

Research on emerging market countries represents a rapidly growing share of the agenda of the NBER program in International Finance and Macroeconomics. While members of the program continue to work on many other topics as well, this survey of the last four years will concentrate on work relevant to emerging markets. This research included a big project directed by Martin Feldstein and me, on Financial Crises in Emerging Markets. This project in turn included eight meetings on crises in specific countries -- the Mexican crisis of 1994, the East Asian crises during 1997-98, through Argentina's crash in 2001 -- along with many other conferences.<sup>1</sup> It produced eight books.<sup>2</sup>

### ***Institutions***

Economists' interest in those countries that have become integrated into world financial markets over the last few decades can be seen as part of a larger increase in attention paid to developing countries in general. The field of development economics has recently risen from the lower part of economists' "pecking order" of prestige, toward a more glamorous location on the totem pole. Why some poor countries have been able to join the ranks of the rich, and others have stayed behind, is one of the most important questions of our time. Research on the deepest determinants of growth now emphasizes three big influences: openness to trade, tropical geography, and, especially, the quality of a country's institutions, such as protection of property rights, efficacy of the legal system, and absence of corruption.<sup>3</sup> Financial markets institutions, such as protection of shareholder rights receive particular emphasis.<sup>4</sup> Shang-Jin Wei and co-authors document that corruption in a country makes foreign investors skittish.<sup>5</sup>

Research by members of the IFM program tends most often to deal specifically with macroeconomic questions such as the choice of monetary and exchange rate policy, or a country's decision whether to open up its financial markets to international capital flows. But Acemoglu, Johnson, Robinson, and Thaicharoen argue that macroeconomic policies in developing countries are often the manifestation of deeper institutions and interest groups.<sup>6</sup> For example, an IMF requirement that a country devalue in order to raise the domestic price of export commodities may simply be offset by some other policy to restore the preceding political equilibrium. Some of the more interesting findings discussed in this review concern the *interaction* of countries' institutions with these macroeconomic decisions.

### ***Exchange rate regimes***

One major question addressed by IFM members is a country's choice of currency regime: a fixed exchange rate, a floating exchange rate, or a regime with an intermediate degree of flexibility (such as a target zone). The debate is an old one, but it acquired some new aspects in the late 1990s. One new development was the decision of some countries to abandon their independent currency for a device to fix its value firmly, such

as a currency board or official dollarization. Sebastian Edwards and Igal Magendzo find that dollarization and currency unions have delivered lower inflation, as promised, but with higher income volatility.<sup>7</sup>

One of the arguments for a firm fix was that it would force domestic institutions to evolve in a favorable way, and would help prevent the chronic monetization of fiscal deficits that had undone so many previous attempts at macroeconomic stabilization.<sup>8</sup> Argentina's currency board, for example, appeared to work very well during most of the decade. It was believed that this "convertibility plan" had encouraged reforms that by the late 1990s had turned Argentina's banking system into one of the best among all emerging markets.<sup>9</sup> But when Argentina's crisis crested in 2001, neither the supposedly deep pockets of foreign parents that had been allowed local bank subsidiaries<sup>10</sup>, nor any of the country's other innovative reforms, were able to protect its banking system. This outcome cannot but have had a dampening effect on the earlier enthusiasm for currency boards.<sup>11</sup>

Another new argument for monetary union has been influential empirical findings by Andy Rose and co-authors that the boost to bilateral trade has been significant, and larger (as large as a threefold increase) than had been previously assumed.<sup>12</sup> While many others have advanced critiques of the Rose research, the basic finding has withstood perturbations and replications remarkably well, even though the estimated magnitudes are sometimes smaller.<sup>13</sup> Some developing countries seeking enhanced regional integration may now try to follow Europe's lead.<sup>14</sup>

There are plenty of arguments in favor of floating currencies as well, and most of the victims of the last eight years of crises in emerging markets have responded by increasing exchange rate flexibility. One advantage that is beginning to receive renewed emphasis is that floaters are partially insulated against fluctuations in the world market for their exports.<sup>15</sup>

A relatively new realization is that attempts to categorize countries' choice of regime (into fixed, floating, and intermediate) in practice differ from the official categorization.<sup>16</sup> Countries that say they are floating, for example, often in reality are not.<sup>17</sup> Indeed neat categorization may not be possible at all. That Argentina was in the end forced to abandon its currency board, in 2001, also dramatizes the lesson that the choice of exchange rate regime is not as permanent or deep as had previously been thought.<sup>18</sup> The choice of exchange rate regime is more likely endogenous with respect to institutions, rather than the other way around.<sup>19</sup> The "corners hypothesis" -- that countries are, or should be, moving away the intermediate regimes, in favor of either the hard peg corner or the floating corner -- became fashionable in the late 1990s; but it is now another possible casualty of the realization that no regime choice is in reality permanent, and that investors know that.<sup>20</sup>

If a country decides against setting a target for the exchange rate, that still leaves the question of what alternative target or targets will guide monetary policy instead, as Lars Svensson has emphasized. Setting a target for the money supply is no longer in fashion, for good reason.<sup>21</sup> One popular alternative is inflation targeting.<sup>22</sup> Another is the Taylor rule.<sup>23</sup> An open area for research is whether and how such rules can be adapted for the special circumstances facing emerging market countries.<sup>24</sup>

## *Opening up financial markets*

Another major question that a country must decide is whether to liberalize financially, particularly the extent to which it wants to remove controls on international capital movements. It is part of the larger debate over globalization. Do the advantages of open financial markets outweigh the disadvantages?<sup>25</sup> There are many potential gains from international trade in financial assets, by analogy with the gains from international trade in goods. Peter Henry and Anusha Chari, for example, have shown that when countries open up their stock markets the cost of capital facing domestic firms falls (stock prices rise), with a positive effect on their investment and on economic growth.<sup>26</sup> Controls designed to moderate capital inflows may thus raise the cost of capital and slow growth. They may particularly impact small firms.<sup>27</sup>

Nevertheless, financial liberalization has often been implicated in the crises experienced by emerging markets over the last ten years. Certainly a country that does not borrow from abroad in the first place cannot have an international debt crisis. Perhaps, then, there is a role for capital controls. Dani Rodrik finds evidence that Malaysia's decision to impose controls on outflows in 1998 helped it weather the Asia crisis.<sup>28</sup> But Simon Johnson and Todd Mitton find that Malaysian capital controls mainly worked to provide a screen behind which politically favored firms could be supported.<sup>29</sup> Research has more often been sympathetic to a specific kind of capital control: Chile-style penalties on short-term capital *inflows*, under the theory that they tilt the composition in favor of more stable long-term inflows.<sup>30</sup>

A blanket indictment (or vindication) of international capital flows would be too simplistic. Some of the most interesting research examines *under what circumstances* financial liberalization is more likely to be good or bad for economic performance. One claim is that financial opening lowers volatility<sup>31</sup> and raises growth<sup>32</sup> only for rich countries, and is more likely to lead to market crashes in lower-income countries.<sup>33</sup> A second claim is that capital account liberalization raises growth only in the absence of macroeconomic imbalances, such as overly expansionary monetary and fiscal policy.<sup>34</sup> A third important finding is that institutions such as shareholder protection and accounting standards determine whether liberalization leads to development of the financial sector,<sup>35</sup> and in turn to long run growth.<sup>36</sup> A related finding is that corruption tilts the composition of capital inflows toward the form of banking flows (and away from Foreign Direct Investment), and toward dollar denomination (vs. denomination in domestic currency), both of which have been associated with crises.<sup>37</sup> The implication is that financial liberalization can help if institutions are strong and other fundamentals are favorable, but can hurt if they are not.

All these findings are consistent with the conventional lesson regarding the sequencing of reforms: that countries will do better in the development process if they postpone opening of the capital account until after other institutional reforms.<sup>38</sup> Of course, the observable positive correlation between the opening of capital markets and growth could be attributable to reverse causation – rich countries liberalize as a result of having developed, not as a cause – but Edison et al conclude from their own tests that this is not the case.<sup>39</sup>

## *Origins of currency crises*

What are the sources of crises in emerging markets, and why have they so often led to sharp recessions? Levels of debt that would not necessarily seem high by the standards of rich countries get some “debt-intolerant” developing countries into repeated trouble.<sup>40</sup> When a poor country runs into difficulty, the international financial community demands that it cut its deficits, while rich countries tend to elicit the opposite response. What explains the key difference between global investors’ treatment of developing countries, versus developed countries?<sup>41</sup> The traditional explanation is macroeconomic fundamentals.<sup>42</sup> But this does not seem to fit for some of the recent crises, inspiring models with multiple equilibria (a country may get shifted to a crisis equilibrium even if its leaders do not initiate unsound economic policies).<sup>43</sup> There are also models that feature herding<sup>44</sup>, bubbles<sup>45</sup>, and a particular role for mutual funds<sup>46</sup> and other large investors in speculative attacks.<sup>47</sup>

One prime culprit is the inability of developing countries to borrow internationally in terms of their own currency, termed by Eichengreen and Hausmann the problem of “original sin.”<sup>48</sup> Firms or banks that incur liabilities in dollars or other foreign currencies while their revenues are primarily in domestic currency face the problem of currency mismatch; this in turn can lead to insolvency and contraction when the domestic currency devalues sharply.<sup>49</sup> These balance sheet effects are at the center of many analyses.<sup>50</sup>

Banks, in particular, have been implicated in most crises, usually due to the acute problem of moral hazard created by the prospect of government bailouts.<sup>51</sup> Foreign Direct Investment is a less risky source of capital inflow than loans.<sup>52</sup> The same is true of equity flows.<sup>53</sup>

IFM researchers have devoted a lot of attention to the observed correlation of financial volatility across emerging markets, including what is often called contagion of crises.<sup>54</sup> Jessica Tjornhom Donohue and Kenneth Froot note the high persistence of portfolio flows of institutional investors across emerging markets and individual investment funds, and decompose the source of this persistence into a cross-country, cross-fund component, which might arise from contagion, versus other components.<sup>55</sup> Graciela Kaminsky and Carmen Reinhart find that when contagion spreads across continents, it passes through major financial centers along the way.<sup>56</sup> But Kristin Forbes finds that contagion spreads along the lines of trade linkages.<sup>57</sup>

## *Response to crises*

Once a country is hit by an abrupt cut-off in foreign willingness to lend – a “sudden stop”<sup>58</sup> - it hardly matters what was the cause. The urgent question becomes the appropriate policy response. Often the loss in foreign financing must be taken as given. Thus there must be a reduction of the same magnitude in the previous trade deficit. How can the adjustment be accomplished? Is a sharp increase in interest rates [to reduce overall spending, and increase the attractiveness of much-needed capital

inflow] to be preferred to a sharp devaluation [to switch expenditure away from the consumption of internationally traded goods, and to switch production toward them]?<sup>59</sup> Many victims of crises in the late 1990s had to experience both. Regardless what mix of policies has been chosen, recessions have been severe.<sup>60</sup> Further questions of interest include: Is the output loss smaller if the country goes to the International Monetary Fund?<sup>61</sup> What are the impacts of IMF and World Bank programs on income distribution?<sup>62</sup> What are “best practices” for domestic financial restructuring?<sup>63</sup>

Even though many currency crises over the last ten years have often led to output losses larger than expected, one encouraging pattern has been that inflation has usually responded to devaluations much *less* than expected.<sup>64</sup> The traditional view had been that countries, especially small countries, experience rapid pass-through of exchange rate changes into import prices, and thence to the general price level.<sup>65</sup> But this assumption appears to have become less valid. Burstein, Eichenbaum and Rebelo find that the price indices are kept down by substitution away from imports toward cheaper local substitutes.<sup>66</sup> The pass-through debate has recently focused on a comparison of the alternatives of producers pricing in their own currency vs. in local currency, in the context of the new open economy macroeconomic models, where all decisions are based on optimizing behavior.<sup>67</sup> Charles Engel has questioned the validity of the assumption of producer-currency pricing, and in turn questioned the validity of the role of the exchange rate as an effective mechanism of trade balance adjustment.<sup>68</sup> But Maurice Obstfeld argues that even if consumers face prices that are unchanged in local currency, devaluations spur adjustment through other channels, such as firms’ decision to switch their source of imported inputs.<sup>69</sup>

The question whether to adjust to a current account deficit by devaluing or by other means takes the necessity of adjustment as given, as a consequence of the sudden stop in foreign financing. A final major set of questions for inquiry elects not to take as given the magnitude of the loss in foreign financing. Alternatives include default, debt-reduction, forgiveness, rescue packages by the IMF, and arm-twisting of private investors to continue their exposure (called Private Sector Involvement). Here policy decisions made by the U.S. government<sup>70</sup> and other members of the G-7<sup>71</sup> are central. On the one hand, the IMF moderates the severity of crises by acting as an international sort of lender of last resort, even though its resources are proportionately far smaller than the traditional domestic lender of last resort.<sup>72</sup> On the other hand, IMF bailouts are often criticized for making the problems worse in the long run, due to moral hazard.<sup>73</sup> IMF plans to institute a Sovereign Debt Restructuring Mechanism -- a sort of international bankruptcy court -- have recently succumbed to strong resistance.<sup>74</sup> Instead, some prominent emerging market countries have recently added “Collective Action Clauses” to their bond contracts, in part inspired by Barry Eichengreen’s arguments that this is a realistic way to accomplish private sector involvement without the worst of the moral hazard problems of IMF bailouts.<sup>75</sup>

Debt-reduction<sup>76</sup> seemed to help many developing countries put the 1980s debt crisis behind them (the Brady Plan of 1989). Can it do the same today?<sup>77</sup> A recurrent puzzle is why more countries don’t default on their debts.<sup>78</sup> Andy Rose finds that bilateral debt reschedulings lead to losses of trade along corresponding bilateral lines estimated at 8% a year for 15 years, from which he infers that lost trade is the motivation debtors have to avoid such defaults.<sup>79</sup> Michael Dooley has provocatively suggested that

deep recessions, which most observers consider an undesirable effect of crises, are there for a reason: the system's way of assuring investors that debtors have an incentive to avoid default.<sup>80</sup> Despite the usual view that the global system has a long-run interest in punishing defaults, recent developments in Iraq have led Michael Kremer to propose an exception: if it can be impartially ascertained what ruler (like Saddam Hussein) constitutes an oppressive tyrant, then the international community could encourage successor regimes to default on the debt that their countries inherit; such a system would work to reduce the credit access of future tyrants.<sup>81</sup>

### Endnotes

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<sup>1</sup> For reports on these meetings and the rest of the project, go to <http://www.nber.org/crisis/>.

<sup>2</sup> See <http://www.nber.org/crisis/#books>.

<sup>3</sup> Important examples include Daron Acemoglu, Simon Johnson, James Robinson, "The Colonial Origins of Comparative Development: An Empirical Investigation" NBER Working Paper No. 7771, June 2000; Dani Rodrik, Arvind Subramanian, Francesco Trebbi, "Institutions Rule: The Primacy of Institutions over Geography and Integration in Economic Development" NBER WP 9305 November 2002; and Jeffrey Sachs "Institutions Don't Rule: Direct Effects of Geography on Per Capita Income," NBER WP no. 9490, Feb. 2003.

<sup>4</sup> Simon Johnson, John McMillan, Christopher Woodruff, "Property Rights and Finance," NBER Working Paper No. 8852, March 2002. Examples for equity markets include Rafael La Porta, Florencio Lopez-de-Silanes, Andrei Shleifer, "What Works in Securities Markets?" NBER Working Paper No. 9882, August 2003; Andrei Shleifer and Daniel Wolfenson, "Investor Protection and Equity Markets," NBER Working Paper No. 7974, October 2000; and Rafael La Porta, Florencio Lopez-de-Silanes, Andrei Shleifer, Robert Vishny, "[Investor Protection: Origins, Consequences, and Reform](#)," NBER WP 7428, Dec 1999.

<sup>5</sup> R. Gaston Gelos and Shang-Jin Wei, "Transparency and International Investor Behavior," NBER WP 9260 Oct 2002 find that investors respond negatively to corruption. Julian Du and Shang-Jin Wei, "Does Insider Trading Raise Market Volatility?" NBER Working Paper No. 9541, March 2003, find that countries with more insider trading have more variable stock markets.

<sup>6</sup> Daron Acemoglu, Simon Johnson, James Robinson, Yunyong Thaicharoen, "Institutional Causes, Macroeconomic Symptoms: Volatility, Crises and Growth," NBER WP 9124, August 2002; published in *JME*, 2002.

<sup>7</sup> "Strict Dollarization and Economic Performance: An Empirical Investigation" NBER w9820 July 2003; and "A Currency of One's Own? An Empirical Investigation of Dollarization and Independent Currency Unions." NBER WP 9514, February 2003.

<sup>8</sup> Enrique Mendoza, "Why Should Emerging Economies Give up National Currencies: A Case for 'Institutions Substitution'," NBER Working Paper No. 8950, May 2002.

<sup>9</sup> Lee Alston and Andres Gallo, "Evolution and Revolution in the Argentine Banking System under Convertibility: The Roles of Crises and Path Dependence," NBER Working Paper No. 8008, November 2000; Charles Calomiris and Andrew Powell, "Can Emerging Market Bank Regulators Establish Credible Discipline? The Case of Argentina, 1992-1999," NBER Working Paper No. 7715, May 2000.

<sup>10</sup> Linda Goldberg, B. Gerard Dages, and Daniel Kinney, "Foreign and Domestic Bank Participation in Emerging Markets: Lessons from Mexico and Argentina," NBER Working Paper No. 7714, May 2000.

<sup>11</sup> Edwards, "The Great Exchange Rate Debate After Argentina," NBER WP 9257, October 2002

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<sup>12</sup> The already-classic paper is “One Money, One Market: “Estimating the Effects of Common Currency on Trade,” NBER Working Paper No. 7432, December 1999; published in *Economic Policy* (2000). Follow-ups include Reuven Glick and Andrew Rose, “Does a Currency Union Affect Trade?: The Time Series Evidence,” NBER WP 8396, Jul 2001; and Jeffrey Frankel and Andrew Rose “Estimating the Effects of Currency Unions on Trade and Output,” NBER WP 7857, Aug 2000, published in *QJE*, 2002.

<sup>13</sup> E.g., Silvana Tenreyro and Robert J. Barro, “Economic Effects of Currency Unions,” NBER 9435 Jan 2003.

<sup>14</sup> Barry Eichengreen and Alan Taylor argue that the true lesson of EMU is that monetary unions are adopted for political reasons, not economic: “The Monetary Consequences of a Free Trade Area of the Americas” NBER WP 9666, May 2003.

<sup>15</sup> Among peggers, terms of trade shocks are amplified and long run growth is reduced, as compared to flexible-rate countries, according to Sebastian Edwards and Eduardo Levy Yeyati, “Flexible Exchange Rates as Shock Absorbers,” NBER WP Series 9867, July 2003.

<sup>16</sup> E.g., Carmen Reinhart and Kenneth Rogoff “The Modern History of Exchange Rate Arrangements: A Reinterpretation,” NBER Working Paper No. 8963, May 2002.

<sup>17</sup> Guillermo Calvo and Carmen M. Reinhart, “Fear of Floating,” NBER Working Paper No. 7993, November 2000; published in *Quarterly Journal of Economics*, 2002.

<sup>18</sup> I review all these issues in Frankel, “Experience of and Lessons from Exchange Rate Regimes in Emerging Economies,” NBER WP no. 10032, October 2003.

<sup>19</sup> Alberto Alesina and Alexander Wagner “Choosing (and Reneging on) Exchange Rate Regimes,” NBER WP 9809, Jun 2003; Guillermo Calvo and Frederic Mishkin, “The Mirage of Exchange Rate Regimes for Emerging Market Countries,” NBER WP 9808, June 2003.

<sup>20</sup> E.g., Carmen Reinhart and Vincent Reinhart, “Twin Fallacies about Exchange Rate Policy in Emerging Markets,” NBER WP 9670, May 2003.

<sup>21</sup> Andrew Atkeson and Patrick Kehoe argue that money targeting does not allow the public to monitor central bank behavior as well as does exchange rate targeting: “The Advantage of Transparent Instruments of Monetary Policy,” NBER Working Paper No. 8681, December 2001.

<sup>22</sup> E.g., Lars Svensson, “Monetary Policy and Real Stabilization,” NBER Working Paper No. 9486, February 2003; and Svensson “Inflation Targeting: Should it be Modeled as an Instrument Rule or as a Target Rule?” NBER WP 8925, May 2002.

<sup>23</sup> E.g., Richard Clarida, Jordi Gali, Mark Gertler, “Optimal Monetary Policy in Closed vs. Open Economies: An Integrated Approach,” NBER Working Paper No. 8604, November 2001; and “The Empirics of Monetary Policy Rules in Open Economies,” NBER Working Paper No. 8603, November 2001.

<sup>24</sup> The answer of David Laxton and Paolo Pesenti is that central banks in emerging market countries (such as Czechoslovakia) need to move the interest rate more strongly in response to movements in forecasted inflation than a rich country would: “Monetary Rules for Small, Open, Emerging Economies,” NBER Working Paper No. 9568, in March 2003. [Caballero and Krishnamurthy in NBER WP 9599 see a need for such central banks to set state-contingent inflation targets.]

<sup>25</sup> Barry Eichengreen and David Leblang, “Capital Account Liberalization and Growth: Was Mr. Mahatir Right?” NBER WP 9427, Jan 2003.

<sup>26</sup> “Capital Account Liberalization: Allocative Efficiency or Animal Spirits,” NBER WP 8908, April 2002; “Risk Sharing and Asset Prices: Evidence from a Natural Experiment,” June 2002 NBER WP 8988; and “Capital Account Liberalization, the Cost of Capital, and Economic Growth,” NBER WP 9488, February 2003. Pierre-Olivier Gourinchas and Olivier Jeanne, “The Elusive Gains from International Financial Integration,” NBER WP 9684, May 2003, estimate the gains from financial integration at about 1% [of consumption], which they consider small.

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- <sup>27</sup> Kristin Forbes finds that Chile's famous controls on capital inflows raised the cost of capital for small firms in particular: "One Cost of the Chilean Capital Controls: Increased Financial Constraints for Smaller Firms," NBER WP 9777, June 2003. For [Carmen Reinhart](#) and Todd Smith, the main problem is being able to remove the controls at the right time: "Temporary Controls on Capital Inflows," NBER Working Paper No. 8422, August 2001. On the other hand Ross Levine and Sergio Schmukler, looking at 55 countries, find that when some firms are able to raise equity capital abroad, the remaining firms *lose* liquidity: "Migration, Spillovers and Diversion: Impact of Internationalization on Stock Market Liquidity," NBER WP 9614, 2003.
- <sup>28</sup> Rodrik and Ethan Kaplan, "Did the Malaysian Capital Controls Work?" NBER WP8142 February 2001.
- <sup>29</sup> "Cronyism and Capital Controls: Evidence from Malaysia," NBER Working Paper No. 8521, October 2001.
- <sup>30</sup> Jose De Gregorio, Sebastian Edwards, Rodrigo Valdes, "Controls on Capital Inflows: Do they Work?" NBER Working Paper No. 7645, April 2000.
- <sup>31</sup> Javier Gomez Biscarri, Sebastian Edwards, Fernando Perez de Gracia, "Stock market Cycles, Liberalization, and Volatility," NBER WP 9817 July 2003.
- <sup>32</sup> Michael Klein and Giovanni Olivei, "Capital Account Liberalization, Financial Development, and Economic Growth," NBER Working Paper No. 7384, October 1999; Sebastian Edwards, "Capital Mobility and Economic Performance: Are Emerging Economies Different?" NBER Working Paper No. 8076, January 2001.
- <sup>33</sup> Philippe Martin and Helene Rey, "Financial Globalization and Emerging Markets: With or Without Crash?" NBER Working Paper No. 9288, October 2002.
- <sup>34</sup> Carlos Arteta, Barry Eichengreen and Charles Wyplosz, "When Does Capital Account Liberalization Help More than It Hurts?" NBER WP 8414 Aug 2001. They reject the claim that it is the level of development that matters.
- <sup>35</sup> Menzie Chinn and Hiro Ito, "Capital Account Liberalization, Institutions, and Financial Development: Cross-Country Evidence," NBER Working Paper No. 8967, May 2002.
- <sup>36</sup> Michael Klein, "Capital Account Openness and the Variety of Growth Experience" NBER WP 9500, Feb 2003.
- <sup>37</sup> Shang-Jin Wei and Yi Wu, "Negative Alchemy: Corruption, Composition of Capital Flows, and Currency Crises," NBER WP 8187, Mar 2001; published in *Managing Currency Crises in Emerging Markets*, edited by S. Edwards and J. Frankel (University of Chicago Press: Chicago), 2002.
- <sup>38</sup> Graciela Kaminsky and Sergio Schmukler, "Short-run Pain, Long-run Gain: The Effects of Financial Liberalization," NBER WP 9787, Jun 2003. Capital controls become harder to enforce if the trade account has already been liberalized: Joshua Aizenman, "On the Hidden Links Between Financial and Trade Openness," NBER WP no. 9906, August.
- <sup>39</sup> Hali Edison, Michael Klein, Luca Ricci, and Torsten Sloek, "Capital Account Liberalization and Economic Performance: Survey and Synthesis," NBER WP 9100, August 2002.
- <sup>40</sup> The phrase is from Carmen Reinhart, Ken Rogoff, and Miguel Savastano, "Debt Intolerance," NBER Working Paper No. 9908, August 2003; they attribute the problem to a country's history of default and inflation.
- <sup>41</sup> For example, Roberto Rigobon finds that Mexico's susceptibility to international contagion diminished sharply, after it was upgraded by Moody's in 2000: "The Curse of Non Investment Grade Countries," NBER Working Paper No. 8636, December 2001. [[Ricardo Caballero and Arvind Krishnamurthy](#), "A Dual Liquidity Model for Emerging Markets" [NBER Working Paper 8758](#) model what they see as the key difference for emerging markets.]
- <sup>42</sup> E.g., research documents that fiscal policy continues to be pro-cyclical in Latin America: Ernesto Talvi and Carlos Vegh, "Tax Base Variability and Procyclical Fiscal Policy," NBER

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Working Paper No. 7499, January 2000. [Also Frederic Mishkin, “Financial Policies and the Prevention of Financial Crises in Emerging Market Countries,” NBER Working Paper No. 8087, January 2001.]

<sup>43</sup> Assaf Razin and Efraim Sadka, “A Brazilian Type Debt Crisis: Simple Analytics,” NBER WP 9606, Apr 2003.

<sup>44</sup> V.V. Chari and Patrick Kehoe, “Financial Crises as Herds: Overturning the Critiques,” NBER Working Paper No. 9658, April 2003.

<sup>45</sup> Jaume Ventura, “Bubbles and Capital Flows,” NBER WP 9304, Nov 2002.

<sup>46</sup> Graciela Kaminsky, Richard Lyons, and Sergio Schmukler, “Managers, Investors, and Crises: Mutual Fund Strategies in Emerging Markets,” NBER Working Paper No. 7855, August 2000.

<sup>47</sup> Giancarlo Corsetti, Paolo Pesenti, Nouriel Roubini, “The Role of Large Players in Currency Crises,” NBER Working Paper No. 8303, May 2001; published in Edwards and Frankel, *op.cit.*.

<sup>48</sup> Barry Eichengreen and Ricardo Hausmann, “Exchange Rates and Financial Fragility,” NBER WP 7418, Nov 1999.

<sup>49</sup> Martin Schneider and Aaron Tornell, “Balance Sheet Effects, Bailout Guarantees and Financial Crises,” NBER Working Paper No. 8060, December 2000. Luis Felipe Céspedes, Roberto Chang, and Andrés Velasco, “Balance Sheets and Exchange Rate Policy,” NBER Working Paper No. 7840, August 2000.

<sup>50</sup> The IFM program, and the entire economics profession, suffered the tremendous loss of Rudiger Dornbusch in 2002. He had given us, among much else, such concise contributions to international finance as the phrases “overshooting,” “news,” and “sudden stops.” Rudi continued his characteristic hectic pace up until the end. One of his last articles summed up his wisdom on the balance sheet issues: “A Primer on Emerging Market Crises,” NBER Working Paper No. 8326, June 2001; published in Edwards and Frankel, *op.cit.*.

<sup>51</sup> Mario Draghi, Francesco Giavazzi, and Robert Merton, “Transparency, Risk Management, and International Financial Fragility,” NBER WP 9806, June 2003; Robert Dekle and Kenneth Kletzer, “Domestic Bank Regulation and Financial Crises: Theory and Empirical Evidence from East Asia,” NBER Working Paper No. 8322, June 2001; Menzie Chinn and Kenneth Kletzer “International Capital Inflows, Domestic Financial Intermediation and Financial Crises under Imperfect Information,” [NBER Working Paper 7902](#); Douglas Diamond and Raghuram Rajan “Banks, Short Term Debt and Financial Crises: Theory, Policy Implications and Applications,” [NBER Working Paper 7764](#); Craig Burnside, Martin Eichenbaum, and Sergio Rebelo, “On the Fundamentals of Self-Fulfilling Speculative Attacks,” NBER Working Paper No. 7554, February 2000; and Joon-Ho Hahm and Frederic Mishkin, “Causes of the Korean Financial Crisis: Lessons for Policy,” NBER Working Paper No. 7483, January 2000.

<sup>52</sup> Robert Lipsey, “Foreign Direct Investors in Three Financial Crises,” NBER Working Paper No. 8084, January 2001.

<sup>53</sup> Assaf Razin, Efraim Sadka, and Chi-Wa Yuen, “Why International Equity Flows to Emerging Markets are Inefficient and Small Relative to International Debt Flows,” NBER WP 8659, Dec 2001.

<sup>54</sup> Roberto Rigobon, “Identification through Heteroskedasticity: Measuring “Contagion: between Argentinean and Mexican Sovereign Bonds,” NBER Working Paper No. 7493, January 2000; Graciela Kaminsky and Carmen Reinhart, “Financial Markets in Times of Stress,” NBER Working Paper No. 8569, October 2001; Kee-Hong Bae, G. Andrew Karolyi, and Rene Stulz, “A New Approach to Measuring Financial Contagion” [NBER Working Paper 7913](#); Kristin Forbes and Roberto Rigobon, “Contagion in Latin America: Definitions, Measurement, and Policy Implications,” NBER Working Paper No. 7885, September 2000.

<sup>55</sup> The Persistence of Emerging Market Equity Flows,” NBER WP No. 9241, September 2002.

<sup>56</sup> “The Center and the Periphery: The Globalization of Financial Turmoil,” NBER WP 9479, Feb 2003.

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<sup>57</sup> “Are Trade Linkages Important Determinants of Country Vulnerability to Crises?” NBER WP 8194 Mar 2001. Forbes and Menzie Chinn also find that effects of major securities markets on emerging markets tend to follow the lines of bilateral trade linkages rather than bilateral financial linkages: “A Decomposition of Global Linkages in Financial markets Over Time,” NBER WP No. 9555 Mar 2003.

58 E.g., Guillermo Calvo, “Explaining Sudden Stops, Growth Collapse and BoP Crises: The Case of Distortionary Output Taxes,” NBER WP 9864, July 2003; Cristina Arellano and Enrique Mendoza, “Credit Frictions and 'Sudden Stops' in Small Open Economies: An Equilibrium Business Cycle Framework for Emerging Markets Crises,” NBER Working Paper No. 8880, April 2002; Enrique Mendoza, “Credit, Prices, and Crashes: Business Cycles with a Sudden Stop,” [NBER Working Paper 8338](#); [also Ricardo Caballero and Arvind Krishnamurthy, “Smoothing Sudden Stops,” [NBER Working Paper 8427](#)].

<sup>59</sup> Amartya Lahiri and Carlos Végh, “Delaying the Inevitable: Optimal Interest Rate Policy and Balance of Payments Crises,” NBER Working Paper No. 7734, June 2000; Lawrence Christiano, Christopher Gust, and Jorge Roldos, “Monetary Policy in a Financial Crisis,” NBER WP 9005, Jun 2002; Ricardo Caballero and Arvind Krishnamurthy, “A ‘Vertical’ Analysis of Crises and Intervention: Fear of Floating and Ex Ante Problems,” NBER WP 8428, Aug 2001; Allan Drazen, “Interest Rate Defense Against Speculative Attack as a Signal: A Primer” and Barry Eichengreen and Andy Rose “Does it Pay to Defend against a Speculative Attack?”, both published in [Managing Currency Crises in Emerging Markets](#), edited by J.Frankel and M. Dooley, University of Chicago Press, Chicago, 2003.

<sup>60</sup> Robert J. Barro, “Economic Growth in East Asia Before and After the Financial Crisis,” NBER Working Paper No. 8330, June 2001. He estimates that the combined currency and banking crises in East Asia in 1997-98 reduced economic growth in the affected countries over a five-year period by 3% per year, compared to 2% per year for more typical crises.

<sup>61</sup> Michael Hutchison, “A Cure Worse Than the Disease? Currency Crises and the Output Costs of IMF-Supported Stabilization Programs,” NBER Working Paper No. 8305, May 2001; published in Dooley and Frankel, *op.cit.*

<sup>62</sup> Jed Friedman and James Levinsohn, “The Distributional Impacts of Indonesia's Financial Crisis on Household Welfare: A "Rapid Response" Methodology,” NBER Working Paper No. 8564, October 2001. William Easterly, “IMF and World Bank Structural Adjustment Programs and Poverty.” Both papers were published in Dooley and Frankel, *op.cit.*

<sup>63</sup> Stijn Claessens, Daniela Klingebiel, Luc Laeven, “Financial Restructuring in Banking and Corporate Sector Crises: What Policies to Pursue?,” NBER Working Paper No. 8386, July 2001; Benjamin Friedman, “Debt Restructuring,” NBER Working Paper No. 7722, May 2000; and [Douglas Diamond](#) and [Raghuram Rajan](#), “Liquidity Shortages and Banking Crises,” NBER Working Paper No. 8937, May 2002.

<sup>64</sup> Craig Burnside, Martin Eichenbaum, and Sergio Rebelo, “Government Finance in the Wake of a Currency Crisis,” NBER Working Paper No. 9786, June 2003 .

<sup>65</sup> High passthrough especially characterizes developing countries that are (unofficially) dollarized in the sense that a high percentage of assets and liabilities are denominated in dollars: Carmen Reinhart, Ken Rogoff, and Miguel Savastano, “Addicted to Dollars,” NBER Working Paper No. 10015, October 2003.

<sup>66</sup> Ariel Burstein, Martin Eichenbaum, Sergio Rebelo, “Why Are Rates of Inflation So Low after Large Devaluations?” NBER WP 8748, January 2002.

<sup>67</sup> Philippe Bacchetta and Eric van Wincoop, “A Theory of the Currency Denomination of International Trade,” NBER WP 9039, Jul 2002.

<sup>68</sup> “Expenditure Switching and Exchange Rate Policy,” NBER WP 9016, Jun 2002; and “The Responsiveness of Consumer Prices to Exchange Rates and Implications for

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<sup>69</sup> “Exchange Rates and Adjustment,” NBER WP 9118, Aug 2002.

<sup>70</sup> J. Bradford DeLong and Barry Eichengreen, “Between Meltdown and Moral Hazard: “The International Monetary and Financial Policies of the Clinton Administration,” NBER Working Paper No. 8443, August 2001, published in J. Frankel and P. Orszag, eds., American Economic Policy in the 1990s (MIT Press: Cambridge), 2002.

<sup>71</sup> Jeffrey Frankel and Nouriel Roubini, “The Role of Industrial Country Policies in Emerging Market Crises,” NBER WP No. 8634, December 2001. Published in Economic and Financial Crises in Emerging Market Economies, edited by Martin Feldstein (University of Chicago Press), 2003.

<sup>72</sup> Anne Krueger, “IMF Stabilization Programs,” and Morris Goldstein, “IMF Structural Adjustment Programs,” both published in Feldstein, *op.cit.*

<sup>73</sup> Michael Dooley and Sujata Verma, “Rescue Packages and Output Losses Following Crises,” NBER Working Paper No. 8315, June 2001; published in Dooley and Frankel, *op.cit.*; and Michael Bordo and Anna Schwartz, “Measuring Real Economic Effects of Bailouts: Historical Perspectives on How Countries in Financial Distress Have Fared With and Without Bailouts,” NBER Working Paper No. 7701, May 2000.

<sup>74</sup> Andrei Shleifer, “Will the Sovereign Debt Market Survive?” NBER Working Paper No. 9493, February 2003.

<sup>75</sup> The prediction of Barry Eichengreen and Ashoka Mody, that the adoption of CACs would not discourage investors in the case of more creditworthy issuers looks good, so far. “Would Collective Action Clauses Raise Borrowing Costs?” NBER WP no 7458, Jan 2000. Also Barry Eichengreen and Christof Ruehl, “The Bail-In Problem: Systematic Goals, Ad Hoc Means,” NBER Working Paper No. 7653, April 2000.

<sup>76</sup> Pierre-Richard Agenor and Joshua Aizenman, “Financial Sector Inefficiencies and Coordination Failures: Implications for Crisis Management,” NBER Working Paper No. 7446, December 1999.

<sup>77</sup> Peter Henry and Serkan Arslanalp, “Debt Relief: What Do the Markets Think?” NBER WP 9369, December 2002, conclude there is no evidence that debt forgiveness for Highly Indebted Poor Countries will work today as the Brady Plan did. Also Sebastian Edwards, “Debt Relief and Fiscal Sustainability,” NBER Working Paper No. 8939, May 2002.

<sup>78</sup> Whether deliberately or unavoidably. Alejandro Neut and Andres Velasco, “Tough Policies, Incredible Policies?” NBER WP no. 9932, August 2003.

<sup>79</sup> Rose, “One Reason Countries Pay Their Debts: Renegotiation and International Trade,” NBER Working Paper No. 8853, March 2002. Also Rose and Mark Spiegel, “A Gravity Model of Sovereign Lending: Trade, Default and Credit,” NBER Working Paper No. 9285, October 2002. Perhaps this is why countries with low trade/GDP ratios like Argentina tend to get into trouble with their creditors more often than open countries: Guillermo Calvo, Alejandro Izquierdo, and Ernesto Talvi, “Sudden Stops, The Real Exchange Rate, and Fiscal Sustainability: Argentina’s Lessons,” NBER WP no. 9828, July 2003.

<sup>80</sup> “Can Output Losses Following International Financial Crises be Avoided?” NBER Working Paper No. 7531, February 2000.

<sup>81</sup> Michael Kremer and Seema Jayachandran, “Odious Debt,” NBER Working Paper No. 8953, May 2002.