FINANCIAL GLOBALIZATION, EXCHANGE RATES, AND INTERNATIONAL TRADE

By

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Introduction

The global economy has undergone a quantum leap in the degree of integration of international financial markets since the early 1970s. In large measure, this shift was the product of deliberate policy changes, such as the elimination of capital controls and the deregulation of domestic financial markets (Mussa and Goldstein 1993). In addition, dramatic improvements in (and reductions in the cost of) international communications and information technology contributed to the reduction of “natural” barriers to international financial transactions, as well as to the reduction of barriers to foreign direct investment and merchandise trade (Obstfeld 1998; Baldwin and Martin 1999). International financial liberalization was also accompanied, in a somewhat chicken-and-egg causal relationship, by the abandonment of the Bretton Woods system of adjustable exchange rate pegs and the shift to floating exchange rates among the major currencies or regional currency blocs (Eatwell 1996). Financial liberalization also followed upon an earlier (but still ongoing) process of multilateral trade liberalization, which dated back to the General Agreement on Trade and Tariffs (GATT) of the 1940s and was further advanced by the formation of the World Trade Organization (WTO) in 1994.

For the most part, mainstream international economists have promoted the liberalization of both commodity trade and capital markets, and also supported the shift to flexible exchange rates (although there have been some notable orthodox dissidents on the last point, who favor permanently fixed nominal exchange rate parities). Nevertheless, the economics profession has been struggling to keep up with the unexpected consequences of these tectonic policy shifts ever since they were actually put into practice. International economists entered the brave new world of financial globalization and floating exchange rates with an analytical apparatus inherited from
the past that ill equipped them to anticipate what that new world would be like. The chief characteristics of the new era—such as extreme volatility of exchange rates, persistent violations of purchasing power parity, chronic trade imbalances, repeated financial crises, and now internationally correlated business cycles (such as the current global downturn of 2000-01)—were not exactly what the promoters of the new order had expected or promised.

To be sure, international economists have been busy at work since the 1970s, developing new theoretical and econometric models to try to comprehend the new realities of globalized finance. From Dornbusch’s (1976) pathbreaking model of exchange rate overshooting through the most recent work on self-fulfilling speculative attacks, bubbles, and panics (surveyed in Blecker 1999b), international economists have sought to explain the volatility of exchange rates that was not predicted by earlier generations of models. Repeated econometric tests have established certain new “stylized facts” about the international financial system, such as the fairly robust findings that: covered interest parity holds between countries with liberalized capital flows, but uncovered interest parity and real interest parity don’t hold; relative purchasing power parity is generally violated at least in the short and medium runs, and possibly even in the long run; no fundamentals-based model of exchange rates can predict their short-term movements consistently better than the assumption of a random walk; and current account imbalances have widened and grown more persistent since the 1980s.

Yet, in spite of these genuine intellectual advances, the basic analytical framework of most international economists remains stuck in the intellectual habits of the past. The core theoretical models of international economics (both micro-trade and macro-finance) continue to be based on assumptions that deny the new realities of globalized financial markets. Old ideas such as the law of comparative advantage, purchasing power parity, automatic balance of
payments adjustment, and predictable exchange rates continue to serve as benchmarks for research, and dominate both pedagogy and policy advice. As in many other fields of economics, advances at the frontiers of knowledge have not filtered back to change the basic models that most economists use to organize their thinking about the international economy. Like good Kuhnian researchers invested in a “normal” scientific research program, international economists are adept at analyzing and rationalizing the emerging anomalies that are inconsistent with their paradigm, but they cannot yet imagine a new paradigm in which these phenomena would cease to be anomalous.

This paper will attempt to demonstrate the extent to which the globalization of finance has undermined the dominant paradigm in international economics—and the policy implications that are usually drawn from that paradigm. The realities of the new era of globalized finance have not only created anomalies that were not anticipated by earlier theories, but have also undermined the assumptions of the regnant theoretical approaches. The policy implications of this paper are mostly negative, that is, to show that standard policy advice in both the trade and financial arenas rests on fundamentally flawed theoretical models. While a more positive alternative policy approach remains to be worked out, the present argument at least justifies resistance to the conventional free-trade and financial-liberalization policy agendas, and suggests directions for future research.

The Classical Approach

The twin pillars of the classical approach to international economics are the notion of an automatic adjustment mechanism in the balance of payments and the theory of commodity trade
as governed by the law of comparative advantage. These two propositions are not only related, but in fact constitute two sides of the same coin. An automatic adjustment mechanism—originally conceptualized along the lines of Hume’s specie-flow story—is needed to guarantee balanced trade, which in turn is an essential assumption of the comparative advantage theory of trade. In the latter theory, commodity trade is essentially barter—goods are exchanged for other goods at relative prices (i.e., barter ratios) that equate the value of exports to the value of imports—and is completely independent of a country’s international monetary and financial relations. This bifurcation of the field of international economics into real (trade) and monetary (finance) parts is, of course, just a specific case of the general proposition of monetary neutrality, in which “nominal” variables (like money supplies and price levels—or exchange rates) have no effects on “real” variables (such as output or employment—or trade).  

Another key aspect of the classical view is the deliberate neglect of international capital mobility—whether foreign direct investment in productive capital abroad, or portfolio investment in foreign financial assets. The assumption of capital immobility supports both the classical view of balance of payments adjustment and the classical theory of comparative advantage. On the one hand, in the absence of capital flows, the only counterpart to commodity trade is flows of international reserve assets (originally gold, later generalized to foreign exchange), and one could plausibly claim that such flows induce adjustments that would maintain balanced trade (e.g., the movements in price levels in Hume’s specie-flow mechanism, or interest rate changes in later models). On the other hand, assuming that productive capital is internationally immobile implies that capital owners cannot invest abroad in pursuit of absolute competitive advantages (e.g., the lowest unit labor costs in labor-intensive assembly operations),
and hence capitalist firms can find no more profitable outlets for their investment than the
domestic sectors with comparative advantages (Brewer 1985).

No one could credibly claim that these assumptions provide a realistic account of the
contemporary global economy. Yet, the models that are based on these assumptions continue to
be taught to generations of students in college (and graduate-level) textbooks, and remain the
foundations for conventional policy advice. The case for free trade is usually stated in terms of
the efficiency gains from specializing according to comparative advantages, along with some
reassurance that (aside from a temporary adjustment period) no one ever loses a job due to
imports because the economy tends to remain at full employment (or, at least, the level of
employment is determined by factors other than the trade balance, such as central bank monetary
policy). Complaints about low-wage labor (today sometimes known as the “sweatshop labor
argument”) are routinely dismissed as illogical because, if trade follows comparative labor cost
advantages à la Ricardo, relative wages merely track (average) relative productivities, and no
country can gain an overall competitive advantage in average unit labor costs (wages adjusted
for productivity).

Similarly, popular concerns over trade deficits are often dismissed as unfounded because
trade imbalances are held to be self-eliminating. For countries with fixed exchange rates, the
standard automatic balance of payments adjustment mechanisms referred to earlier are invoked.
For countries with flexible exchange rates, the story is even simpler: countries with trade deficits
should have depreciating currencies that eliminate the deficits, and conversely surplus countries
should have appreciating currencies. Indeed, the belief that flexible exchange rates would
provide such a simple way of ensuring balanced trade and thereby insulating countries from
external demand shocks was one of the main arguments in favor of flexible rates before they were actually adopted in the early 1970s.

In the face of obvious evidence that exchange rates don’t behave this way and trade imbalances can persist, the argument sometimes shifts to the view that current account deficits that are offset by equal capital account surpluses are not a problem. In this view, countries that have chronic trade deficits for goods and services simply have a “comparative advantage” in selling their assets, or can be seen as exhibiting a preference for current consumption over future consumption in an intertemporal context. Since net capital inflows represent a “vote of confidence” in an economy, it is claimed, trade deficits are a sign of strength rather than weakness. This view was widely promoted by conservative U.S. economists in the late 1990s—following earlier boasts of a similar nature by Mexican and Thai officials earlier in the decade, prior to their countries’ currency collapses in 1994 and 1997, respectively.

Whatever the merits of these views, the fact that chronic trade imbalances sustained by persistent capital flows invalidate the traditional comparative advantage theory of trade in goods and services seems to go unnoticed. If a country has a chronic trade surplus, it must be exporting some goods and services in which it does not have a comparative advantage—at least in a static sense, i.e., ignoring intertemporal issues. Conversely, if a country has a chronic trade deficit, it must be importing some goods and services in which domestic producers have a (static) comparative advantage. In such a situation, it is hard to maintain that the pattern of international specialization is guided by the law of comparative advantage, or that free trade policies combined with open capital markets necessarily result in goods being exported by the relatively most efficient national producers. We shall return to this point below, after discussing the intertemporal argument in the next section.
The intertemporal efficiency case for free international mobility of capital can be stated by analogy to the classical case for free trade in goods and services. Free trade in goods and services is supposed to maximize the efficiency of global production at any point in time, by enabling producers in each country to supply those commodities that they can produce with the relatively lowest costs (i.e., the goods and services in which they have a “comparative advantage”). International capital movements can be viewed analogously as involving the exchange of consumption by different countries over time: net lender countries are trading off current consumption for future returns, while net borrower countries are able to increase their present consumption (or investment) in exchange for future obligations to repay. Theoretically, this results in a more efficient “intertemporal” allocation of resources: “Where savers in one country have lesser preference for current consumption than those in another, total welfare is increased by shifting the consumption of one into the future and the other into the present” (Kindleberger 1967, quoted in Dufey and Giddy 1978, 193). Although it has not been widely discussed (this author is unable to think of any references on the point), such reallocations of intertemporal consumption must entail some sacrifices of static efficiency, if as stated earlier the borrower (deficit) countries must import some goods in which they have a static comparative advantage and the lender (surplus) countries must export some goods in which they have a static comparative disadvantage. Presumably, in a complete analysis one would have to show that the dynamic gains outweigh the static losses.
The allocative efficiency argument for liberalized capital flows can also be stated in terms of the notion of “financial intermediation.” Financial markets and institutions function as intermediaries between ultimate savers and borrowers in society—those with excess funds to lend out, and those with a need to borrow funds to finance the excess of their desired investment or consumption expenditures over their current income. Internationally, if the excess savings of some countries can freely flow to borrowers in other nations around the world, then total world savings should supposedly find their most beneficial uses and the entire global economy should be more productive as a result. As Kindleberger (1967) wrote,

The main justification for international capital movement is that it shifts savings from locations where they are abundant and cheap relative to investment opportunities to places where they are scarce and expensive. . . . Where capital is more productive in one country than another, it should be moved from the country where it is less to the country where it is more productive. (Quoted in Dufey and Giddy 1978, 193).

The analogy to free trade in goods and services should alert us to two important qualifications to the case for free capital mobility. Even assuming the idealized conditions under which free trade brings aggregate efficiency benefits, the gains from trade generally come at the expense of two types of social costs: redistributional effects and adjustment costs. Although these problems are widely acknowledged in regard to commodity trade (even if their quantitative importance is often disputed), it is less often recognized that these same sorts of distributional and adjustment problems are also found in the case of international investment. Redistributional effects occur when, for example, investment is shifted from a less profitable outlet in one country to a more profitable outlet abroad. While the investors (and those employed by the foreign capital in the host country) thus gain, those in the home country who would have benefited from the domestic investment (especially domestic workers) are worse off than they would have been if the investment had been made at home, holding other factors constant (technically speaking,
the workers’ marginal productivity is reduced by the exit of capital from their country).

Adjustment costs can be felt, in the same example, if some workers in the capital exporting countries become unemployed (either temporarily or permanently), or become reemployed at lower wages, or require costly retraining in order to obtain new jobs.

Theoretically, in a perfect capital market, the distributional losses to some should be more than compensated by the gains to others, so that there is a net social benefit, although (just like in commodity trade) there is no mechanism in a market economy to compel the winners compensate the losers. Globalization critics strongly suspect that the winners today are often rich and powerful multinational corporations, while the losers are ordinary workers and citizens, thus implying negative distributional effects of capital mobility (see, e.g., Rodrik 1997; Palley 1998). With regard to adjustment costs, even in theory there is no way of being sure that they do not outweigh the efficiency gains. After all, adjustment costs are essentially externalities—they are costs that are not charged to the agents who make the decisions about moving their capital to more privately profitable locations.10

However, even leaving distributional effects and adjustment costs aside, the analogy between free capital mobility and free trade breaks down because international investment is plagued by severe informational problems that are not found in ordinary trade in goods and services. As Keynes (1936) argued, all investment decisions are necessarily based on purely subjective evaluations of the probabilities of future events, or even on mere feelings of optimism or pessimism about a country’s future prospects (so-called “animal spirits”). Restating this point in terms of modern economic theory, Stiglitz (1998, 18) writes that “Problems of incomplete information, incomplete markets, and incomplete contracts are all particularly severe in the financial sector.” In the case of international investment, these informational problems are
compounded, since foreign investors generally have less information about a country’s assets and their true future prospects than domestic investors are likely to have.

As a result of the intrinsic information problems in financial markets, these markets are often driven by what is called “herd behavior” or self-fulfilling prophecies. When this occurs, asset prices can skyrocket in a “bubble” and subsequently collapse in a “panic,” without regard to the underlying fundamentals that should theoretically determine the true value of the asset (e.g., discounted expected future profits for corporate stock prices). Information problems also give rise to the type of “contagion effects” seen in the spread of financial crises across Latin America, Asia, and other developing regions in the 1990s. Pure contagion occurs when a financial crisis breaks out in a country whose economic fundamentals, while not necessarily unproblematic, were not bad enough to generate a crisis on their own, due to a loss of confidence on the part of foreign investors who are spooked by a financial collapse in some other country. Whether they result from contagion or not, financial crises generally occur when investors turn relatively suddenly from being unduly optimistic about a country’s investment prospects (often ignoring fairly obvious warning signs) to being unduly pessimistic (and then ignoring the country’s intrinsic strengths). Unfortunately, this sort of instability appears to be endemic in liberalized capital markets (see Taylor 1998).

One theoretical model of currency crises and speculative panics (Calvo and Mendoza 1996) analyzes why such information problems are likely to be especially severe when a large number of countries have liberalized their capital markets at the same time. This model is based on the fact that information is not a free good, and investors need incentives in order to be willing to pay the costs of obtaining it. Since individual investors can reduce the overall risk of their portfolios by diversifying their investments across countries (assuming that country risks
are uncorrelated), they have less incentives to seek information about the individual countries in which they invest when their portfolios are highly diversified internationally than they would have if they concentrated their investments in a smaller number of countries. Thus, international capital market integration makes “herd behavior” (and hence bubbles, panics, and contagion) much more likely to occur. And, the contagion effects then undermine the assumption of uncorrelated country risks which motivate the diversified investment strategies in the first place, creating the risk of global systemic meltdowns of the type nearly experienced in 1997-98.

While these types of problems are generally recognized to exist in international financial markets today, the way in which they undermine the case for capital mobility is not always appreciated. Information problems do not merely create costs (e.g., greater volatility) that have to be weighed against the benefits of open capital markets, as acknowledged by authors like Calvo and Mendoza; rather, these problems also undermine the very presumption of net efficiency gains from free international mobility of capital. In order for investors to invest in the places with the highest real returns to their capital, investors must have full information about the true economic returns to all available investment opportunities—or, at least, rationally determined expectations about the likely returns based on objectively known probabilities of possible future outcomes. If investors are not making such fully informed decisions based on objective criteria about countries’ long-term prospects, there can be no presumption that capital is flowing toward those countries where it will be most productively used. To the extent that investors follow self-fulfilling expectations about short-term trends and move their funds into and out of countries in herd-like fashion, the efficiency argument for free capital mobility ceases to apply.

The same informational problems apply to the intertemporal argument. It is hard to believe, for example, that Americans have made an informed choice about how much future
consumption they will have to sacrifice when their current account deficit has to be reduced.

Nor is it apparent that, say, Japanese citizens with their obsessively high saving rates are planning a big consumption binge in the future, when their current account surplus disappears. All evidence indicates that the Japanese are likely to go on saving at astronomical rates, even if the cost is a prolonged and deep depression, unless there is a massive cultural shift.

Distributional problems also enter here: the affluent Americans who went on a consumption binge in the 1990s are probably not the same people (either by class or by generation) who will end up making the future sacrifices required in order to reduce the trade deficit. The notion that a whole country could be making such an informed choice about intertemporal allocation rests upon the fallacy of assuming a “representative agent,” a fiction which does not correspond to the real world of heterogeneous agents with conflicting interests. Credulity is further strained when the representative agent has to consider the welfare of infinitely many future generations in order to formulate an intergenerationally optimal consumption and saving plan.

A more likely interpretation is that the shift to liberalized capital markets has been a response to political pressures from interest groups that stand to gain from such liberalization, particularly financial institutions and “Wall Street” interests who can profit off the volatility in global financial markets, as well as multinational firms that want the freedom to move their funds (and locate their facilities) internationally without restrictions. Although I have referred to them as “Wall Street” interests (following the terminology of Palley 1998), it should be clear that they are not limited to Americans—elites around the world, in developing as well as developed nations, have an interest in open capital markets in which they can globally optimize their risk/return strategies. The opening of capital markets can create severe negative impacts for important segments of society, both in the present and the future, who have no effective voice in
the international investment decisions that affect them. This is the reality, which most mainstream economists (with a few notable exceptions, such as Stiglitz) cover up by their insistence on the efficiency-enhancing benefits of capital mobility.

While more research is certainly needed, much as been learned already about the actual effects of capital market liberalization. Rodrik (1998) has shown that there is no international correlation between capital market liberalization and growth rates (after controlling for other variables that affect the latter). An earlier study by researchers at the IMF (Grilli and Milesi-Ferretti 1995) actually found positive (but statistically weak) effects of capital account controls on growth rates, but negative (and also statistically weak) effects of current account controls on growth. The latter study also found that capital controls were associated with higher average inflation (suggesting that they allow for greater monetary policy autonomy) and with lower real interest rates (suggesting that they can encourage domestic investment). While growth benefits of capital market liberalization are thus hard to find, costs in terms of increased economic volatility are easy to see. As D’Arista (1996) notes, international flows of portfolio capital are procyclical: investors pour money into financial markets when economies are booming and then withdraw those funds precipitously in times of crisis, thus tending to exaggerate the boom-bust cycles. This phenomenon has been observed in the repeated financial crises in emerging markets of the past decade, and shows no sign of abating. While some of these problems could be ameliorated through policy reforms such as greater transparency of financial institutions and abandoning indefensible exchange rate pegs, the procyclical nature of capital flows is endemic as a result of the information problems and herd behavior discussed earlier.
The Implications of Capital Mobility for Exchange Rates

Although there has been a long debate about how to measure the extent of international capital mobility (see Blecker 1997 for a survey), a consensus has formed on the criterion of the covered interest parity (CIP) condition, which in approximate terms is:

\[ i = i^* + f \]  

(1)

where \( i \) is the home interest rate, \( i^* \) is the foreign interest rate, and \( f \) is the forward discount on the home currency \( (f = (F - S)/S, \text{ where } F \text{ is the forward exchange rate and } S \text{ is the spot exchange rate, both defined in units of home currency per unit of foreign currency).} \) This condition is expected to hold if financial markets are open enough to allow free covered interest arbitrage activity, and providing that the interest-yielding assets (usually, short-term government bonds or other money market instruments) are regarded as risk-free (especially, there is no fear of default or of the re-imposition of capital controls). This condition began to hold very tightly in the late 1970s and early 1980s in the major industrialized countries that liberalized their capital markets at that time, such as West Germany, Japan, USA, and the UK (Frankel 1991). Subsequently, CIP began to hold fairly tightly in other industrialized countries and emerging market countries that opened up their capital markets in the late 1980s and early 1990s, except for periods of volatility in which risk premia presumably become important.

CIP is an arbitrage condition between spot and forward exchange rates, but it is not a complete equilibrium condition for international asset markets. The (approximate) general condition for equalization of risk-adjusted expected rates of return to international portfolio investment is

\[ i = i^* + \Delta s^e + \rho \]  

(2)
where $\Delta s^e$ is the expected rate of depreciation of the home currency (i.e., $\Delta s^e = (S^e - S)/S$, where $S^e$ is the expected future spot exchange rate) and $\rho$ is the risk premium on home bonds (or, if negative, on foreign bonds). Many theoretical models assume a special case of this where $\rho = 0$, i.e., there is no country risk premium (domestic and foreign bonds are “perfect substitutes”), which is known as uncovered interest parity (UIP). While this formulation is theoretically appealing, most efforts at testing UIP have found that it does not hold (see the survey in Blecker 2002). The reason usually given is that (apart from the intrinsic difficulties in measuring $\Delta s^e$) $\rho$ is typically non-zero, and there are significant and time-varying risk premia.

Equation (2) can be solved for the spot exchange rate that clears the international bond markets (an alternative approach suggested by Taylor 2001 is discussed below):

$$S = \frac{S^e}{(i - i^*) + (1 - \rho)} \quad (3)$$

While the interest rate differential clearly matters, subjective expectations of the future spot rate and perceptions of risk differentials also matter. If the interest rates in (3) are short-term, money market rates, they can be taken as exogenously set by the monetary authorities on an endogenous money view (central banks target key money market interest rates rather than monetary aggregates). In Keynesian fashion, the subjective expectations and fears can be quite volatile, however, and hence can dominate the policy “fundamentals” (interest rates) in this equation in determining the actual level of $S$.

There is perhaps no better demonstration of this point than the depreciation of the euro after its inception in 1999 (and starting even earlier, the depreciation of its predecessor the ECU), in spite of the intentions of its creators and the new European Central Bank (ECB) to make it a strong currency via a high interest rate policy combined with fiscal contraction. The resulting
slow growth made the Eurozone countries undesirable locations for investment, and heightened risk premia, while generating self-fulfilling prophecies of euro depreciation (rising $S^e$ driving rising $S$)—in spite of interest differentials that frequently favored European bonds (e.g., when the ECB or the former Bundesbank would fail to match US Fed interest rate cuts). Ironically, the low euro eventually gave an export-led stimulus to the Eurozone economies, contrary to the intentions of the currency union’s promoters.

However, (3) is clearly not a complete theory of exchange rate determination. First, the processes governing exchange rate expectations and risk perceptions have to be modeled. This requires both an understanding of investor psychology (perhaps following the micro-structural approach surveyed by Frankel and Rose 1995, discussed further below) and the objective factors that can influence that psychology (for example, using the approach of Taylor and O’Connell 1985 for modeling an endogenous risk premium in another context). Second, this condition only applies to short-term, money-market flows, and does not deal with other types of capital flows with different term structures and rates of return (see Marston 1995). In addition to the short-term bond market clearing envisioned in (2), there are also international financial flows for investment in long-term bonds, corporate equity, real estate, and direct investment. These asset transactions must also have some influence on the actual exchange rate, as long as they are large enough to matter compared with short-term, money market flows.

What is clear, however, is that the simple-minded stories of exchange rate determination in traditional open economy macro models need to be discarded, if they are incompatible with (2) or an extended version thereof. Briefly, there are three main types of conventional models of flexible exchange rates: Mundell-Fleming, portfolio balance, and the monetary approach. Each of these presumes that exchange rates can be explained by some unique set of “fundamentals” —
a concept that is never clearly defined, but which seems to include monetary and fiscal policies, as well as the underlying parameters of a macro model (both exogenous variables and behavioral functions). Not only is the concept of fundamentals ill-defined, but the three approaches disagree about what the fundamentals consist of.

The oldest is the Mundell (1963)-Fleming (1963) model, which is essentially an IS-LM model incorporating a balance of payments (BP) equation in which net capital inflows depend on the interest rate differential, $i - i^* - \Delta \sigma - \rho$ (usually, although not necessarily, simplified by assuming static exchange rate expectations and perfect substitutes, i.e., $\Delta \sigma = \rho = 0$). This model, which is prominently featured in most textbook presentations of open economy macroeconomics (e.g., Caves, Frankel, and Jones 2002; Krugman and Obstfeld 2000), predicts certain definite results under standard assumptions. For example, under perfect capital mobility, a fiscal expansion causes the home currency to appreciate while a monetary expansion causes it to depreciate. In this case, the fundamentals are monetary and fiscal policies and the parameters of a standard IS-LM model. Empirical support for this theory is weak, however, and it ignores the possibility of offsetting effects due to changes in exchange rate expectations and/or risk premia induced by the postulated policies.

The portfolio balance model, in contrast, assumes that domestic and foreign bonds are imperfect substitutes and allows home and foreign interest rates to differ even in the absence of exchange rate expectations (due to implicit risk premia). The model extends Tobin’s approach to portfolio allocation to an open economy setting, usually by assuming that domestic residents hold three assets (domestic money, a domestic bond, and a foreign bond). Under standard assumptions (e.g., the demand for each asset is positively related to its own interest rate and inversely related to all other interest rates), a reduction in foreign bond holdings (as a result of a
current account deficit, which implies a decrease in net foreign assets) causes the home currency to depreciate. This result implies a modern version of an automatic adjustment mechanism, since (under Marshall-Lerner assumptions) a depreciation would tend to eliminate the current account deficit. In portfolio balance, then, the fundamentals are similar to those in Mundell-Fleming (e.g., monetary and fiscal policies), but the focus is only on asset market clearing rather than the goods market and money market clearing in IS-LM-BP. This model has fared extremely poorly in econometric tests, which do not find that exchange rates always adjust in the right direction (just as often, countries with current account deficits have appreciating currencies).

While the Mundell-Fleming and portfolio balance models are both of Keynesian inspiration, the model that has actually motivated most empirical studies of flexible exchange rate determination is the monetary approach model. In the simplest version, the exchange rate has to obey purchasing power parity \( S = P/P^* \), where \( P \) and \( P^* \) are the home and foreign price levels, respectively. Prices are flexible and are determined by the nominal money supply \( M \) and demand for real balances (liquidity preference, \( L \)), using the standard formulation of money market equilibrium in which \( M/P = L(i, Y) \), with \( L_i < 0 \) and \( L_Y > 0 \), where \( Y \) is exogenously given full-employment output. Assuming that an analogous equation holds in the foreign country, the equilibrium exchange rate is solved for as follows:

\[
S = \frac{M/M^*}{L(i, Y) / L^*(i^*, Y^*)}
\]

In this basic version, international capital flows are ignored, and interest rates affect the exchange rate only through their effects on domestic money demand and the (flexible) price level—hence, the somewhat counterintuitive prediction that a higher domestic interest rate causes the home currency to depreciate (by lowering money demand and hence increasing the equilibrium price level).
This basic model can then be modified in various ways, such as allowing for short-term price stickiness and assuming that the interest rate obeys UIP (which can lead to Dornbusch-style overshooting in response to monetary “shocks”). The latter is accomplished by assuming special functional forms for money demand $L$ and $L^*$, such that (4) can be written as follows (with lower-case letters used to represent natural logs, except for the interest rates)

\[ s = (m - m^*) + k (y^* - y) + \lambda (i - i^*) \]  

where $k$ is a positive constant and $\lambda' > 0$. When exchange rate expectations are introduced via UIP (i.e., using equation 2 to substitute out for $i - i^*$ with $\rho = 0$), the assumption of rational expectations can be imposed on the $\Delta s^e$ term, which ends up implying that the current exchange rate depends only on current “fundamentals” (money supplies and national incomes) and (rationally) expected future fundamentals. However, this result requires imposing a transversality condition, which effectively rules out speculative bubbles, but is really just a case of assuming the conclusion (i.e., that only fundamentals matter) rather than proving it.

In any version of the monetary approach model, the fundamentals include exogenously given, supply-side-determined output and real interest rates along with money supplies. Fiscal policy does not enter directly into the monetary model, except insofar as budget deficits are monetized, and the policy emphasis is on money supplies which are assumed to be under the control of the monetary authorities. The monetary approach views the exchange rate as linked only to the relative price of a country’s goods and services, not to the prices of its internationally traded assets (except insofar as UIP is used to tie down the domestic interest rate, but this enters the model only through the money demand functions). The monetary approach model is thus a strange choice as a benchmark model for theorizing about flexible exchange rates in an era of open capital markets, the popularity of which can only be explained by the historical coincidence
that the switch to flexible exchange rates occurred at the same time that monetarism displaced Keynesianism as the leading macroeconomic approach in the early 1970s.

In fact, exhaustive econometric tests have repeatedly demonstrated the poor predictive powers of the monetary approach, either in its simple version or with more bells and whistles (see Frankel and Rose 1995). Coefficient estimates are extremely sensitive to sample selection (countries and time periods), fitted values are much less volatile than actual observations on exchange rates, and the models don’t predict well out of sample. It has repeatedly been shown that a monetary approach model cannot generally predict short-term fluctuations in exchange rates better than the “naive” assumption of a random walk. The only exception is hyperinflationary situations, in which the monetary model roughly approximates the data, although it still does not give exact predictions (in hyperinflations, changes in money supplies, price levels, and nominal exchange rates tend to be of similar orders of magnitude).

The purchasing power parity (PPP) assumption has also fared badly in most empirical tests (see Rogoff 1996). Absolute PPP (the “law of one price”) is clearly false for most goods and services, except for a narrow range of heavily traded commodities such as gold. Relative PPP is routinely violated, since real exchange rates do not remain constant but tend to fluctuate widely and persistently over both short and medium time horizons (up to periods of several decades). Only in countries with hyperinflations do exchange rate changes approximate price increases, so that real exchange rates tend to remain relatively constant in the short run. Another exception concerns the interpretation of PPP as a long-run trend: stationarity tests conducted over extremely long time horizons (e.g., periods of a century or more) support a long-run version of PPP, by showing that real exchange rates do not persistently drift away from their mean levels—at least for a few major currencies for which such long time series are available (Lothian
and Taylor 1996). But such results are not necessarily robust (see, e.g., Rogoff 1996 on Argentina). Since deviations from relative PPP can persist for decades (i.e., real exchange rates can drift upward or downward or cycle around persistently), this assumption would appear to be a weak foundation upon which to rest a theory of short-run exchange rate determination, and hence it should not be surprising that the monetary approach gives such poor predictions.

In fact, all fundamentals-based models of short-term movements in exchange rates have essentially flunked the empirical test. None can consistently predict better than a random walk. And, in spite of the widespread belief that exchange rates are explained by some set of “fundamentals,” there is no agreement on what those fundamentals consist of. Indeed, some leading international finance scholars have concluded that

no model based on such standard fundamentals like money supplies, real income, interest rates, inflation rates and current account balances will ever succeed in explaining or predicting a high percentage of the variation in the exchange rate, at least at short- or medium-run frequencies. (Frankel and Rose 1995, pp. 1707-8)

Moreover, standard macroeconomic variables simply do not exhibit the degree of volatility that exchange rates have come to display under a floating rate regime, and it is difficult to believe (as the monetary approach model with rational expectations would require) that rapidly shifting expectations of future macro variables could explain such volatility.

More insight into what does determine exchange rate fluctuations comes from studies that have broken out of the model of macroeconomic fundamentals-based modeling. At least one prominent empirical study found persistent, self-generating “long swings” in the U.S. dollar exchange rate (Engel and Hamilton 1990), i.e., the dollar tends to drift in one direction for a sustained period of time rather than to just fluctuate randomly. Several studies have found evidence consistent with the hypothesis of rational speculative bubbles, although, by the nature of the phenomenon, no study can ever definitively “prove” a speculative bubble since “any test
for bubbles is based upon a posited model of fundamentals” as an alternative hypothesis (Frankel and Rose 1995, pp. 1708-9). These results suggest that floating exchange rates are functions of their own past values and that they are inherently unpredictable.

In contrast to conventional (fundamentals-based) macro models of flexible exchange rates, what Frankel and Rose (1995, p. 1710) call the “market microstructure” approach to exchange market psychology has generated much insight into actual movements in exchange rates. Surveys of currency traders show that they tend to have destabilizing, extrapolative expectations at short time horizons, although they tend to exhibit stabilizing, regressive expectations at longer horizons. Furthermore, survey evidence supports the commonsense conclusion that exchange rate expectations are heterogeneous, and there is no such thing as “the” expected future exchange rate (or rate of depreciation). Currency traders known as “chartists” use “technical analysis” that can lead to bandwagon effects that impart sustained momentum to current trends in exchange rates (Frankel and Froot 1990).

The upshot is that a more promising approach to exchange rates would be what Frankel and Rose (1995, pp. 1719-20) call a theory of “endogenous speculative bubbles,” in which bubbles (i.e., self-propagating movements) arise out of the short-run dynamics in the trading process itself, but eventually burst when they create macroeconomic disequilibria that are so severe as to force a realignment of expectations (so that fundamentals have some role in the long run, if only to limit the extent to which exchange rates can drift away from their theoretical equilibrium levels). This view is consistent with the conclusion of Taylor (2001), reached via a different route, that exchange rates should be treated as state variables rather than as market-clearing prices in open economy macro models. That is, at any given moment, the prevailing exchange rate is fixed and given by its own past evolution. The exchange rate then changes or
adjusts in response to a variety of factors, including pure exchange rate expectations (speculative behavior), risk-adjusted interest rate differentials (arbitrage behavior), news about policy shifts or political events (which affect investor confidence and risk premia), and the extent to which current exchange rates are perceived as sustainable or unsustainable in relation to macro fundamentals (e.g., the magnitude of current account deficits).

On this view, equation (3) above is also flawed, since no contemporaneous asset-market equilibrium condition can uniquely determine the exchange rate. According to Taylor’s (2001) stock-flow accounting scheme, all asset markets and the balance of payments should clear at any point in time through adjustments in interest rates, at any given exchange rate. While one could try to write down a dynamic function for \( \dot{S} = \frac{dS}{dt} \) following these principles, it should be clear that there would be no unique form for such a function, and that the parameters or weights attached to the different variables would be likely to vary over time and across currencies. There could also be strong nonlinearities, e.g., the response of the exchange rate to a large current account deficit or international debt could be different from the response to a small deficit or debt, possibly giving rise to chaotic behavior. Thus, while one could conduct interesting “what-if” dynamic exercises using this approach (i.e., by specifying a particular functional form for \( \dot{S} \)), one should not expect to arrive at a new set of deterministic predictions about exchange rate responses to macro policies or other fundamental factors based on this approach.

Before leaving this topic, it is important to note that one heterodox approach to long-run, real exchange rates has proven empirically promising. According to Shaikh and Antonopoulos (1998), long-run trends in real exchange rates for the U.S., Japan, and other countries approximate their relative real unit labor costs (i.e., real wages adjusted for productivity) compared with their trading partners. This approach leaves room for short-run deviations, which
the authors explain by periods of large net capital flows induced by interest rate differentials (but which could also be explained by speculative bubbles). Since relative real unit labor costs vary over time—increasing (decreasing) as a country becomes relatively less (more) competitive—this theory predicts that PPP should not generally hold even in the long run. Rather, countries that are becoming relatively more (less) competitive over time (e.g., because of relatively rapid productivity growth in tradable goods) should have depreciating (appreciating) real exchange rates. As a result, long-run exchange rate adjustments do not automatically operate to eliminate trade imbalances, but rather tend to perpetuate them (with surpluses in highly competitive economies and deficits in uncompetitive ones).

Shaikh and Antonopoulou's contribution is important for indicating a potentially fruitful direction for research on long-term trends in real exchange rates, and for undermining traditional notions that flexible exchange rates can be expected to adjust in order to maintain balanced trade. Nevertheless, their approach does not imply predictability of short-term movements in nominal exchange rates any more than the more traditional approaches (except in high-inflation situations). Moreover, their approach lacks a compelling story of what forces make the actual real exchange rate "gravitate" toward its long-run equilibrium trend. But their theory is important for presenting an alternative to the failed doctrine of purchasing power parity, as well as for rationalizing the persistent nature of global trade imbalances.

**Implications for Commodity Trade**

Once it is accepted that exchange rates are unpredictable, don’t follow fundamentals, and can deviate persistently from standard theoretical equilibrium levels (whether defined by PPP or
by balanced trade), the classical dichotomy between the real/trade and monetary/financial sides of international economics breaks down. With no guarantee that exchange rates will tend toward levels that would maintain balanced trade, chronic trade imbalances are likely to emerge. Indeed, while current account imbalances (and the counterbalancing net capital flows) tended to be small in relation to GDP in the Bretton Woods era of pegged exchange rates and capital controls, at least for the industrialized countries, such imbalances have grown larger and more persistent in the post-1973 era of flexible rates and capital mobility (Blecker 1997, 2002). Since the 1980s, a pattern has emerged in which the U.S. (sometimes accompanied by its NAFTA partners, Canada and Mexico) runs chronically large deficits, Japan (often accompanied by other Asian countries) runs chronically large surpluses, and the EU countries generally run somewhat smaller but also persistent surpluses. Most developing nations are normally net capital importers, and thus have trade deficits, except in the aftermath of financial crises in which capital inflows are cut off and trade surpluses result from the collapse of domestic demand (although current accounts, which also include net interest outflows, are less likely to run surpluses). Also, in spite of the fact that few developing countries have significant overall trade surpluses (outside of immediate post-crisis situations), some of them have had significant bilateral surpluses with the U.S. that have aggravated trade tensions (China, Mexico, and Taiwan are key examples).

These persistent trade imbalances reflect not only macroeconomic disequilibria, but microeconomic misallocation as well. Simply put, chronically imbalanced trade is not (and cannot be) comparative advantage trade. To see this point, consider the canonical version of the classical Ricardian trade model due to Dornbusch, Fischer, and Samuelson (DFS, 1977) depicted in Figure 1. DFS assume a “continuum of commodities” z arrayed on the interval [0,1] in decreasing order of home comparative advantage. The labor cost of one unit of each commodity
is $a(z)$ at home and $a^*(z)$ abroad. Assuming that labor is the only input for simplicity, and defining the relative productivity of home labor in producing commodity $z$ as $A(z) = a^*(z)/a(z)$, the home country has a comparative advantage in a good $z$ and exports it if $A(z) > \omega = W/\text{SW}^*$, where $\omega$ is the relative home wage ($W$ and $\text{W}^*$ are the home and foreign nominal wage rates, respectively).

To determine the equilibrium pattern of trade, DFS impose the twin assumptions of balanced trade and full employment. This is accomplished by assuming fixed labor supplies, $L$ and $L^*$, and postulating demand functions for the worker-consumers for each commodity $z$. For convenience, DFS assume constant (and equal) shares of expenditures by all consumers on each commodity. Skipping the technicalities, this leads to the function

$$B(z, \frac{L^*}{L}) = \frac{\phi(z)}{1-\phi(z)} \frac{L^*}{L}$$

in which $\phi(z)$ is the fraction of income spent on home goods when commodity $z$ is the borderline commodity between home exports and imports, and $B(*)$ is upward-sloping as shown in Figure 1. A comparative advantage equilibrium with balanced trade and full employment is reached at the point where $A(z)$ and $B(z)$ intersect, which yields the equilibrium borderline commodity $z_0$ and relative wage $\omega_0$. When the home country exports goods in the interval $[0, z_0)$ and imports goods in the interval $(z_0, 1]$, labor is allocated to its relatively most productive uses and production is globally efficient (which country exports the borderline good $z_0$ is arbitrary).

Now suppose we do not assume that labor is fully employed or that trade has to be balanced. In this case, (5) can no longer be relied upon to determine the actual pattern of trade. Suppose instead (following post-Keynesian or structuralist theory) that nominal wages are assumed to be determined by historical and institutional forces in each country, and do not
“clear” labor markets. Suppose also that the spot exchange rate $S$ is determined by the kind of autonomous financial-sector dynamics discussed in the previous section, and does not adjust to maintain balanced trade. Under these conditions, the relative wage is fixed at a given level $\bar{\omega}$ at any point in time, although it may change over time in accordance with a variety of factors including conditions in labor markets and financial markets, but with no necessary tendency to converge to a level that would ensure balanced trade with full employment.

Depending on the given level of $\bar{\omega}$, a country may have either a trade surplus or a deficit. Using the $B(\bullet)$ function as a benchmark for determining the balanced trade-cum-full employment point, there will be a range of goods in which trade does not follow comparative advantage. In the example shown in Figure 1, $\bar{\omega} > \omega_0$ and the actual borderline good is $\bar{z} = A^{-1}(\bar{\omega}) < z_0$, so that the home country has a trade deficit and imports goods in the interval $(\bar{z}, z_0)$ even though it has a comparative advantage in those goods and would export them if trade were balanced. If the country follows “free trade” policies, the industries that produce these goods will either shut down or operate at a loss, in spite of the fact that they are relatively “efficient” producers.

Thus, in a world characterized by financial liberalization and flexible exchange rates, trade liberalization does not necessarily lead to a globally efficient allocation of resources. Given institutional wage setting in each country, it would be necessary to have a managed exchange rate policy in order to set the relative wage at the level $\omega_0$ that would keep trade balanced and allow it to follow comparative advantage. Such an exchange rate policy would effectively equalize (trade-weighted) average unit labor costs across countries, so that no country could gain an overall or absolute competitive advantage. Ironically, in the absence of such an interventionist exchange rate policy, free trade must generally fail to deliver on its promise of promoting an efficient pattern of international specialization.

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Furthermore, if such a managed exchange rate policy cannot be implemented, it is hard to quarrel with the protectionist demands of relatively efficient industries that face intensified import competition as a result of an “overvalued” exchange rate. Free traders can complain about the high “consumer costs” of such protection, but when the import surges result from an overvalued currency, the protection merely offsets a previous windfall gain to consumers of the artificially cheap imports. Unfortunately, while protection can help to rescue adversely affected industries, it is not a globally progressive strategy because it only protects workers in one country at the expense of workers in other countries. If the global economy suffers from depressed aggregate demand and systematically misaligned exchange rates, as it does today, protecting industries impacted by overvalued currencies attacks the symptoms of those industries’ problems but not their root causes.

This phenomenon of autonomous exchange rate movements driving trade balances into disequilibrium has been nowhere more apparent than in the U.S. economy since the 1980s (see Blecker 1999a). As Figure 2 shows, there have been two major episodes of real dollar appreciation during this period, one in the early 1980s and another in the late 1990s. Each time, with roughly a two-year lag due to the well-known J-curve effects, a soaring trade deficit has resulted (in the latter episode, this was augmented by other factors, especially the mismatch between the economic boom in the U.S and the depressed economic conditions abroad, especially in Asia). Each time, the corresponding increases in net capital inflows have not only financed the trade deficit, but actually pushed the dollar to ever-rising heights in spite of the damage to the current account. In 1985, the dollar finally fell, but only after policy announcements and international agreements that effectively punctured the speculative bubble that had built up. As of this writing (in November 2001), the dollar has still not reversed its
(somewhat smaller) rise of the late 1990s, in spite of record-breaking trade deficits, the collapse
of the stock market bubble, the outbreak of a recession, and even the September 11 terrorist
attacks. Not surprisingly, this period of dollar overvaluation has led to renewed protectionist
pressures from affected industries, most notably the steel industry which has filed massive
numbers of “unfair trade” cases since the dollar began to rise (and foreign economies began to
collapse) in the late 1990s, and which successfully pressured the Bush administration to file for
escape clause (section 201) relief from imports earlier this year.

Of course, the DFS Ricardian model requires yet more modifications to be made relevant
to contemporary international trade. Leaving aside Heckscher-Ohlin conundrums about factor
proportions, the Ricardian framework can be augmented by including “technology gap” goods,
or products in which a country has an absolute technological advantage or disadvantage, along
the lines suggested by Dosi, Pavitt, and Soete (1990). 21 In such goods (e.g., commercial jet
aircraft), only a small number of countries can produce them at any cost, and the $A(z)$ ratio is
undefined. Each country will be an exporter of any such goods that it can produce, and an
importer of any of them that it cannot produce, regardless of relative wages (although, for well-
known reasons first suggested by Vernon (1966), the high-wage countries are likely to be the
innovators and to export the technologically innovative products). For completeness, primary
products whose production is limited by geography (location of mineral deposits or special
climactic conditions) can also be included as goods whose trade is independent of relative labor
costs. This suggests that the potential range for comparative advantage trade (i.e., trade based on
relative labor cost advantages) should be restricted to the interval $[z_1, z_2]$, as shown in Figure 3,
with goods between 0 and $z_1$ exported due to absolute technological or geographic advantages
and goods between $z_2$ and 1 imported due to absolute disadvantages. If a country has a
preponderance of either absolute advantage or absolute disadvantage goods, it will shift the theoretical free-trade equilibrium point along $A(z)$ to the left or right, respectively. Thus, for example, an innovative economy in which the $[0, z_1)$ interval is relative large (i.e., $z_1$ is relatively high) would have a balanced trade point relatively closer to $z_1$, implying that it would be a net importer of Ricardian commodities with balanced trade, and conversely for a follower economy in which the $(z_2,1]$ interval is relatively large. Institutionally determined wages and financially determined exchange rates would then set $\omega$ and determine the actual dividing line $z$ between exports and imports, which could then imply imbalanced trade and further deviations of international specialization from comparative advantage-based predictions.\textsuperscript{22}

Although financial globalization does not play a direct role in this version of the absolute advantage story, capital mobility and globalized production in a broader sense—including foreign direct investment, technology transfer, and outsourcing\textsuperscript{23}—certainly affect the relative productivity locus $A(z)$. While the traditional Ricardian model assumes that the underlying labor coefficients $a(z)$ and $a^*(z)$ are based on indigenous technology and natural resources, in the modern world these coefficients are often the result of multinational corporate operations in a “host” country. In particular, the combination of liberalized trade and finance (along with the revolutions in communications and transportation technology) encourages firms to locate labor-intensive operations in relatively low-wage countries, provided that minimal thresholds of property rights, infrastructure, education, etc. are met (but not, one should note, minimal thresholds of labor rights, environmental protection, or other social standards unrelated to private profitability).

When multinational firms enter (or license technology to local firms or subsidiaries), local producers in the host country are able to produce with state-of-the-art production methods
and close to industrial-country productivity levels in those industries. This tends to pull the left-hand side of the $A(z)$ locus up, so that $A(z)$ shifts in an export-biased direction and the dividing commodity $\overline{z}$ increases for any given $\overline{\omega}$. Based on our previous arguments, $\overline{\omega}$ is unlikely to adjust in an offsetting direction in the absence of deliberate exchange rate management—or unless increased labor rights allow workers in the capital importing country to win wage increases in step with their productivity gains. This sort of technology transfer is a possible explanation of the chronic trade surpluses observed in bilateral trade between certain newly industrializing countries and the U.S., if not globally. Such trade is driven by absolute advantages—the ability to combine relatively high productivity with relatively low wages—not by comparative advantages (where low wages are proportional to low average productivity). Not to mention, such trade is likely to offer increased profit margins for global companies, who can lower their unit labor costs substantially without necessarily reducing their prices to industrial country consumers due to the combination of oligopsony power in the producing (exporting) countries’ labor markets and oligopoly power in the consuming (importing) countries goods markets.

Although financial globalization is not a direct cause of these sorts of absolute advantage-based trade, financial liberalization does contribute to these transformations in the nature of international trade in several ways. First, as noted earlier, financial liberalization prevents flexible exchanges rates from adjusting to balanced-trade equilibrium levels. Flexible exchange rates that are governed by independent dynamics in asset and currency markets are likely to produce relative wages that result in chronically imbalanced trade based on absolute cost advantages. Second, financial liberalization greatly facilitates the mobility of productive capital, technology, and “footloose production” around the globe, which in turn alters countries’
international competitive positions (and also creates various sorts of social externalities and adjustment costs). Multinational corporations that produce or outsource abroad take advantage of open financial markets to shift funds to their most profitable locations. It is no coincidence that corporate interests have pressed hard for prohibitions on capital controls along with more general protection of property rights (both pecuniary and intellectual) in international trade agreements like NAFTA and the WTO, even though such measures fall outside the traditional domain of trade policies. Finally, maintaining open capital markets gives foreign investors and multinational corporations an “exit option” which keeps pressure on host countries to maintain social and economic conditions favorable to foreign capital (e.g., lax enforcement of labor rights and environmental standards, special tax breaks, etc.)

A Final Word on International Adjustment

Before concluding, it is important to note that the sorts of chronic trade imbalances due to misaligned real exchange rates (relative wages) and absolute competitive advantages discussed here do result in significant economic adjustments, but not of the type contemplated in orthodox theories of flexible exchange rates. In the long run, what adjusts are the output levels or growth rates of the countries, rather than the real exchange rates or relative wages and prices. This result has been repeatedly demonstrated by post-Keynesian economists utilizing the “balance of payments constrained growth” model pioneered by Thirlwall (1979). Without going into the technical details here, the model implies that countries that would otherwise run chronic trade deficits are forced to slow their growth in order to curb those deficits to levels that are consistent with sustainable net capital inflows, while countries that would otherwise run chronic surpluses
are permitted to increase their growth accordingly.\textsuperscript{25} While earlier econometric tests of this hypothesis have been criticized on various grounds, the most convincing new evidence comes from a recent paper by Alonso and Garcimartín (1998-99). Using modern time-series methods and simultaneous equations methods applied to data for several industrialized countries, these authors show that output levels adjust significantly to offset trade imbalances, while relative prices of exports and imports (which incorporate exchange rates) do not. In effect, this means that adjustment in a deficit country is normally achieved not by lowering the relative wage, as implied by the classical model, but rather by reducing national income and economic growth in order to curb demand for the imported goods on the interval \((z, 1]\).

This leads to a final point about real exchange rate adjustment. There are really two parts to the orthodox view on this matter: (1) that real exchange rates should adjust in the right direction to offset trade imbalances, i.e., appreciating in surplus countries and depreciating in deficit countries; and (2) that these real exchange rate adjustments have significant effects in reducing the trade imbalances through their effects on the relative prices of exports and imports (assuming the famous Marshall-Lerner elasticities condition). In this author’s view, part (1) of this argument is invalidated by what we have learned about the actual behavior of flexible exchange rates in a world of globalized finance. Exchange rates that are governed by autonomous financial market dynamics and self-fulfilling speculative expectations do not generally move in directions that would help to balance trade. Nevertheless, this does not necessarily mean (as some critics of orthodox economics have claimed) that exchange rate changes do not have significant real effects on trade balances when they do occur. While there are many well-known qualifications, real depreciations (i.e., depreciations that are not offset by increased domestic prices) can and often do have significant positive effects on the trade balance.
while real appreciations have the opposite effects, as Figure 2 shows graphically for the United States. This may not be the case for all countries, especially developing countries where heavy dependence on imports can lead to inflationary effects of devaluation that nullify the real competitive gains, especially where strong labor movements engage in “real wage resistance” by raising nominal wages to offset higher prices (see Dornbusch 1980). And the Marshall-Lerner elasticities also vary across countries, suggesting that relative price effects are more important under some structural conditions than others. But the potential for real exchange rate changes to serve an equilibrating function (and possibly to serve as a substitute for growth adjustments) cannot be lightly dismissed; my argument is that such changes would have to be steered by conscious exchange rate management, and will not generally occur if exchange rates are simply allowed to float (or if they are rigidly pegged in nominal terms).

Conclusions

The argument in this paper suggests that large parts of conventional international theory, both in the trade and finance branches, need to be abandoned for inconsistency with the realities of globalized finance in today’s world economy. Moreover, the very separation of these two branches becomes problematic when there is no automatic adjustment mechanism for the trade balance, and hence the microeconomic pattern of trade (international specialization) is not independent of macroeconomic policies, monetary factors, and financial behavior. Money is not neutral when nominal exchange rates determined by autonomous financial dynamics affect real trade flows.
This conclusion raises difficult issues for the analysis of economic policy in the global economy. The conventional arguments for liberalization of both commodity trade and capital markets rest upon the very theories which I have argued here to be untenable. If countries follow the “Washington Consensus” policies of trade and financial liberalization, they are exposing themselves to great risks of economic instability and worsened inequality without guaranteeing themselves the supposed efficiency gains from such policies of openness. This does not imply a justification for blanket protectionism or completely closed capital markets, but it does suggest that policy analysis should be refocused on the specific consequences of selective types of openness, particular forms of regulation, etc., rather than on all-or-nothing arguments about free-trade-versus-protection or financial-liberalization-versus-financial-repression. The optimal set of policies is likely to vary by country, rather than to come in a cookie-cutter model imported from Washington. And, ironically, one currently disfavored type of policy intervention—deliberate management of exchange rates to target more balanced trade patterns—may be essential for promoting a more stable, prosperous, and equitable global economy.
Notes

1 See International Monetary Fund, World Economic Outlook, October 2001.
2 See Hallwood and MacDonald (1994) and Blecker (1997, 1999b, 2002) for discussion and citations of the relevant literatures.
3 See Blecker (2003, forthcoming) for a critique of the trade-finance dichotomy from a post-Keynesian perspective.
4 In the specie-flow story, a country with a trade surplus has a net inflow of gold, which could be modernized to foreign exchange reserves. In the absence of sterilization, the increased reserve assets (gold or foreign exchange) cause the money supply to increase, which (assuming the quantity theory of money) increases the price level. As the price level increases, the country’s goods become less competitive (at a fixed exchange rate), and the trade balance decreases until balanced trade is reached and the reserve inflows cease. In a more Keynesian variant, the inflows of monetary reserve assets cause the interest rate to fall, which stimulates investment demand. The rise in investment then boosts national income through the multiplier mechanism, but higher national income leads to increased import demand, which reduces the trade surplus until again balanced trade is reached. Both stories can be told in reverse for countries with initial trade deficits. See Robinson (1946-47) for a critical discussion of automatic adjustment mechanisms.
5 See, e.g., Burtless et al. (1998).
6 Of course, in the Ricardian model, relative wages will always be lower than relative productivity in a country’s export sectors and higher in import sectors, but this is merely the law of comparative advantage at work. This point is discussed in greater depth below. See Burtless et al. (1998) and Krugman and Obstfeld (2000) for the conventional view, and Blecker (1992) and Larudee and Koechlin (1999) for critiques.
7 See note 4, above.
8 See views of the Republican Commissioners in the report of the U.S. Trade Deficit Review Commission (2000), and testimony of witnesses such as John Makin and Daniel Griswold (hearing of August 19, 1999) available on the Commission’s website at www.ustdr.c.gov.
9 This section draws on the author’s previous work in Blecker (1999b, pp. 10-37), which also discusses other arguments for capital market liberalization (i.e., enhancing financial services and disciplining economic policy makers). Permission of the Economic Policy Institute to re-use this material is gratefully acknowledged.
10 Of course, the allocative efficiency gains from capital mobility can also be offset by more standard types of negative externalities, such as increased pollution or environmental degradation. For example, foreign capital may flow into projects that require excessive deforestation or that cause severe soil erosion. In theory, the optimal response to such distortions is to use domestic taxes or subsidies, rather than restricting trade or capital flows. But in practice, such ideal policies are often more difficult to implement than “second-best” trade or capital restrictions.
11 Thus, any econometric test of UIP is really a test of the joint hypothesis that UIP holds and that the postulated expectations process governing \( \Delta s^e \) (e.g., rational expectations) is correct.
12 In addition to the simplifying assumptions stated above, the standard model also assumes an exogenous money supply set by the central bank, i.e., the monetary authority targets a monetary
aggregate rather than the interest rate. In the small country version, the foreign interest rate $i^*$ is taken as exogenously given, but in the large country version both $i$ and $i^*$ are endogenous and certain restrictions (especially on the size of repercussion effects) have to be assumed in order to get the standard results. See Dornbusch (1980) for a classic exposition.

The well-publicized case of the U.S. dollar appreciating following the Reagan fiscal expansion of the early 1980s appears to be an exception, not the rule. In the U.S. in the late 1990s, the dollar appreciated following a fiscal contraction (Clinton's budget deficit reduction plan and the ensuing budget surpluses) and relative monetary ease (Greenspan's conversion to New Economy optimism, which induced him to keep interest rates down while unemployment fell to 4%). Bosworth (1993) found that the U.S. dollar exchange rate was unique in responding strongly to the home-foreign interest rate differential; most other currencies did not exhibit this behavior, or did so only weakly. This finding undermines one of the key postulates of the Mundell-Fleming approach.

This simple version is covered by Dernburg (1989) and Hallwood and MacDonald (1994), who attribute it to Branson (1977). See Branson and Henderson (1985) for a more complete survey of model extensions.

One recent study (Alonso and Garcimartín 1998-99) finds that relative prices (real exchange rates) do not adjust significantly in response to trade imbalances, while output levels (growth rates) do—in accordance with the post-Keynesian view of “balance of payments constrained growth,” and contrary to what one would expect from portfolio balance. The implications of this study are discussed further below.

Bleaney and Mizen (1996) have found that real exchange rates of certain major currencies tend to remain within wide bands around their mean (purchasing power parity) levels, but this finding does not explain the persistent movements of exchange rates within those wide bands.

Taylor argues that traditional fundamentals-based models such as Mundell-Fleming and portfolio balance are based on incomplete accounting of stock-flow relationships and balancing conditions. When these are taken into account, the Mundell-Fleming view becomes untenable because the balance of payments always clears (at any given exchange rate) when all other asset markets clear, and hence cannot be used as an independent constraint or separate equilibrium condition to determine the exchange rate. Furthermore, the portfolio balance view is also untenable, because when asset market equilibrium conditions are fully specified, it becomes implausible to allow the exchange rate to adjust instantaneously since it is necessary to assume a given exchange rate in order to determine a country’s net foreign asset position (and the converse would not make sense).

See Taylor (2001) for some exercises of this nature, using the (admittedly unrealistic) assumption of UIP combined with myopic perfect foresight, i.e., the expected exchange rate equals the actual exchange rate.

Even if wages do respond to labor supply and demand conditions, it should be noted that most workers in most countries are employed in the production of nontraded goods and services, and hence wages would be influenced by labor market conditions in those industries as well as in the traded goods and services sectors. Thus, even a market-clearing wage would not necessarily be a trade-balancing wage.

This is done for illustrative purposes only, since this function rests on very strong assumptions including identical homothetic preferences of consumers which imply constant, equal shares of
expenditures on each good. Also, in a more complex model, one would have to take into account the distribution of income and the expenditure patterns of different classes of income earners.  

22 Dosi et al. (1990) argue that the highly innovative countries will tend to have high wages, thus leading to increasing global inequality or uneven development between the technological leaders and followers.


24 See, e.g., Shaiken 1990 on foreign auto plants in Mexico.

25 See McCombie and Thirlwall (1994) and McCombie (1997) for surveys of the earlier literature and empirical studies. Simpler versions of this model tend to assume that trade must be balanced in the long run, but there are extensions that allow for long-term net capital flows, most recently the work of Moreno-Brid (1998-99). See also Blecker (1998) for a version of the model that links the balance of payments constraint to relative wages, and which also compares post-Keynesian and neoclassical adjustment processes.

26 Conventional studies like Cline (1989) generally find price elasticities that satisfy the Marshall-Lerner condition for most countries. However, Alonso and Garcimartín’s results based on a simultaneous equations method suggest that elasticity pessimism may be warranted in a number of countries.

27 See Blecker (1999b) for a discussion of alternative proposals for managed exchange rates.
References


Figure 1
Figure 2
The U.S. Trade Deficit and Real Exchange Rate, 1979-2000
Figure 3

\[ A(z) \]

\[ \omega \]

\[ \bar{\omega} \]

0 \hspace{2cm} Z_1 \hspace{2cm} \bar{z} \hspace{2cm} Z_2 \hspace{2cm} 1 \hspace{2cm} z \]