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# Globalization and Macroeconomics

Maurice Obstfeld\*

Although the U.S. economy has become increasingly open over the postwar period, by standard measures the United States remains surprisingly insular. For example, the ratio of U.S. international trade to GDP, which stood at only 4.6 percent in 1960, by 1999 was 12.2 percent, nearly three times higher. Still, this is small in absolute terms relative to the trade shares of most smaller economies.<sup>1</sup>

Despite the seeming insularity of the U.S. economy, global considerations have been prominent determinants of American economic policy in recent years. The effect of international trade on the U.S. wage distribution is a key issue in our domestic debates over further trade liberalization and the World Trade Organization. Growing global competition in the financial services industry has progressively undermined the web of financial restrictions that Congress enacted during the Great Depression. Correspondingly, concern for the stability of world capital markets has played a central role in some Federal Reserve actions, including decisions over interest rates.

Since the earliest days of systematic economic analysis, economists have sought to understand how the openness of economies affects their responses to disturbances occurring both at home and abroad. Indeed, the 1999 Nobel Memorial Prize in Economics was presented to Robert A. Mundell in large part for his pio-

neering studies of the links among economic policy, monetary arrangements, and the degrees of international capital and labor mobility. My recent research concentrates on four sets of questions in international macroeconomics. First, how integrated are world markets, and what does the degree of integration imply for macroeconomic phenomena? Second, how can we model the open economy in a way that is useful for guiding policy? Third, what are the implications for international monetary arrangements? Fourth, what forces have promoted international economic integration, specifically the integration of capital markets?

## Global Economic Integration

Over the past 50 years, technological and political changes have steadily chipped away at the barriers separating nations. As a result, the world is a much smaller place now than it was just after World War II. Labor mobility among nations generally remains low, a fact central to national decisions about exchange rate systems (see below). But along other dimensions, cross-border economic flows have increased dramatically. How far short of the ideal of a single, integrated global marketplace for goods, services, and capital is the world's collection of individual national markets now?

In a broad overview of the integration of world capital markets, I document the conflicting messages sent by different measures of international capital mobility.<sup>2</sup> While the markets for some assets appear to be tightly integrated — for example, the prices of similar nominally risk-free securities are now closely arbitrated without capital-account controls and political risks — other indicators of

capital mobility suggest that significant segmentation remains. For example, investors still display an extreme home bias in their choice of equity holdings. Currently, American investors hold around 12 percent of their equity wealth in foreign stock markets, up sharply from a few years back, but still hard to rationalize within standard models of rational risk-averse agents. Related to the home equity bias is a second puzzle: movements in national per capita consumption appear broadly unrelated to movements in world per capita consumption. This is in contrast to the predictions of benchmark models of efficient international risk sharing.<sup>3</sup>

A third capital-market puzzle, the “Feldstein-Horioka puzzle,” is that countries’ average saving and investment rates appear closely linked over long periods. Although the magnitude of the saving-investment correlation has declined over time among industrial countries, it remains far higher than the corresponding correlation for subnational regions. Thus, despite the likelihood of independent shifts in national saving behavior and investment opportunities, countries’ current account balances, which measure their net accumulations of foreign assets, are surprisingly small.<sup>4</sup>

While attempts to assess the integration of national asset markets have tended to yield conflicting results, attempts to measure the international integration of goods markets yield a much clearer verdict. Despite the trend of postwar trade liberalization and much technological progress, national goods markets appear to remain remarkably isolated from global influences over the medium term. There are big cross-border discrepancies even in the prices of very similar tradable goods, and changes

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in nominal exchange rates are associated with commensurate and very persistent changes not only in real exchange rates (defined as relative national price levels), but in the relative prices of similar tradable products. However, the feedback of these exchange rate-induced relative price changes into the real economy is extremely slow and difficult to detect in the short run; there often appears to be a high-frequency "disconnect" between exchange rates and the real economy.<sup>5</sup> The measured half-lives for disturbances to real exchange rates can be as high as four years. Moreover, there is now considerable evidence that producers of differentiated goods "price to market"; that is, they engage in third-degree price discrimination across consumers in different countries and, in particular, fail to offset nominal exchange rate movements through equal price adjustments.<sup>6</sup>

Alan M. Taylor and I, using disaggregated data on consumer prices, estimate a "threshold autoregressive" model in which the costs of international trade discourage arbitrage within a "band of inaction" whose width depends on the magnitude of the costs. We argue that the measured persistence of international price differentials is consistent with a rapid elimination of price discrepancies in excess of trade costs. Standard autoregressive estimates may confound an absence of mean reversion when there are small price discrepancies with more rapid band-reversion in the face of large discrepancies.<sup>7</sup>

A distinct piece of evidence on the segmentation of goods markets comes from studies of the home bias in international trade. Even after controlling for distance, per capita income, and other trade determinants suggested by gravity models of trade, there appears to be an inexplicable and large tendency for regions within countries to trade much more with

each other than with residents of foreign countries.<sup>8</sup>

In recent work, Kenneth S. Rogoff and I suggest a reconciliation of the puzzling evidence on the integration of national goods and asset markets. Using simple models, we show that the presence of plausibly sized costs of international trade *in goods markets* can go remarkably far in explaining a series of international macroeconomic anomalies, in asset markets *as well as* in goods markets.<sup>9</sup> The international trade costs we have in mind include transport costs, tariffs, and nontariff trade barriers, as well as any costs that may be associated with international payments, exchange rate volatility, different regulatory environments, national business practices, and so on.

For example, costs of trade can give rise to large incipient international differentials in real interest rates. These would dampen the current account imbalances that countries desire, notwithstanding perfect cross-border arbitrage of the nominal returns on riskless assets. Similarly, trade costs impair the international sharing of consumption risks. That effect can greatly reduce the motive to hold foreign assets, thereby promoting a large home equity bias. In the paper, we also argue that realistic trade costs (unrelated to distance) can generate substantial biases in commodity trade, while also helping to resolve the low consumption correlations puzzle and the puzzles of international goods pricing.

Of course, my work with Rogoff does not argue either that asset markets are perfect in reality or that there are no distortions intrinsic to international asset trade. The point is simply that without assuming that international asset markets are markedly less efficient than domestic ones, one can still go surprisingly far in resolving international asset market anomalies based on the costs of international goods trade. Even with low costs of

international asset transactions — high international capital mobility — distortions in goods markets can seriously impair the functions of capital markets.

## The New Open Economy Macroeconomics

A full resolution of the international goods pricing puzzles requires, alongside trade costs, the presence of nominal rigidities in the prices of goods and labor. The point of departure for the classic work of Mundell and J. Marcus Fleming on open-economy macroeconomics was a marriage of Keynesian price stickiness to high-speed international interest rate arbitrage. Since the 1960s when the modern global capital market was born, that perspective has proved extremely fruitful both for policy analysis and for the exploration of positive issues, such as the sources of exchange rate volatility.

However, the Mundell-Fleming model and its offshoots fail to capture a number of economic relationships that are critical to understanding open-economy dynamics in a world of capital mobility. For example, the models lack any basis for incorporating actors' intertemporal constraints or decision processes, thereby making impossible rigorous welfare calculations or an analysis of current accounts and government deficits.

During the 1970s and 1980s, researchers developed an intertemporal analysis of the current account and global interdependence. Important as the advance was, the initial generation of intertemporal models was simplified by assuming flexible nominal prices in product and labor markets.<sup>10</sup> That compromise left them ill-equipped to address the important shorter-run business cycle issues that preoccupied Mundell and Fleming. However, building on closed-economy New Keynesian approaches to macroeco-

nomics and on international trade models with imperfect competition, a new approach to open-economy macroeconomics recently has succeeded in incorporating nominal rigidities into fully dynamic models.

In early work in this vein, Rogoff and I incorporated sticky product prices into a two-country macroeconomic model with monopolistic producers and intertemporally maximizing consumers. That framework enabled us not only to investigate the dynamic effects of macroeconomic shocks, but also to conduct a rigorous welfare analysis of the repercussions of those shocks, both in the originating country and abroad. One important consequence of that work was to throw doubt on earlier ad hoc models of international policy optimization. Those models assumed that national welfare was related to a laundry list of endogenous macro outcomes (the terms of trade, output, inflation, current account — basically, whatever suited the needs of the moment). In the framework that Rogoff and I developed, the basic interrelations among such endogenous variables, and their joint ultimate effect on national welfare, are clarified.<sup>11</sup>

In subsequent work, Rogoff and I adapt the new open economy macroeconomics framework to an explicitly stochastic setting. Our model allows one to solve explicitly not only for equilibrium first moments of endogenous variables, but for their equilibrium variances and covariances.<sup>12</sup> That extension opens up a range of new applications. Among them are the effects of policy variability on exchange rate levels and risk premiums; the effects of variability on the levels of preset nominal prices and, hence, on resource allocation; and the exact welfare analysis of macroeconomic policy rules and exchange rate regimes.<sup>13</sup> Within such stochastic models, one can finally hope to address some of the funda-

mental welfare costs of exchange-rate variability that underlie Mundell's celebrated concept of the optimum currency area, but that have eluded formal modeling until recently. Already a number of interesting extensions of the stochastic new open-economy macro model exist, including pricing to market and its implications for policy regimes.<sup>14</sup>

Related dynamic frameworks based on models with microfoundations, sticky prices, and monopolistic competition have been used recently to assess monetary policy rules in domestic (closed-economy) settings. Parallel open-economy welfare analyses are now beginning to emerge. While much work still lies ahead, we can now hope to evaluate international monetary arrangements at the same level of rigor that is applied already to understanding the long-run effects of tax policies.

### **Choosing Exchange Rate Regime: Flexibility and Credibility**

While the new open-economy macroeconomics provides a firmer foundation for intertemporal policy analysis than the earlier Mundell-Fleming approach, it does not overturn (except in special and implausible models) a central insight that was at the core of Mundell's analysis of the optimum currency area. When prices are sticky and labor is internationally immobile, country-specific shocks can be weathered most easily if the exchange rate is flexible. Indeed, if region-specific shocks are sufficiently variable and large within a candidate currency area, then the flexibility benefits from retaining region-specific currencies may outweigh the allocation costs of having several currencies, rather than one, trading at uncertain mutual exchange rates.

One important factor omitted from the Mundellian calculus has come to the fore in recent international mon-

etary experience: the credibility of domestic monetary institutions and of the exchange rate regime. Depending on the circumstances, credibility can be a two-edged sword, cutting in favor of either floating or fixed exchange rates.

Even when a country announces and maintains a par value for its currency's exchange rate, circumstances normally will arise in which the country wishes it could change the exchange rate. The country will do so, devaluing or revaluing its currency, if the short-run benefits outweigh whatever costs the government perceives from reneging on its previous promise to maintain the currency at par. Indeed, in the face of severe adverse country-specific shocks and under capital mobility, speculative expectations of devaluation can raise domestic interest rates sharply, thereby making devaluation more probable and possibly hastening its occurrence.

This credibility problem of pegged exchange rates makes the exchange rate less predictable and may imply welfare benefits far below those that a credibly fixed exchange rate might confer. Furthermore, without some high-cost commitment mechanism to bind policymakers to the fixed exchange rate, the arrangement could be unstable, absent strict and effective controls on capital flows. This latter prediction seemed exotic when I first suggested it in the mid-1980s,<sup>15</sup> but the experience of the 1990s — including the European currency crises of 1992–3, the Latin American “Tequila” crisis of 1994, and the worldwide financial crises of 1997–8 — have driven many observers to the same conclusion. In fact, relatively few countries have succeeded in maintaining a fixed exchange rate even for a period of five years.<sup>16</sup>

Some of my recent work, inspired by the European and Tequila crises, has modeled mechanisms through

which investor expectations can interact with the political and economic objectives of policymakers, yielding multiple equilibriums in which speculation against a currency can result in a realignment that would not have occurred otherwise.<sup>17</sup> The 1997–8 crisis, especially as it unfolded in Asia, led to a veritable explosion of research on alternative models of currency crisis. Many of the resulting papers modeled crises as shifts from benign to malign equilibriums.<sup>18</sup>

Governments of the major currency areas developed fairly strong monetary policy institutions (such as independent central banks) after the inflationary excesses of the 1970s. They seem to have concluded that, despite inexplicable exchange rate volatility, the quicker and less painful adjustment that exchange rate flexibility allows far outweighs the putative gains from fixed exchange rates — gains that, in any case, would be sharply reduced by the inherently low credibility of exchange rate commitments.<sup>19</sup> The governments of such smaller countries as Australia, Canada, and New Zealand have reached this conclusion too, and the practice of floating is becoming more widespread even in the developing world, as Mexico's recent experience illustrates.

Still, there are more than a few cases in which the difficulty of building credible domestic policy institutions is such that high inflation can be controlled only through some extreme commitment mechanism centered on a fixed exchange rate. Argentina, in the wake of hyperinflation in 1991, wrote into its constitution a currency board system under which all base money is backed by foreign reserves and domestic pesos are convertible into dollars at a 1:1 rate. In cases like Argentina's, the credibility of the exchange rate commitment is greatly enhanced by political consensus based on a

widespread fear of lapsing into the monetary instability of the past. Paradoxically, countries with strong domestic monetary institutions might lack the ability to credibly fix their exchange rates, in part because the alternative to fixed rates is not unthinkable. But even the currency boards have been tested by speculators and, in some cases, have come close to shattering. Perhaps the ultimate sacrifice of policy autonomy in the interest of credibility is to adopt a foreign currency altogether, as in Ecuador's recent decision to "dollarize" its economy.

By adopting a shared currency, the eleven founding members of the European Economic and Monetary Union (EMU), soon to be joined by Greece, have eliminated the credibility problem of mutually pegged exchange rates. After the currency instability of 1992–3, prospective euro zone members were able to make a relatively smooth transition to the common currency in large part because of their countries' overarching political objective of maintaining stable exchange rates so as to qualify for the first wave of EMU in January 1999.<sup>20</sup> Low labor mobility within Europe — indeed, locational and occupational mobility even within individual EMU members are surprisingly low — implies that these countries do not form an optimum Mundellian currency area.<sup>21</sup> Thus, it is no surprise that in the initial two years of the euro, individual EMU members have experienced a wide range of macroeconomic conditions that certainly would have warranted divergent interest rates and exchange rate changes under country-specific monetary policies. While the political costs of exiting the EMU probably are prohibitive, it remains to be seen whether the non-EMU members of the European Union — Denmark, Sweden, and the United Kingdom — will find the political advantages of joining decisive. In purely economic

terms, it is hard to argue that they have suffered much (if at all) from their retention of national currencies.

In my work on monetary regimes, I argue that strong domestic monetary institutions — institutions that largely overcome dynamic consistency problems — make fixed exchange rates much less attractive. One might still ask whether some form of international monetary coordination mechanism is helpful at the stage where countries put into place their domestic institutions. After all, if a policy institution is designed simply to address domestic problems, might its creation not involve spillover effects abroad that could be internalized through coordinated institution-building by several countries? Perhaps surprisingly, there seems to be little scope for such coordination, as Rogoff and I show.<sup>22</sup> The more effective national monetary policy rules are in eliminating economic inefficiencies, the closer those rules will be to what a benevolent world monetary authority would choose. Our preliminary numerical experiments suggest that the welfare differences between coordinated and uncoordinated (Nash equilibrium) rules are tiny indeed.

### Whither Globalization?

Even if the world's economies, including its richest ones, are far from full economic integration, the clear trend is toward increasingly closer integration of goods and asset markets. Is that trend likely to continue? My own research in this area focuses on the asset-market side of globalization.

A major reason countries have pursued capital account liberalization is the prospect of economic efficiency gains analogous to those that free trade in goods and services delivers. Conversely, controls on international capital movement are difficult and costly to enforce for any period of time and have become progressively

harder to maintain as international product trade has expanded. While capital-account liberalization in principle has distributive effects similar to those of trade liberalization, the political opposition to freer trade in capital has not (at least in recent decades) been nearly as visible as opposition to freer trade in goods. Here, too, attempts to reach international agreement have suffered setbacks.

Potential gains to global trade in assets come from a number of sources, including a better allocation of the world's savings and more effective risksharing among countries. Harold Cole and I made an early attempt to quantify the potential benefits from the international sharing of consumption risks. We found them to be quite small, generally well below 1 percent of GDP per year.<sup>23</sup> In subsequent work, I applied individual preferences that separate attitudes toward risk from those toward intertemporal substitution, and, more importantly, I allowed for settings in which risk diversification can affect investment and growth.<sup>24</sup> These changes, especially the second one, can magnify the potential gains from international portfolio diversification, sometimes manyfold.

Free international capital mobility can compromise national sovereignty over economic policies, however. One symptom of this is what Alan M. Taylor and I have labeled the "trilemma" of the exchange rate (a proposition recently associated with Mundell's work, but actually familiar much earlier to writers such as John Maynard Keynes). Countries can choose at most two items from the following list of three: free mobility of capital, a fixed exchange rate, and a monetary policy oriented toward domestic goals. Taylor and I argue that the widespread use of floating exchange rates has, in fact, promoted capital account liberalization by permitting countries to pursue domestically oriented monetary policies even

in the presence of free cross-border asset transactions. Of course, where countries have adopted fixed rates, either to banish a legacy of economic policy abuse (Argentina) or in the interest of political goals (EMU), we see capital mobility, but a renunciation of active monetary policy.<sup>25</sup> This is a different choice from among the three possible options that the trilemma offers. Either way, most countries are moving to options that involve open capital markets.

Another realm in which capital mobility may threaten national sovereignty is that of tax policy. If capital can flee high-tax jurisdictions, then tax competition will force capital taxes downward, and countries will be driven to rely increasingly on taxes on labor. In the extreme, governments could find themselves unable to provide the services and infrastructure that their electorates desire without imposing a crushing fiscal burden on workers.<sup>26</sup> In my own work, I argue that we remain quite far from this extreme outcome, and, if we should draw much closer, international coordination of capital income taxation would be a far superior approach to restricting capital movements.<sup>27</sup>

This is not to say that there are no problems intrinsic to a globalized capital market in a world of sovereign nations — far from it. Globalization is like a powerful new medicine, one that offers immense possible benefits but must be used with caution because of the possible side effects. Domestic financial stability is endangered when countries open up their capital markets without adequate institutional safeguards against excessive risk taking. That lesson was underscored by the Asian crisis of 1997–8. By extension, connections between national markets and inconsistencies among the many different national supervisory regimes can create conditions in which a global crisis may occur (as

we also saw in 1997–8). Attempts are under way to address these structural flaws, and the future of the global capital market ultimately will depend on their success.

<sup>1</sup> The customary definition of "trade," in the present context, is the average of exports and imports.

<sup>2</sup> See M. Obstfeld, "International Capital Mobility in the 1990s," in *Understanding Interdependence: The Macroeconomic of the Open Economy*, P. B. Kenen, ed. Princeton, NJ: Princeton University Press, 1995.

<sup>3</sup> On the recent behavior of the home equity bias, see M. Obstfeld and K. S. Rogoff, "Perspectives on OECD Economic Integration: Implications for U.S. Current Account Adjustment," paper presented at the Federal Reserve Bank of Kansas City annual policy symposium, Jackson Hole, Wyoming, August 24–6, 2000. (This paper is at <http://elsa.berkeley.edu/~obstfeld/index.html>) Direct evidence on the low degree of international consumption risksharing is presented in M. Obstfeld, "Are Industrial-Country Consumption Risks Globally Diversified?" in *Capital Mobility: The Impact on Consumption, Investment, and Growth*, L. Leiderman and A. Razin, eds. Cambridge, UK: Cambridge University Press, 1994. For a recent survey of literature on both home equity bias and limited international consumption correlations, see K. Lewis, "Trying to Explain the Home Bias in Equities and Consumption," *Journal of Economic Literature*, 37 (June 1999), pp. 571–608.

<sup>4</sup> The "Feldstein-Horioka coefficient," which is the result of a cross-section regression of domestic investment rates on national saving rates, is now not too far off from the value prevailing under the pre-1914 gold standard. (Of course, data inadequacies and the nature of the pre-1914 country sample warrant great caution in making comparisons over time.) See M. T. Jones and M. Obstfeld, "Saving, Investment, and Gold: A Reassessment of Historical Current Account Data," NBER Working Paper No. 6103, July 1997, and in *Money, Capital Mobility, and Trade: Essays in Honor of Robert A. Mundell*, G. A. Calvo, R. Dornbusch, and M. Obstfeld, eds. Cambridge, MA: MIT Press, 2000.

<sup>5</sup> The disconnect is apparently reduced in conditions of very high inflation, when nominal exchange rate changes indeed

feed through to consumer prices very quickly. But the high correlation between real and nominal exchange rates seems to reassert itself once inflation has been tamed. See M. Obstfeld, "Open-Economy Macroeconomics: Developments in Theory and Policy," NBER Working Paper No. 6319, June 1999, and *Scandinavian Journal of Economics*, 100 (January 1998), pp. 247–75.

<sup>6</sup> For a survey on international price discrepancies, see K. S. Rogoff, "The Purchasing Power Parity Puzzle," *Journal of Economic Literature*, 34 (June 1996), pp. 647–68. An insightful evaluation of the evidence on international pricing to market is given by P. K. Goldberg and M. M. Knetter, "Goods Prices and Exchange Rates: What Have We Learned?," NBER Working Paper No. 5862, December 1996; and *Journal of Economic Literature*, 35 (September 1997), pp. 1243–72.

<sup>7</sup> See M. Obstfeld and A. M. Taylor, "Nonlinear Aspects of Goods-Market Arbitrage and Adjustment: Heckscher's Commodity Points Revisited," NBER Working Paper No. 6053, June 1997, and *Journal of the Japanese and International Economies*, 11 (December 1997), pp. 441–79. See also A. M. Taylor, "Potential Pitfalls for the Purchasing-Power-Parity Puzzle? Sampling and Specification Biases in Mean-Reversion Tests of the Law of One Price," NBER Working Paper No. 7577, March 2000, and *Econometrica*, forthcoming.

<sup>8</sup> A survey is offered by J. F. Helliwell, *How Much Do National Borders Matter?* Washington, D.C.: Brookings Institution, 1998.

<sup>9</sup> See M. Obstfeld and K. S. Rogoff, "The Six Major Puzzles in International Macroeconomics: Is There a Common Cause?," NBER Working Paper No. 7777, July 2000, and in *NBER Macroeconomics Annual 2000*, B. S. Bernanke and K. S. Rogoff, eds. Cambridge, MA: MIT Press, 2000.

<sup>10</sup> The literature is surveyed in M. Obstfeld and K. S. Rogoff, "The Intertemporal Approach to the Current Account," NBER Working Paper No. 4893, April 1996, and in *Handbook of International Economics*, Volume 3, G. M. Grossman and K. S. Rogoff, eds. Amsterdam: Elsevier Science Publishers, 1995.

<sup>11</sup> M. Obstfeld and K. S. Rogoff, "Exchange Rate Dynamics Redux," NBER Working Paper No. 4693, March 1996, and *Journal of Political Economy*, 103

(June 1995), pp. 624–60. See also M. Obstfeld and K. S. Rogoff, *Foundations of International Macroeconomics*. Cambridge, MA: MIT Press, 1996.

<sup>12</sup> The original paper is M. Obstfeld and K. S. Rogoff, "Risk and Exchange Rates," NBER Working Paper No. 6694, August 1998.

<sup>13</sup> Some of these applications are illustrated in M. Obstfeld and K. S. Rogoff, "New Directions for Stochastic Open-Economy Models," NBER Working Paper No. 7313, August 1999, and *Journal of International Economics*, 50 (February 2000), pp. 117–53.

<sup>14</sup> See, for example, M. B. Devereux and C. Engel, "Monetary Policy in the Open Economy Revisited: Price Setting and Exchange Rate Flexibility," NBER Working Paper No. 7665, April 2000.

<sup>15</sup> See M. Obstfeld, "Floating Exchange Rates: Experience and Prospects," NBER Reprint No. 792, December 1986, and *Brookings Papers on Economic Activity*, 2 (1985), pp. 369–450.

<sup>16</sup> For evidence and discussion, see M. Obstfeld and K. S. Rogoff, "The Mirage of Fixed Exchange Rates," NBER Working Paper No. 5191, July 1995, and *Journal of Economic Perspectives*, 9 (Fall 1995), pp. 73–96. Argentina now must be added to the select club of long-term fixers that Rogoff and I identified in that paper, but Thailand's exchange rate, surprisingly still fixed in 1995, crumbled in 1997 — with repercussions that soon were felt worldwide.

<sup>17</sup> See M. Obstfeld, "The Logic of Currency Crises," NBER Working Paper No. 4640, September 1994, and *Cahiers Économiques et Monétaires (Paris: Banque de France)*, 43 (1994), pp. 189–213; "Models of Currency Crises with Self-Fulfilling Features," NBER Working Paper No. 5285, February 1997, and *European Economic Review*, 40 (April 1996), pp. 1037–47; and "Destabilizing Effects of Exchange Rate Escape Clauses," NBER Working Paper No. 3603, February 1998, and *Journal of International Economics*, 43 (August 1997), pp. 61–77.

<sup>18</sup> Some of the mechanisms at work in Asia are described in M. Obstfeld "The Global Capital Market: Benefactor or Menace?," NBER Working Paper No. 6559, May 1998, and *Journal of Economic Perspectives*, 12 (Fall 1998), pp. 9–30. See also my panel discussion contribution in *Beyond Shocks: What Causes Business Cycles?* Boston: Federal Reserve Bank of Boston, 1998.

<sup>19</sup> For a more detailed assessment of

floating exchange rates in practice, see M. Obstfeld, "International Currency Experience: New Lessons and Lessons Relearned," *Brookings Papers on Economic Activity*, 1 (1995), pp. 119–220.

<sup>20</sup> For discussions of the transition, see M. Obstfeld, "Europe's Gamble," *Brookings Papers on Economic Activity*, 2 (1997), pp. 241–317; "A Strategy for Launching the Euro," NBER Working Paper No. 6233, March 1999, and *European Economic Review*, 42 (June 1998), pp. 975–1007; and "EMU: Ready or Not?," NBER Working Paper No. 6682, August 1999, and in *Princeton Essays in International Finance* 209, July 1998.

<sup>21</sup> For a more detailed discussion of economic adjustment in Europe, see M. Obstfeld and G. Peri, "Regional Nonadjustment and Fiscal Policy," NBER Working Paper No. 6431, June 1999, and *Economic Policy*, 26 (April 1998), pp. 205–59; reprinted in *Intranational Economics*, E. van Wincoop and G. D. Hess, eds. Cambridge, UK: Cambridge University Press, 2000.

<sup>22</sup> M. Obstfeld and K. S. Rogoff, "Do We Really Need a New International Monetary Compact?," NBER Working Paper No. 7864, August 2000.

<sup>23</sup> H. Cole and M. Obstfeld, "Commodity Trade and International Risksharing: How Much Do Financial Markets Matter?," *Journal of Monetary Economics*, 28 (August 1991), pp. 3–24.

<sup>24</sup> M. Obstfeld, "Evaluating Risky Consumption Paths: The Role of Intertemporal Substitutability," *European Economic Review*, 38 (August 1994), pp. 1471–86; and "Risk Taking, Global Diversification, and Growth," *American Economic Review*, 84 (December 1994), pp. 1310–29.

<sup>25</sup> M. Obstfeld and A. M. Taylor, "The Great Depression as a Watershed: International Capital Mobility over the Long Run," NBER Working Paper No. 5960, May 1999, and in *The Defining Moment: The Great Depression and the American Economy in the Twentieth Century*, M. Bordo, C. Goldin, and E. White, eds. Chicago: University of Chicago Press, 1998.

<sup>26</sup> For a prominent exposition of this scenario, see D. Rodrik, *Has Globalization Gone Too Far?* Washington, D.C.: Institute of International Economics, 1997.

<sup>27</sup> See M. Obstfeld, "The Global Capital Market: Benefactor or Menace?," op. cit.