massive crash in December 1994. "Petty crime and cruel punishment" was the phrase University of Maryland economists Guillermo Calvo and Enrique Mendoza used to describe the Mexican debacle.[15]

The Mexican crisis provoked much hand-wringing among experts, and not just because it was large and painful (output fell by 7 percent in 1995). Even more disquieting was the fact that the crash could not easily be explained by resorting to the conventional wisdom. In particular, evidence of a spending party was nowhere to be found. Public consumption has a share of GDP had fallen slightly since the Salinas Administration came to office in 1988. And after fiscal surpluses in 1992 and 1993, Mexico had posted a deficit of less than 1 percent of GDP in 1994. The result: public debt had fallen from 67 percent of GDP in 1989 to slightly more than 30 percent in 1994. Hardly the stuff of which Victorian morality plays are made.[16]

Whose moral hazard?

If Mexico's petty sins received a punishment that was cruel but not capital, it was largely because the US Treasury and the IMF put together an emergency 50 billion dollar rescue package.[17] Mexico's recession was deep but short-lived; it was able to repay the funds ahead of schedule. One might have thought that after the celebrations for the successful rescue were over, efforts in Washington and elsewhere would have focused on making sure that no country would again be left as vulnerable as Mexico had turned out to be.

But thinking among Victorian economists moved in exactly the opposite direction. The US Treasury and the IMF were charged with being not Mexico's saviors but its undertakers. Helping countries in trouble would reward irresponsible behavior and help sow the seeds of the next crisis, chimed a chorus of conservative economists. In the words of Harvard's Robert Barro: "In this case, the IMF-U.S. lending package was effectively a reward for corrupt and risky bank lending and poor macroeconomic policies."[18]

And when the next crisis did explode –this time in Asia— Victorians felt vindicated. Columbia University economist Charles Calomiris wrote: "The responses by the IMF and the U.S. government to the Mexican crisis of 1994-1995 and the recent Asian crises are examples of dangerous short-sightedness. In the wake of those crises, the Clinton Administration is promoting a new doctrine of global financial bailouts, administered

[15] Calvo and Mendoza (1996).

[16] Since no fiscal sins could be found, some had to be manufactured. In the aftermath of the crisis, in Washington and Wall Street it became fashionable to claim that lending by the state development bank, Nafinsa, constituted a hidden fiscal deficit. But this makes little economic sense. See Sachs, Tornell and Velasco (1996). Other fashionable culprits such as low savings and large current account deficits are discussed and found wanting in Birdsall, Gavin and Hausmann (1997).

[17] The United States extended up to $20 billion in short-term and medium-term loans and long-term loan guarantees. The IMF pledged $17.8 billion, a group of central banks committed $10 billion, Canada pledged $1 billion Canadian, and Latin American countries agreed to pitch in $1 billion for a total financial assistance package of approximately $50 billion

[18] "The IMF does not put out fires, it starts them," Business Week, December 7, 1998.

through IMF largesse and conditions. If the IMF and U.S. Treasury are permitted to prevail, the efficiency of global capital markets will suffer, and the incidence and severity of financial crises will grow."[19]

In a 1998 academic conference in Washington, Allan Meltzer of Carnegie Mellon University called for the abolition of the IMF.[20] For this the U.S. Congress, with an exquisite sense of irony, rewarded him with the chairmanship of a commission charged with studying ways to strengthen and reform the Fund. In a Business Week article discussing the commission's report, Robert Barro wished that Meltzer had stuck to his guns and demanded that the IMF be closed down.[21] Five years after the Mexican bailout, Victorian economists were suffering a bad case of *moral hazard fever*.

Blaming the suffering of southern countries on their own moral turpitude –and that of the financiers that lend to them—probably allows northern economists to sleep well at night. But they might turn in their beds once or twice if they noticed that there is hardly a shred of evidence for the moral hazard explanation of crises.[22]

Begin with *creditor moral hazard*. A first hint comes from the volume of capital flows. If lenders felt protected by big daddy IMF, then capital flows to emerging markets should be plentiful. But they are small –much smaller than established economic theory would predict.[23] Indeed, explaining why so little capital goes to poor countries is one of the major puzzles of contemporary economics –one that has attracted the attention of leading lights such as Nobel laureate Robert Lucas. [24]

And if the Mexican rescue had fortified the perception in Wall Street that lenders to emerging market countries would be bailed out, no matter how reckless the loans, then more capital should have flowed south after Mexico. But exactly the opposite happened. Fears from the Mexican crash extended far and wide, reaching Buenos Aires and Brasilia and even Manila, in what became known as the Tequila effect. Loans to these countries were curtailed sharply.

Mexico's bailout was not the only big one. True, Russia in August 1998 did not get one, even though many investors expected it would. But Brazil received a large loan package soon after the Russian crash, followed in 2001 by equally large packages for Argentina

[19] Calomiris (1998).
[20] Mentioned in "The Meltzer Report," by J. Bradford DeLong, at http://www.j-bradford-delong.net/, posted in May 2000.
[21] "If we can't abolish the IMF, let's at least make big changes," Business week, April 10, 2000.
[22] See for example Eichengreen and Hausmann (1999), Fischer (2000) and Calvo (2001).
[23] According to this theory, capital flows should help reduce income disparities between rich and poor. In the 1990s capital flows to Latin America averaged five percent of GDP. With a capital-output ratio of three, this means that capital flows have averaged less than two per cent of the capital stock. At present, the capital/labor ratio in the United States is some 300 per cent higher than in Latin America. At a rate of two per cent per year, convergence in per capital incomes, would take centuries, not even considering the fact that labor-force growth is faster in Latin America. See Eichengreen and Hausmann (1999).
[24] See Lucas (1990).

and Turkey. But private capital flows to emerging markets remained depressed, in spite of the apparent generosity of official lenders.

The most recent bit of evidence on the lack of connection between what the IMF and private lenders do comes from the Argentine debacle. The Fund pulled the plug on Argentina, with the encouragement of the US, in 2001. Since then it has rolled over old loans after much haggling, but not a single fresh dollar has been handed over. The Argentine government completely stopped paying its debts to foreign private investors at the end of that year. Since then it has refused to sit down to negotiate with creditors, offering only a plan that would give outstanding debts a "haircut" (that's financial jargon for non-payment) of about 75 percent. That is, Argentina is offering to repay one dollar out of four owed, and this does not include all the interest accumulated since the default. Victorian economists might have predicted that lenders, chastened by this nasty experience, would cut back on loans to other emerging markets. But again, the opposite has happened. At the time of writing (November 2004) investors are euphoric, lending the Brazils, Russias and Turkeys of the world large sums at interest rates that have seldom been so low.

So the level of observed capital flows does not sit well with the moral hazard view of crises. It is also bad news for Victorians that the composition of such flows does no better. The IMF and the US Treasury can save (and have saved) the skin of large international banks making loans to middle income countries. They can also bail out the holders of bonds and other IOUs issued by these countries: the proverbial dentist in Kansas and the pensioner in Milan. But the bailout packages do not cover so-called *direct foreign investment* (FDI): purchases of companies (or parts of companies) in Monterrey, Manila, Sao Paulo or Seoul. Investors who had made those purchases have suffered large losses in most recent crises.

The moral hazard view would predict that, in the aftermath of the bailouts, bond issues and loans should have risen, while direct foreign investment collapsed. But, guess what: again the prediction was completely at odds with reality. After the Tequila meltdown, FDI in Latin America boomed while all other capital flows collapsed.[25]

One can make a similar point regarding the roots of the Asian crisis. The expectation of bailouts (this time by Asian governments) should have caused over-investment and excessive risk-taking by entrepreneurs with access to guaranteed finance. But guarantees should have crowded out "legitimate" investment that bore the full burden of risk. Yet as Jeffrey Sachs of Columbia University and Steve Radelet of the Center for Global Development pointed out at the time, in the run up to the crisis all forms of investment in the emerging Asian economies were booming, including direct foreign purchases of equity and real estate –and these were investments that were *not* protected by any form of implicit guarantee.[26] This observation led Paul Krugman, an early advocate of the moral

[25] See Eichengreen and Hausmann (1999). They also show that the share of international lending that goes to local corporations instead of governments or banks (the two entities most likely to be bailed out) is larger in Latin America than in developed countries.
[26] Radelet and Sachs (1998).

hazard explanation of the Asian crisis, to conclude later that such a view had "come to seem inadequate to the task of explaining the severity of the event."[27]

What about *debtor moral hazard*? Recall this is the view that –regardless of what creditors thought— borrowing country governments deliberately behaved recklessly expecting to be saved by the IMF or the U.S.. But wait… Did we say saved? For Mexico, the presumably lucky recipient of a large bailout, being *saved* meant a decline in gross domestic product of 7 percent in one year (1995); the banking system crashed and the costs of the bank cleanup are still being felt today; outgoing president Salinas de Gortari was widely reviled, had to go into exile and lost any chance of landing the next job he coveted: chairman of the World Trade Organization. Can one begin to conceive that Salinas –an economist with a Harvard degree— deliberately chose to pay these humongous costs in exchange for getting a few more dollars and a bit more growth in 1993-94?

And Mexico is not alone. Annual output losses reached 14 percent for Chile in 1982, almost 6 percent for Korea, 8 percent for Thailand and nearly 14 percent for Indonesia in 1998, 11 percent for Argentina in 2002. In all these countries banks crashed and governments had to leave office (or, in the case of Chile, only managed to remain in power by bringing the troops out on the streets). Intentional outcomes? Wild miscalculations? The mind baffles. In his presidential address to the Latin American and Caribbean Economic Association, Guillermo Calvo put the matter best: moral hazard "would imply that either emerging market policymakers *deliberately* brought their economies into painful maelstrom (in exchange, perhaps, for a brief mirage of affluence) or that they exhibited a fantastic lack of judgment, bordering on the insane. However, since there is no scientific evidence that those characteristics are the monopoly of emerging market policymakers … the moral hazard view must … be classified as an intellectually appealing but unsubstantiated conjecture."

Contagious crises

And the crises keep coming. After decades of emerging market blowups you'd think the armies of analysts working for private financial firms and for the Washington multilateral lenders could begin to anticipate them. Especially if the crises are caused by bad domestic policies, which the analysts' trained eyes could easily spot. But –surprise, surprise!—many of the crashes have come as a surprise to markets. Take the collapse in Mexico in December 1994 and in Thailand in July 1997. But the debt of neither country was downgraded by credit rating agency Standard and Poor's in the previous 12 months. The credit rating of Russia was actually upgraded in June 1998, two months before a wholesale default on its public debt that sent markets throughout the world into a tailspin. Other indicators tell a similar story. The interest rate on dangerous debt should rise (relative to international rates) as investors try to dump it and escape trouble. But these so-called *spreads* on Mexican and Russian debt were remarkably stable in the run-up to

[27] Krugman (1999).

their respective blowups. The same was true of spreads on the debt of most East Asian nations before the onset of the Asian crisis in mid-1997.

But don't put all the blame on those hard-working analysts. Emerging market crises are truly hard to predict. In one influential article, Nobel Prize winner Joseph Stiglitz argued that none of the existing statistical models designed to forecast crises could have predicted the Asian meltdown.[28] Harvard's Kenneth Rogoff agrees: "I have yet to see any framework that can convincingly name the time or place of the next big crisis."[29]

Why aren't even the world's top economists up to the task? One reason is contagion: crashes can spread like wildfire from country to country, catching even the most alert analyst unaware. Contagion was evident after the flotation of the Thai baht in 1997: it quickly triggered financial turmoil across East Asia. Indonesia, Korea, Malaysia, and the Philippines were hit the hardest—by December 1997, their currencies had depreciated (on average) by about 75 percent. And when Russia defaulted on its sovereign bonds on August 18, 1998, the nasty effects were felt not only in the neighborhood (Eastern Europe and the former Soviet republics), but also in Brazil, Mexico, many other emerging markets –and even in well-behaved Hong-Kong and some rich country markets.

Writing academic papers on contagion has become an industry. Professors disagree on a number of technical issues. How do we define contagion? How is it properly measured? How does it spread? (it could be trade links, the actions of a common creditor o fear pure and simple). But they hardly disagree about one thing: it exists, and pretty much all over the place. Kristin Forbes and Roberto Rigobón of MIT write: "The last two decades have shown that if any country in the world sneezes, Latin America catches pneumonia."[30]

The most potent force behind contagion seems to be what Alan Greenspan once termed "irrational exuberance." As anyone who reads the financial papers knows, there have been repeated periods of euphoric capital flows to the middle income countries: the mid-1970s and the first half of the 1990s stand out, and we may be living through another episode right now. These episodes tend to begin abruptly (often when the US reduces its own interest rates and investors begin to look for more profitable opportunities abroad) and end even more abruptly, when an unforeseen shock causes investors to head for the exits. The late MIT economist Rudi Dornbusch labeled these massive and sudden reversals of capital flows *sudden stops*, after the saying, "it is not speed that kills you, but the sudden stop."[31]

The mother of all sudden stops took place after the Russian crisis of August 1998. Capital flows to the seven largest countries in Latin America[32] went from over 5 percent of GDP the quarter of the shock to less than 2 percent a year later. The *spread* charged the

[28] Stiglitz and Furman (1998).
[29] Newsweek International Edition, February 16, 2004.
[30] Forbes and Rigobón (2001).
[31] Dornbusch, Goldfajn and Valdés (1995). See also Calvo, G.A., and C. Reinhart (2000) .
[32] Argentina, Brazil, Chile, Colombia, Mexico, Peru and Venezuela.

average emerging market for loans went from slightly above 4 percent to nearly 15 percent.[33] It took nearly five years (until 2003) before capital returned to these countries.

Contagion seems to be most widespread and intense precisely when it is part of a *sudden stop*. Carmen Reinhart of the University of Maryland, Graciela Kaminsky of George Washington and Carlos Vegh of UCLA have coined the label "fast and furious contagion" to describe what happens when investors across the board panic and try to pull their money out.[34]

The existence of contagion contradicts the central point of Victorian economics: that only those that have sinned should be punished. Take Chile, the paragon of successful market-friendly reforms and prudent economic management. In the rush for the exit that took place after the Russian default, faraway Chile was not spared. Net capital inflows had been over 6 billion dollars in 1997; they fell to 2 billion in 1998 and to almost zero in 1999. Lacking financing, Chile was forced to slash imports in order to reduce its external deficit. Output growth went from 7 percent in 1997 to almost minus 1 percent in 1999. Was Chile paying for its sins? Hardly. It was universally recognized to have low debt, strong banks and sound money.[35]

Uruguay is another case in point. A tiny nation sandwiched between regional giants Argentina and Brazil, it has long provided the calm contrast to the rocky finances of its neighbors. In fact, Uruguay is the place where Argentine and Brazilian savers typically keep their money, away from the instability of their own countries. Its banks are thought to be safe and well monitored. Yet this Uruguayan strength proved to be the cause of its undoing. After their own peso collapsed and their bank deposits were frozen in late 2001, Argentines rushed to withdraw the funds they had stashed away in Uruguay. The run caused several Uruguayan banks to crash. The currency lost much of its value, making it hard for local corporations and the government to repay their dollar debts. External debt had to be rescheduled with emergency aid from the IMF. The final result: once-stable Uruguay went into its deepest recession ever, with output shrinking nearly 11 percent in 2002.[36]

[33] Those *spreads* are computed over and above the interest rate rich country governments pay –typically, the rate on U.S. Treasury bills.

[34] Edwards (2003). For a slightly older but useful survey on the subject, see Edwards (2000).

[35] For an analysis of what happened to Chile at the time, plus an illuminating contrast with Australia, see Ricardo J. Caballero Kevin Cowan Jonathan Kearns, (2003).

[36] As in other crises, after the collapse it has become common to claim that Uruguay is a high debt country that had it coming all along. The figure given to buttress this claim is that post crisis public debt reached a very high 105% of GDP. But notice that is the debt burden conditional on a crash and a massive real devaluation having taken place. Before the crisis (at the end of 2001) gross public debt was a more reasonable 50% of GDP, and net public debt 35% of GDP. Notice that before Argentina went down Uruguayan risk spreads were below 400 bps, which suggests that if the crisis was long in the making, the markets did not see it.

Market failure versus moral failure

So if it isn't moral failure, what is it? The length of the list of countries that have suffered crises hints at the answer. Included are not just leave-it-for-tomorrow Latins but also hard-working Asians and stern Eastern Europeans; the relatively poor (Ecuador, the Philippines) and the relatively rich (Korea, Uruguay); and not just financially wayward nations like Brazil and Russia, but also model reformers like Chile and the Czech Republic. A saying popular among development economists in the late 1990s went like this: if only one car has ever crashed on a country road, the fault probably was the driver's; but if fifty cars a month crash on that road, then something else is at work.

What these countries have in common is that they are exposed not to moral failure, but to market failure. This does not mean, of course, that stupid policies in borrowing countries do not sometimes make matters worse. Nor does it mean that stronger institutions in emerging markets would not ameliorate the shortcomings of current international arrangements. What it does mean is that there are certain transactions governments and corporations in emerging markets cannot engage in. In the jargon of economists, there are missing markets. Systems for dealing with risk that are routine in rich countries are not available. So if you are the government of a middle income country, your room for maneuver is extremely limited. Even if you behave well you may end up in crisis.

Think for a minute of what modern financial arrangements do for the average middle class citizen of an industrial country. If her car is stolen it doesn't much matter, because the property is likely to be insured. If she falls ill, chances are she will have medical insurance –whether provided by the government or by private markets. If she loses her job, unemployment insurance (again private or public) is likely to cushion the blow. Where markets do not exist, government will often fill the gap. If the citizen wants to get a university degree and banks will not lend to her against the promise of her future income, the government will guarantee the loan. Similar arrangements exist for small businesses, farmers and others.

And households or firms are not the only ones that can get insurance. Municipalities can offset unexpected revenue shortages by borrowing in a large and stable municipal bond market. States in the US, provinces in Canada and regions and countries in the European Union can count on emergency transfers and subsidies in case of localized recessions, wild fluctuations in prices (think of oil and Texas in the 1980s) and natural disasters. And if all else fails, rich states and countries can borrow. And do borrow, to an extent that would put most emerging market countries to shame. In early 2004 the debt of the US government was roughly 7 trillion dollars, of which 4.5 trillion was held by the public. This means that the debt held by the public accounts for a little below 45 percent of national income. For Japan the figure was approximately 120 percent. To put these figures in context, Argentina's debt when the crisis erupted was below 40 percent. The public debts of emerging nations like Chile, Mexico or Korea are way below that.

Imagine what it is like to live without most of the kinds of insurance routinely available in Europe, North America or Japan. Well, that's what life is precisely like for emerging

country citizens and governments. If the price of the country's main export falls, if bad weather spoils the annual crop, or if world interest rates go through the roof, little or no insurance is available –either for producers, consumers or the government. Cushioning the adjustment means relying on debt, but debt brings its own host of problems –and it is not always possible to borrow in a crunch. Typically a sharp fall in consumption and production are the only way to "adjust" to the shock.

Oh, baby, baby, it's a wild world

The textbook account of optimal international adjustment for an economy goes like this. If you receive a permanent adverse shock, cut your consumption and adjust fully and right away; if the shock expected to be transitory, then adjust partially and wait for the shock to go away. In the meantime, borrow the difference. In practice this advice is not all that useful, since policymakers have no way of knowing whether shocks are to be short or long-lasting (is today's high oil price the result of an expected war that will soon be over or of a new period of instability in the Middle East that could last years, if not decades?).

That is not the only difficulty. Even more problematic is the assumption that the rest of the world will finance the "optimal" adjustment path, no matter how long the shock lasts, and no matter how large are debts that pile up. If governments act quickly and shocks are not very persistent, the assumption is reasonable. Imagine a country growing at 3 percent a year, with a long-term trade balance deficit of 2 percentage points of GDP and an initial debt/GDP ratio of 25 percent. If an adverse shock lasts 2 years and causes the annual trade deficit to be larger by 1.5 percentage points of GDP than it would have been, the final debt-GDP ratio is less than 38 percent --something international lenders can probably live with.

But down on the ground (particularly on Latin American ground) the situation is often trickier, for four reasons:

Persistent shocks: suppose now that the same country suffers a shock that lasts not for 2 years but 5, again inducing an additional trade balance deficit of 1.5 percent of GDP. At 7 percent real interest rates (not an unreasonable number of emerging markets), after 5 years the debt-GDP ratio is nearly 53 percent –enough to cause even the most torpid of lenders to perk up.

Interest rates that rise: That is not the end of the story. As debts pile up, interest rates charged the economy tend to rise, compounding the snowball effect. Bigger debts may mean higher risks, and lenders will demand to be compensated for bearing that risk. Suppose that the gross interest rate grows at 2 percent a year, so that after 10 years the interest rate charged the small open economy is 13.3 percent –up from 7 percent initially. In that scenario, after the 2-year shock debt would amount to almost 40 percent of GDP, while after the 5-year shock it would reach a worrisome 68 percent of GDP. Clearly,

small differences in the behavior of the country risk premium can make a huge difference over time –as if often occurs in emerging markets.

Exchange rates that move in the wrong direction: Emerging markets differ from developed economies in one crucial aspect: they cannot borrow abroad and denominate the debt in their own currency –which, if there is little or no domestic inflation, is like borrowing in units of your own output. This makes a crucial difference when a country is affected by a shock. When an adverse shock hits, the real exchange rate typically depreciates, meaning local output is now worth less relative to the output of the rest of the world.[37] For the typical industrial country that borrows abroad in its own currency, international adjustment is doubly facilitated by the depreciation. The fall in the relative price of locally produced goods stimulates net exports and, ceteris paribus, reduces the current account. And, at the same time, the depreciation reduces the value of outstanding external debt, also helping close the external gap.

In an emerging market that can only borrow internationally in dollars –or, what is approximately the same, in units of foreign output– the change in relative prices that follows an adverse shock helps increase net exports, but at the same time makes outstanding debt more expensive to serve. That is, the two factors work at cross-purposes, making international adjustment all the more difficult to achieve. Of course, if the change in relative prices is temporary, so will the "extra" weight of the debt it prompts. But that is exactly the point: will lenders be willing to finance it in an uncertain environment, one in which how temporary the depreciation is can never be asserted with confidence[38]?

Consider an elaboration on our earlier example. Assume foreign debt is in fact denominated in dollars. Suppose, moreover, that the shock induces a 20 percent real depreciation –nothing big by the standards of emerging market finance. Then, after the 2-year shock the debt-GDP ratio will be 46 percent, and after the 5-year shock it will be 77 percent. Lenders may well begin to curtail access to capital before the debt ratio gets that high, even if they know there is a chance down the line the depreciation will unwind and the debt ratio will fall accordingly.

Recession: the fourth complication comes via the behavior of national output, which so far we have taken as given. The optimal reaction to an adverse shock must imply a reduction in domestic absorption (even if, as in the cases we are considering, the adjustment is only partial). This typically means a fall in output relative to trend. If the shock induces a real devaluation, the change in relative prices may make things even worse in the short run (even if the devaluation is expansionary in the long run, as textbooks will suggest): weaker corporate and bank balance sheets may curtail investment, or redistribution from wage earners to profit earners may reduce consumption.

[37] This can happen even under fixed nominal exchange rates since deflation can do the job, albeit more slowly and painfully.

[38] Hausmann, Panizza and Rigobon (2004) show that real exchange rate depreciations are much more persistent in developing countries than in industrial countries.

The upshot is simple: if partial adjustment induces a recession, again however temporary, debt-GDP ratios will shoot up even further. To return to the example, suppose now that the economy grows at 1 percent per year (instead of the previous 3 percent) while the shock is in place. This means that after 2 years the debt-GDP ratio will be 47 percent, and after 5 years it will be 84 percent. Again, skepticism about lenders' willingness to tolerate such high debt levels is in order.

In short, it does not take much for a country (or a government) to pile up big debts in response to what may seem, at least at first, like run-of-the-mill shocks. This can happen even if the country adjusts partially as the textbook suggests, but the shocks turn out to be deeper or longer than initially anticipated. As debts mount, lenders begin to worry whether they will be repaid. The next step is predictable: a cutoff in lending. When that happens, the economic adjustment that until then had been merely difficult becomes chaotic. Lack of financing exacerbates the recession and the depreciation. The risk to lenders rises even more and they all run for the exits. The country finds itself in the middle of a financial crisis.

Sovereign trouble

This account suggests that there are several features of international financial markets that make adjustment for emerging market countries particularly onerous. The first is imperfect access to capital markets: interest rates rise quickly as countries borrow, and a ceiling on total debt is rapidly reached. Of course, such limitations affect all borrowers, big and small, rich and poor. But like Orwell's animals, not all borrowers are equal: some are more equal than others. It doesn't take much for lenders to Brazil or Thailand to become jittery. The same cannot be said of Japan: even though the Japanese government has been piling up debts at an astonishing rate for over a decade, financial markets remain unconcerned. Ditto for the US: George W. Bush's record deficits have been coupled with some of the lowest interest rates charged the U.S. Treasury, ever.

Why is access to capital by emerging market countries so tenuous? It is useful to start by focusing on problems of willingness to pay when the enforcement of financial contacts is limited. Loans are not self-enforcing contracts. After receiving a loan, only coercion or the promise of future loans makes debtors want to fulfill their obligations. In order to compensate for the risk, higher charges are made. But higher interest rates further increase repayment problems by eroding the borrower's ability and willingness to repay in full and by worsening risk through adverse selection in the pool of borrowers and moral hazard in the choice of projects.[39]

In order to address willingness-to-pay problems, loans are often secured by collateral, and courts adjudicate problems that arise during the life of the contract. When nonpayment occurs or is possible, bankruptcy procedures are set in motion. These allow ability-to-pay problems to be separated from willingness-to-pay problems. They also provide a mechanism to secure the cooperation of the different creditors, to remove management if

[39]Greenwald, Stiglitz and Weiss, (1984).

creditors find it necessary, and to transfer the ownership of assets to creditors.[3] The absence of an adequate bankruptcy law and court system can have deleterious effects on the financial system. It makes coercion less credible, worsening the willingness-to-pay problem. It also increases the cost of crises because it precludes concerted action to provide additional financing needed for the company's survival.

In cross-border finance, the willingness-to-pay problem is severely aggravated by the involvement of a sovereign government. Since sovereigns do not need to abide by the rulings of any foreign court, the problem may be serious and difficult to resolve. Sovereign risk may explain why cross-border lending is so small. In the standard model sovereigns will pay so long as it is not in their interest not to do so, given the "punishment" they may receive for nonpayment.[40] However, the incentive not to pay goes up with the volume of debt owed. This theory, originally developed for public debt, can be extended to apply to private sector borrowing under the "protection" of the sovereign, which may suspend convertibility, nationalize assets, or otherwise interfere in the payment process if such action is perceived as increasing national welfare.[41] As a result, sovereign risk augments overall risk beyond the traditional commercial risk, and therefore, in the absence of financial enhancements, represents a floor for private risk.

Sovereign risk will cause markets to impose a credit ceiling on countries so as to keep the volume of aggregate debt below the level that would create incentives for non-repayment. The lighter the "punishment" the world can impose on the country, the lower the credit ceiling will be. Economies that are more integrated into the world are more easily "punished" and hence should get a higher credit ceiling.

Faced with these problems, the standard advice given emerging markets runs like this: "Open up to trade even more. Fix your institutions. Develop a track record as a good credit. Then hope for the best." This is sound and sensible advice. But it isn't very useful.

Begin with opening up. The argument claims that openness to trade and to finance are complements: do more of one and you will get to do more of the other. The problem is that even a lot of openness will not buy you much in terms of financial stability. In 1993 Mexico signed up to NAFTA, dramatically lowered its trade barriers, and committed itself to all kinds of market-friendly policies forever; a year later, Mexico was sinking in its biggest financial crisis, ever. The east Asian Tigers are some of the world's trading powerhouses; they benefit tremendously from exports, and therefore should have had the most to fear from having trade and trade credit curtailed in the event of a default; yet it was those same East Asian miracle nations that suddenly got cut off from credit in 1997, triggering a crisis of Gargantuan proportions. The counter-examples abound. Hong-Kong and Chile are some of the most open economies of the planet; they are at the top of indices pretending to measure "economic freedom"; yet they too suffered contagion and capital outflows in the last decade.

[40] Bulow and Rogoff, (1989).
[41] Fernández-Arias and Lombardo, (1998).

In 1998 Chile suffered a large decrease in the price of its exports. But rather than seeing capital inflows buffer its export shock, Chile suffered a sudden stop, forcing it to cut its imports by fully 22 percent (nearly 6 per cent of GDP) between 1997 and 1999. This entailed a collapse in GDP growth from 6.8 percent in 1997 to -0.8 percent in 1999. These are large swings by the standards of the advanced-industrial economies.

The alleged link between institutions, creditworthiness and access to capital is also tenuous. Obviously the legal frameworks and relatively advanced rule of law of Chile and Hong-Kong buy them a better reception on Wall Street than lawless Somalia and the Congo can get. More precisely, better institutions endow these countries with lower country risk and more access to capital *on average*. When times are good, well-dressed investment bankers flock to these nations offering every conceivable bond deal under the sky. But it is far from clear that they can enjoy unrestricted access to capital when they most need it –that is, when things turn sour. Our earlier discussion of collateral sheds some light on why this is so. Collateral is the value of the output and the capital these countries hold. But that value goes down precisely in bad times –when a recession hits, the prices of exports collapse, when technological change renders some domestically produced products obsolete, or all of the above together—and so does the capacity to borrow. In the jargon of economists, access to capital is highly *pro-cyclical*, and this magnifies the economic fluctuations even the relatively advanced emerging market economies have to endure.[42]

Greenbacks, yes. Pesos, no

The instability of these economies is magnified by another "missing market": that for loans in their own currencies. The emerging nations can borrow in dollars or euros or yen, but they cannot typically get loans abroad in their own pesos or liras or baht. This problem is nowadays much talked about, but in terms that are not always accessible to the non-specialist. Yet the problem at bottom is quite simple.

Imagine a company that makes raincoats, which sell heavily when it rains and not at all when it is sunny. During bad weather the price of raincoats rises, and so do the profits of the company. To finance its ongoing operations, the company borrows from a local bank. The best thing for this company would be to write a contract which, in the jargon of economists, indexes loan payments to the price of raincoats: that way the company has to make large payments when its product is expensive and its profits fat, and vice versa. Its ability to pay would be high and default highly unlikely.

But now imagine that the bank instead chooses to link the loan payments to the price of swimming trunks, which are in high demand and expensive when it is sunny and do not

[42] There is another objection to the emphasis on institutions. Telling a country to improve its institutions overnight is like telling a five-foot-five man to become six-feet tall: it is easier said than done. Having feeble institutions is close to the essence of what being underdeveloped means. If Burkina Faso had the institutions of Sweden, it would be developed like Sweden. Clearly, that is a job citizens of Burkina Faso have had difficulty carrying out.

sell at all when it is wet and dreary. Then the raincoat company would have to dish out large sums precisely when its profits are low or perhaps even negative (on clear days). It doesn't take a rocket scientist (or a raincoat designer) to realize that the probability of prompt and regular repayment would go down dramatically. As with other issues, it is not a moral but a practical one: under this alternative arrangement the company is being asked to pay the most when it can least afford it. Even the most morally upright raincoat manufacturer is likely to end up defaulting.

This is exactly the position emerging markets find themselves in. They make raincoats but are asked to repay in swimming trunks. Take the average Latin American nation: it makes goods that are priced mostly in pesos but it is forced to borrow almost exclusively in dollars. This would not be a problem except for the pesky reality that the peso is likely to lose value against the dollar precisely in those moments when the Latin economy suffers adverse shocks and goes into recession. It therefore finds itself having to make large debt payments at times when not only is output unusually low, but the price of that output in dollars is low as well. Again, it doesn't take a genius (or a Ph.D. economist) to see that such a nation will be especially default-prone.

The problem was evident in the numerical example we provided above. A nation suffering a shock could avoid accumulating a lot of debt relative to its GDP as long as the local currency did not lose value. But if the shock caused a 20 percent real depreciation, then after 2 years the debt-GDP ratio went from 25 to 46 percent and after the 5 years to 77 percent –and that was without allowing for a recession. With that kind of debt, the lender is likely to stop lending and the borrower is likely to stop paying. And notice that 20 percent is almost peanuts where devaluations are concerned. As several studies have shown[43], the real exchange rates in developing countries are on average 2.5 times more volatile than in industrial countries. And these are not just short-lived disturbances. If you look at 5-year moving averages (in order to smooth out temporary shocks), this variable moved by about 60 percent in developing countries over the last 20 years.

Compare now an industrial country that borrows in local currency with a developing country that borrows in dollars[44]. The volatility of income in industrial countries has an average of about 2.3 percent per year, while that of developing countries is about 4.5 percent (about twice as large). But the capacity to pay dollar debts will depend on how unstable is its income measured in dollars, and that will depend on the real exchange rate. It turns out that the volatility of dollar GDP in developing countries averages some 13.5 percent. Hence, dollar debts and higher volatility make the average developing country's capacity to pay 5 times riskier than the typical industrial country.

And that is not all. As many economists have pointed out, dollar debts and collateral values are likely to feed back on each other, with particularly nasty consequences.[45]

[43] Inter-American Development Bank (1995), Hausmann and Gavin (1996), Hausmann, Panizza and Rigobon (2004).
[44] See Eichengreen, Hausmann and Panizza (2004).
[45] See Krugman (1999), Aghion, Bachetta and Banerjee (2000), Céspedes, Chang and Velasco (2004), Velasco (2001).

Recall that collateral is what allows you to guarantee a debt will be repaid. You are as good as your collateral, the conventional wisdom in financial circles has it. In an emerging market economy, that collateral consists of its plant and equipment and, to a limited extent, the value of current and future profits. Even for an exporting firm, the value of that collateral is likely to rise and fall with the domestic currency. What that means is simple: at times of economic stress, when the currency is weak, the dollar value of the collateral falls; that reduces the ability to borrow, which in turn lowers domestic demand and makes the economic situation worse; there may even be second and third round effects, as that worsening causes the currency to depreciate even further, and so on. This is yet another mechanism through which the instability of emerging market economies is exacerbated.

The problem also affects government finances. If public debts are in dollars –as they mostly are—they are also affected by the revaluation-devaluation cycle. Take the case of Argentina yet one more time. In an influential study, Guillermo Calvo and Alejandro Izquierdo of the IADB and Ernesto Talvi of Ceres in Uruguay analyzed the country's debt situation under alternative scenarios for the exchange rate.[46] At one peso for one dollar (the pre-crisis price), the debts of the Argentine government seemed manageable – and so seemed to think the market, which until early 2000 was rewarding Argentina with the same country risk as Brazil. But at three pesos for one dollar (roughly the price today), the debts are clearly too large, and will have to be written down.

Why are emerging markets stuck with this nasty predicament? A Victorian economist would argue that the limitation to borrow in dollars or euros is another case of moral failure –in economists' jargon, time inconsistency and sovereign risk. If a capital importing country could obtain loans in its own currency it would be able to improve its net worth by letting the currency depreciate or by creating inflation. Understanding this, lenders only lend in the world's major currencies.

This sounds plausible, but it is far from the whole story. The example of the raincoat firm shows why. If it could get loans linked to the price of raincoats it would be tempted to cheat, claim the Victorians[47]. But notice what this would entail: the company would have to manipulate and lower the price of raincoats in good (wet) times in order to get away with paying less. But it would be crazy to do this, since the total value of raincoat production is larger (unless the company is completely broke) than the value of debt payments; by artificially lowering prices, the company would lose more on sales than it would gain on reduced debt payments. The same holds true for countries. To cut the value of peso debt they would have to depreciate its currency in real terms, making itself poorer and rendering all imported goods more expensive. It is a lose-lose proposition that no Third World leader, however maniacal, would want to try at home.

The Victorian remedy for the no-peso-loans disease is the same as for other diseases: fix your institutions and make yourself into a serious nation. Again, this is sound advice, but

[46] Calvo, Izquierdo and Talvi (2001).

[47] A practical way of indexing the debt to the price of "raincoats" in the real world is to denominate the loans in pesos but index it to the local inflation rate.

not particularly useful. Institutional and policy reforms may be necessary for a country to be able to borrow abroad in its own currency. But the evidence does not suggest that they are sufficient: too many countries with strong policies and institutions also suffer from original sin. And if the problem was fear of inflation, we should observe inflation-indexed local-currency debts or contracts in the currencies of a variety of well-behaved countries with independent central banks. But that is not what we see. Instead, we observe that 98.5 percent of the debt of emerging markets is denominated in 6 major industrial-country currencies.

Poster boy Chile is a counter-example one more time. Everybody agrees it is a country with strong institutions and reasonable policies. In terms of rule of law, the International Country Risk Guide (ICRG) gave Chile 5 of 6 possible points in 2001 --compared to a Latin American average of 2.9 and a world average of 3.8. Chile has also done a good job at managing the risks associated with foreign borrowing, using capital account regulation, prudential supervision, transparency requirements for banks and firms, and flexible exchange rates to encourage prudent management of foreign currency exposures.

One thing that these strengthened policies and institutions have not done, however, is to enable Chile to borrow abroad in its own currency. Essentially all foreign debt is in dollars, and with nasty consequences. In response to the 1998 shock, a country able to borrow abroad in its own currency would have eased monetary and fiscal policies, loosened the exchange rate, and financed its growing external deficit by borrowing abroad in order to smooth consumption and stabilize production. This is what Australia did, for example, when hit by the same global shock. Yet Chile, concerned that a large depreciation would bankrupt indebted local banks and corporations, jacked up interest rates to defend the peso. Unsurprisingly, that only deepened the recession.[48]

It is striking that Chile, despite the strength of its institutions, has been unable to escape the problem. This is a specific example of a general point. A paper by one of us, Barry Eichengreen of Berkeley and Ugo Panizza of the IADB constructed measures of developing countries' ability to borrow abroad in their own currency. It then asked whether that performance could be explained (statistically) by standard indicators of countries' institutional quality.[49] The answer is as clear a No as these kinds of studies yield. Improving the standard indicators of institutional quality appears to be of little use –at least in enabling these nations to get loans in their own currency.

All dressed up with too many places too go

When the European Monetary System collapsed in 1992 and 1993, and currencies as venerable as the Pound Sterling, the French Franc and the Swedish Crown came crashing down, many an economist shouted "I told you so" and blamed irresponsible policies for

[48] We are not claiming that this action was the wrong thing to do. Given the circumstances, it may have been quite sensible. But the example highlights the extremely unappealing choices even well behaved emerging markets face.

[49] Barry Eichengreen, Ricardo Hausmann and Ugo Panizza (2004).

the crisis. But before the accusers could feel too good about their self-righteous finger-wagging, a funny thing happened: several of the collapsed currencies began to rise of their own accord. Soon they were back almost where they stood before the crash. And to the surprise of many a finger-wagger, they mostly stayed there.

This raised an obvious question: if feeble policies had caused the crisis to begin with, and those policies had not changed radically, how come their ill effects had vanished? One hard-to-swallow answer stared researchers in the face: perhaps policies had not been so feeble to begin with and, in the jargon of economists, the devaluations had been unrelated to the "fundamentals" of the economies involved. This view stood against what received wisdom taught, and many eminent scholars dismissed it out of hand as nothing but wishful thinking. But the evidence began to mount. So did the theoretical arguments, marshaled most clearly by Berkeley professor Maurice Obstfeld.

Obstfeld's story went like this. Imagine that French unemployment rises with franc interest rates, and those interest rates rise when financial markets expect a devaluation of the French franc. The French government, made up of politicians who are after all human, dislikes unemployment, and there is only so much pain it is willing to endure before changing policies. Now see what happens if for some extraneous reason speculators come to expect a devaluation: franc interest rates will soar and unemployment will rise. Past a certain point the government will throw in the towel and devalue, thus confirming the initial fears of speculators and triggering a crisis. But notice what might have occurred if speculators had not feared to begin with: interest rates and unemployment would have stayed put, the government would have had no reason to change the value of the franc, and a crisis would not have come to pass. Obstfeld's conclusion: "These processes are circular: thus their timing is arbitrary and can be brought into play by seemingly minor events."[50] In Europe those events were political: Denmark's rejection of the Maastricht Treaty and France's *petit oui* on the same issue.

It soon became clear that the panic-driven type of crisis that had affected the rich countries of Europe could also easily occur in the poorer countries of Latin America, Eastern Europe, and Asia. In fact, such a crisis arguably *had* happened already in the early 1980s, when Argentina's invasion of the Falklands and Mexico's moratorium sent investors running for the exits. New loans had been suddenly cut off to all Latin American nations, including relatively well behaved countries such as Chile, Colombia and Uruguay. Unsurprisingly, those nations had trouble repaying old loans. Soon the region was mired in crisis.

The logic of how self-fulfilling pessimism can cause crashes in emerging markets runs like this. Imagine there are many investors considering lending additional money to a country. If all lend capital is plentiful, output grows and debt (both old and new) gets repaid. But if no money is forthcoming, things go sour and a default takes place. Now look at the situation of an individual lender: if he expects all other lenders to lend, then the country will do well and it is in his interest to offer some funds himself; but if he expects the other lenders to be reticent, for whatever reason, then his prudent course of

[50] Obstfeld (1984).

action is not to lend. In the second scenario the country will crash and default. But notice: the crisis could have been averted if only investors had optimistic expectations![51]

If this all sounds a bit abstract, recall Mexico's 1994-1995 collapse. By the account of most economists, the country's reforms had put it on much sounder footing. But Mexico still had one crucial vulnerability: 29 billion of short-term dollar debt –so called *Tesobonos* issued by the Mexican Treasury. Add to the mix politics that remained messy. In January of 1994 the Zapatista rebellion began, and in March of the same year the leading presidential candidate was shot dead. Mexico, which was seen as a country just South of the Rio Grande, suddenly looked more aptly described as a country North of Guatemala. At the end of the year jittery investors –scared by rumors of a devaluation— did not roll-over billions in Tesobonos as they became due. Unable to come up with the cash and under a great deal of financial and political pressure, the Mexican government did exactly what the investors had feared: it allowed the peso to depreciate.

The crash was huge and much finger-pointing followed. Yet a pesky question lingered: were Mexico's fundamentals so bad that the crisis was unavoidable, or was it simply a case of self-fulfilling pessimistic expectations? Both of us, writing with separate co-authors[52] took the second view. So did Tim Kehoe of the University of Minnesota and Andrew Atkeson also of UCLA. We all pointed to Mexico's small fiscal deficits and moderate public debt to suggest public finances were not an incorrigible mess, and therefore the crash was avoidable.[53] [54]

In all fairness, when it came to Mexico ours was the minority view. But thanks to the Asian crisis of 1997-98 it was soon to become the majority view. Finding fiscal fault with Korea or Malaysia proved a hard task for even the most determined Victorians. Nor could they claim that Asian monetary policies were irresponsibly loose, as perhaps had been the case in Mexico.[55] There was also the uncomfortable fact that the Asian flu spread so quickly around the continent, affecting even the market-friendly, fiscally sound and hitherto unblemished nations of Hong-Kong, Taiwan and Singapore. Evidence of contagion seemed hard to deny, and contagion could spread precisely because nations were vulnerable to self-fulfilling pessimism. The Asian economies experienced a capital outflow of US$ 34 billion in the second half of 1997, equivalent to a negative shock of 3.6 percent of GDP. Jeffrey Sachs and Steve Radelet argued it was a case of old-

[51] This point was first made by Jeff Sachs (1982). See also Obstfeld (1996) and Sachs, Tornell and Velasco (1996).

[52] Andrés Velasco with Jeffrey Sachs of Columbia and Aaron Tornell of UCLA, Ricardo Hausmann with Michael Gavin, now at UBS.

[53] See Sachs, J., A. Tornell and A. Velasco, (1996a) Sachs, J., A. Tornell and A. Velasco (1996b). Also Birdsall, Gavin and Hausmann (1996) in Burki and Naim.
Sachs Tornell and Velasco (1996) and Atkeson and Kehoe (1996).

[54] Theory (see Velasco 1996) shows that not all economies are vulnerable to self-fulfilling panics. Vulnerability requires that fundamentals be "bad enough." The real question therefore, is: how bad do fundamentals have to get for an economy to be left exposed to arbitrary fluctuations in beliefs? Since relevant models tend to be highly simplified and abstract, it is not easy to quantify this "vulnerability" threshold" reliably. But the experience of nations like Chile and Hong-Kong, suggests that one can suffer contagion and self-fulfilling pessimism in spite of strong fundamentals.

[55] See Chang and Velasco (2000).

fashioned financial panic. So did both of us writing with different co-authors, (Roberto Chang of Rutgers University and Eduardo Fernández-Arias from the IADB).[56] Paul Krugman, initially a skeptic, eventually came round to the same view:[57] "the Asian crisis has settled some disputes… It decisively resolves the argument between 'fundamentalist' and 'self-fulfilling' crisis stories. (I was wrong; Maury Obstfeld was right.)"[58]

In Asia and elsewhere, the preponderance of dollar debts was very much at the root of this vulnerability to financial panic. Take the owner of a Bangkok shopping mall, whose revenues are in Thai baht but his debt to Citibank and others is in greenbacks. If banks keep lending, Bankgok shoppers keep buying, the baht is strong and revenues from the mall (when measured in dollars) are high; bankers therefore congratulate themselves on their wisdom to keep lending. But if the banks panic, the baht depreciates, the dollar value of mall revenues collapses and… By now you know the rest of the story. And the end result: the country goes down the toilet while the lenders who got out in time again congratulate themselves for their market savvy.

What is to be done?

Unmanageable dollar debts; sovereign risk; contagion; self-fulfilling panics; recurring crises. The list of diseases and the difficulty of finding a cure easily turns any observer into a skeptic. Hence the common Wall Street joke: an emerging market is one from which one cannot emerge in an emergency.

In this state of affairs, one conclusion is tempting. These countries should not borrow, at least not very much, and should cast a weary eye on international capital inflows. This policy prescription is increasingly popular –and, strangely, it is advocated by left and right alike.

For the left, minimizing capital flows –at least if they are private and non-concessional— comes naturally. After all, financial integration and globalization are favorite bogey men of left-leaning pundits. Some advocate mild Chilean-style taxes on short-term capital inflows. Others want to go further and imitate China: discourage anything but foreign direct investment and keep the currency inconvertible. Details differ, but the basic thrust of the argument is simple: world capital markets are volatile and unreliable. At best, they are fair weather friends, and such friends should be kept at arm's length. As Dani Rodrik of Harvard, the most thoughtful advocate of this position, has put it: "capital-account convertibility … will leave economic policy in the typical "emerging market" hostage to the whims and fancies of two dozen or so thirty-something country analysts in London, Frankfurt, and New York."[59] [AMS2]

[56] Sachs and Radelet (1998), Chang and Velasco (1999), Fernandez-Arias and Hausmann (1999).
[57] This was especially significant because Paul Krugman is the author of every economist's favorite model to explain how bad policies cause currency crashes. See Krugman (1979).
[58] Krugman (1999).
[59] Rodrik (199x).

Others have reluctantly come to a similar view. In a series of influential recent papers, Carmen Reinhart of the University of Maryland, Kenneth Rogoff of Harvard, and Miguel Savastano of the IMF have argued that some countries are both "debt intolerant" (whenever they borrow more than a small amount they default) and "addicted to dollars" (they can't get enough of the stuff). Debt is to these countries –which include Argentina, Brazil, Mexico, the Philippines, Turkey and Venezuela—what booze is to the alcoholic. Policy prescription: simply keep them away from the bottle. Reinhart et al write: "…history has shown that for many of these countries, to borrow is to brook default. As the track record of serial default highlights, many of these booms ended in tears." [60]

Chilean poet Nicanor Parra wrote that "the left and the right united shall never be defeated." On the issue of capital movements, it is not hard to see why they are united, and why their position is appealing. In this nasty and brutish world it is sensible to tell countries to follow cautious policies (especially on the fiscal front), borrow little and perhaps even use Chilean-style capital controls. Indeed, on occasion we have dispensed this advice ourselves.

But a moment's thought reveals that this is emergency room treatment at best. The longer-term cures for the disease must lie elsewhere. Anyone telling countries to stay away from loans must face up to two not-very-minor difficulties: not borrowing is costly and it may not be politically sustainable for long.

The textbooks are clear on why emerging markets should love foreign loans. Capital-poor countries (and this includes all emerging markets by definition) import capital so as not to have to wait a generation to acquire the machines and technology they need to grow. They also borrow to smooth-out fluctuations in external demand and in their terms of trade, protecting domestic consumption and investment from the vagaries of the world economy. Experts disagree on the precise costs of foregoing debt, but those costs are nowhere near zero in terms of less growth and more instability. And what is costly for the private sector in these countries is even costlier for the government. Borrowing (whether at home or abroad) is the only way it can avoid cutting social programs and public investment every time a crop fails or the price of a commodity goes crashing down. When the dilemma is viewed this way, even ardent enemies of globalization may think twice before advocating financial autarchy.

Making that case is also very hard for Victorian conservatives. For decades now they have trumpeted the benefits of liberalization and integration into the world economy. Doing so was supposed to bring a clear benefit: developing countries would be able to borrow, invest and catch up with the rich nations. Victorians now find themselves saying: you've done the liberalization of capital markets, but now you (especially not *you*, government) should not take advantage of it. You have paid the political cost of opening up, but now you cannot reap the benefits.

There is also the issue of how feasible it is to carry out the advice of staying away from foreign capital. How to keep nations from borrowing? One can surely tell a government

[60] Reinhart, Rogoff and Savastano (2003).

not to do so. And if that government is willing to live with the resulting instability in expenditure, and is capable of pulling the parliament and public opinion along, less borrowing and lower debt will result. This is what Victorians have in mind. But turn now to the next task: how to keep the private sector from borrowing next time dollar interest rates are low and the boys from Wall Street come calling to peddle their loans? The only answer is capital controls of one sort or another. But many economists dislike that interventionist policy, and sensible advocates of the Chilean approach recognize that after a while such taxes are likely to be evaded and become largely ineffective.[61]

The real question, then, is how to overcome debt-intolerance. Economists like Reinhart, Rogoff and Savastano recognize this is the issue, but they are largely silent on *how* to achieve the needed change.[62] Their categories for classifying debtors seem largely fixed. Argentina defaulted already in the 19th century, then in the 20th, and now is doing it in the 21st. But what about Argentina renders it incapable of repaying? After all, countries that have defaulted repeatedly in the past do mend their ways. French kings were notorious for beheading creditors to avoid repayment. US states were serial defaulters in the 19th century. Spain defaulted 7 times in the 19th century, Portugal 5 and Greece 4. But no one frets abut these countries' creditworthiness nowadays. What changed? Whatever it was, it surely is not that the average Spaniard or Greek became more virtuous or morally upstanding over the last century[63].

Today's flavor-of-the-month prescription –improving institutions—may completely miss the point. Suppose that what is behind the history of default is a highly volatile capacity to pay, due to the inability to borrow in local currency coupled with unstable output and real exchange rates. Such countries are bound to default more frequently and break rules and institutions in the process. Improving institutions in this context can again only go so far since the best institutions come tumbling down if sufficient pressure is applied. And this is not true only for darker-skinned peoples. Whatever their faults, the Maastricht Treaty and the Stability pact seemed like strong arrangements –at least by emerging country standards. But they turned out to be politically costly to follow. Today the fiscal rules of those agreements are openly violated by the very countries that not so long wrote them –rich and highly developed nations like France and Germany.

A similar story can be told regarding Argentina's financial institutions. The law guaranteeing central bank independence was supposed to be a model for developing countries. The convertibility of pesos into dollars and the fixed one-to-one exchange rate was also guaranteed by a law that many experts admired. Yet once pressures became large enough, central bank independence turned into a fiction and the system collapsed.

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[61] On the Chilean debate, see Edwards, Valdés and De Gregorio (2001) and Forbes (2003).

[62] They write: "The real policy challenge for these countries is to address a chronic long term problem—their own debt intolerance—not to take remedial measures that allow them to gain the favor of international capital markets for a few of months, or even years." (2003).

[63] Furthermore, as Hausmann (2004) shows, these countries no longer default, but they borrow proportionally more, not less than emerging market countries. Debt tolerance means that you can drink a lot without bad consequences, not that you drink in moderation.

Put more positively: the job of building better institutions, if it is to bear fruit, must be complemented with the job of reducing financial strain on emerging market nations. There are things these countries can do to help themselves, and we have discussed some in this paper. But it may be that the problem is not one of moral or institutional turpitude that can be addressed simply through more domestic prudence. It may well be that the hand these countries are dealt is unusually difficult by industrial country standards and that the lack of confidence in their institutions emerges from the understanding by all participants that given the likely strains on them, institutions are bound to crumble. For example, if the country is vulnerable to large shocks and if inadequate international insurance and financial markets are inadequate, then too much risk will be left at home. An agenda that better shares the risks with the rest of the world would make these countries more stable and their institutions more credible.

What actions may move the world in this direction? Developing international markets in emerging market currencies comes high on the list. By borrowing in such terms, borrowers share their fortune with their creditors. How to achieve this? It may involve rethinking regulatory and tax constraints that keep rich country lenders from assuming poor country exchange rate risk and prodding multilaterals to get these markets going by lending and borrowing in the currencies of their client countries. One of us, working with Barry Eichengreen from Berkeley and Roberto Rigobón from MIT, has made proposals in this direction[64].

Other ideas involve facilitating coordination among lenders at times of panic, which can be achieved by turning the IMF into a true international lender of last resort. In short: crises in emerging markets will keep happening until the focus is put more squarely on the missing or poorly functioning international market and not just in domestic moral failings.

[64] Eichengreen and Hausmann (2004 and Hausmann and Rigobón (2003).

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