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## On Global Currencies

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### Abstract

I approach the state of global currency issues by identifying eight concepts that I see as having recently “peaked” and eight more that I see as currently rising in relevance. Those that I see as having already seen their best days are: the G-7, global savings glut, corners hypothesis, proliferating currency unions, inflation targeting (narrowly defined), exorbitant privilege, Bretton Woods II, and currency manipulation. Those that I see as receiving increased emphasis in the future are: the G-20, the IMF, SDR, credit cycle, reserves, intermediate exchange rate regimes, commodity currencies, and multiple international currency system.

In International Monetary Economics our exam questions remain the same over time. Only the answers change, from decade to decade. Although it may violate our self-image as scientists, it is hard to deny that our field has an element of cycles and fads that one associates more often with the financial world or even the fashion world. Currency boards were as popular in the 1990s as they were unknown ten years earlier. And so, with apologies, this lecture is structured in terms of “What’s Hot” and “What’s Not.” Specifically, I am nominating eight concepts, all of which were virtually conventional wisdom a short time ago, for my list of what is now “Out.” Then I nominate eight concepts, which might generally be described as having been “out” a few years ago, for my list of what is now “In”.

We take first the list that I choose to designate as “Out.” In some cases, I am tolling the bell for an idea that has recently died. In others, I am attempting an avant-garde prediction of what the next few years might bring, without necessarily expecting others to agree.

### **Part I: What’s “Out”?**

#### **1. The G-7.**

The G-7 (Group of Seven) world leaders first met to ratify the de facto move to floating rates at Rambouillet, France, in 1975. G-7 finance ministers cooperated to bring down a stratospheric dollar in 1985 and then again to halt the dollar’s depreciation in 1987, in agreements that were generally associated with the Plaza

Hotel and Louvre, respectively.<sup>1</sup> With these events, the G-7 became the most important steering group of the world monetary system. But the membership became increasingly anachronistic. The addition of Russia to the G-8 leaders group was much too little, and also too late. The failure to incorporate China and other major developing or emerging market countries has now rendered the G-7 out-of-date. What can finance ministers hope to accomplish by discussing the currency of a country that is not at the table?

## 2. Global saving glut

From 2001 to 2008 economists carried on a debate under the name of “Global Current Account Imbalances.”

- a. On one side of the debate were those who argued that US current account deficits had their origins domestically (in low national saving rates), were unsustainable, and would eventually bring about an abrupt depreciation of the dollar (Blanchard, Giavazzi and Sa, 2006; Chinn, 2005; Obstfeld-Rogoff, 2001, 2005; Feldstein, 2007; Frankel 2007b; Roubini, 2004; Summers, 2004...).
- b. On the other side were a host of counterarguments. They tended to take off from the starting point that it “takes two to tango;” decisions by foreigners to invest in the US are as much a part of the story as US decisions to borrow. One of the counterarguments was that the current account imbalances had their origin in a glut of saving in Asia and other foreign countries. The proponents of the saving glut hypothesis pointed to low real interest rates, which admittedly needed explaining (Bernanke, 2005; Clarida, 2005). The opponents of the hypothesis pointed out that global saving had not in fact risen, at least as reflected in the statistics. (Some of the other counterarguments to the sustainability view are discussed below, under the rubrics of exorbitant privilege and Bretton Woods II.<sup>2</sup>)
- c. The crisis of 2007-2009 has not resolved the debate. The reaction of the first side is that this is the crisis they were warning of. The response of the second side is the savings glut caused the crisis.
- d. Regardless who is right about the last 8 years, it is perhaps easier to make a prediction regarding the next 8 years: national saving will fall globally. In the short run, governments are responding to the most severe recession in 70 years by increasing their budget deficits. In the long run, the spending needs created by the increased retired population and rising medical costs will continue to reduce saving, both public and private. In response, long-term real interest rates should rise, from the recent low levels. On these grounds, I declare the savings glut dead.

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<sup>1</sup> Several qualifications: First, concerted sales of the dollar in the foreign exchange market dated from January of 1985, 9 months before the Plaza. Second, the Plaza club included only the G-5. Third, the G-7 attempt at the Louvre to put a floor under the dollar failed, and only a subsequent attempt later in 1987 apparently succeeded. Dominguez and Frankel (1993, pp. 11-18) .

<sup>2</sup> Frankel (2007b). I count eight distinct lines of attacks on the unsustainability hypothesis.

### 3. Corners Hypothesis

Perhaps by now the demise of the corners hypothesis is widely known. If not, it might be because of its use of various aliases: bipolarity, the missing middle...

- a. The corners hypothesis was the proposition that countries are—or should be—moving to the corner solutions in their choice of exchange rate regimes. They were said to be opting either, on the one hand, for full flexibility, or, on the other hand, for rigid institutional commitments to fixed exchange rates, in the form of currency boards or full monetary union with the dollar or euro. It was said that the intermediate exchange rate regimes were no longer feasible. They were to go the way of the dinosaurs. A corollary of this theory was that the number of independent currencies in the world was declining, as 185 currencies consolidated in a much smaller number of big currency blocs.
- b. The earliest known explicit reference to the corners hypothesis is by Eichengreen (1994).
  - i. The context was not emerging markets, but rather the European exchange rate mechanism (ERM). In the ERM crisis of 1992–1993, Italy, the United Kingdom, and others were forced to devalue or drop out altogether, and the bands had been subsequently widened substantially so that France could stay in. This crisis suggested to some that the strategy that had been planned previously—a gradual transition to the EMU, where the width of the target zone was narrowed in a few steps—might not be the best way to proceed after all. Crockett (1994) made the same point. Obstfeld and Rogoff (1995) concluded, “A careful examination of the genesis of speculative attacks suggests that even broad-band systems in the current EMS style pose difficulties, and that there is little, if any, comfortable middle ground between floating rates and the adoption by countries of a common currency.” The lesson that “the best way to cross a chasm is in a single jump” was seemingly borne out subsequently, when the leap from wide bands to EMU proved successful in 1998–1999.
  - ii. After the East Asia crises of 1997–1998, the hypothesis of the vanishing intermediate regime was applied to emerging markets. In the effort to “reform the financial architecture” so as to minimize the frequency and severity of crises in the future, the proposition was rapidly adopted by the financial establishment as the new conventional wisdom.
  - iii. For example, Summers (1999):

“There is no single answer, but in light of recent experience what is perhaps becoming increasingly clear—and will probably be increasingly reflected in the advice that the international community offers—is that in a world of freely flowing capital there is shrinking scope for countries to occupy the middle ground of fixed but adjustable pegs. As we go forward from the events of the past eighteen months, I expect that countries will be increasingly wary about committing themselves to fixed exchange rates, whatever the temptations these may offer in the short run, unless they are also prepared to dedicate policy wholeheartedly to their support and establish extra-ordinary domestic safeguards to keep them in place.”

- iv. Other high-profile examples include Eichengreen (1999, p.104-105), Fischer (2001) Minton-Beddoes (1999), and Council on Foreign Relations (1999, p.87). The G-7 Finance Ministers [them again!] agreed that the IMF should not in the future bail out countries that get into trouble by following an intermediate regime, though it qualified the scope of the generalization a bit, for example, by allowing a possible exception for “systemically” important countries.
- v. It is not only the international financial establishment that decided intermediate regimes were nonviable. The Meltzer report, commissioned by the US Congress to recommend fundamental reform of international financial institutions, adopted the proposition as well: “The Commission recommends that ...the IMF should use its policy consultations to recommend either firmly fixed rates (currency board, dollarization) or fluctuating rates” (Meltzer 2000, p.8). The *Economist* (1999, p.15-16) was thus probably right when it wrote that “Most academics now believe that only radical solutions will work: either currencies must float freely, or they must be tightly tied (through a currency board or, even better, currency unions).”
- c. The proposition was never properly demonstrated, however, either theoretically or empirically. The collapse of Argentina’s convertibility plan in 2001 probably marked the beginning of the end. Today, it is clear that most countries continue to occupy the vast expanse in between floating on the one hand and rigid institutional pegs on the other hand, and it is much less common that one hears that intermediate regimes are a bad choice generically.<sup>3</sup>

#### 4. Proliferating currency unions

The successful attainment of European Monetary Union ten years ago was truly historic. In many ways, the skeptics (especially American economists) were proven wrong. The January 1999 disappearance of 11 national currencies took place without a hitch and the first five eastward additions also went smoothly. After some early bumps, the euro established a reputation for strength and the ECB established a reputation for rectitude – with members of the board voting in what they see as the European best interest rather than for national constituencies. In some other parts of the world, dormant regional solidarity movements perked up.

- a. Inspired in large part by the European example, monetary integration was actively discussed in such areas as East Asia, the Gulf, and Africa (especially within West, Southern, and East Africa, respectively). The Gulf Cooperation Council set a date of 2010 for adoption of a common

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<sup>3</sup> Every year I give a lecture on exchange rate regimes at the IMF Institute. Ten years ago, when I polled the attending IMF staff, a majority said they considered the corners hypothesis to be conventional wisdom at the IMF. In the years since then, the vote count has steadily declined. Now none of the audience believes that it is conventional wisdom in their institution.

currency. The perceived proliferation of currency unions was one component of the aforementioned corners hypothesis.

- b. Now, just as EMU has celebrated its 10th birthday, the bloom is off the rose. In euroland, some of the drawbacks that the skeptics had warned about have recently come true after all. First, the Stability and Growth Pact proved utterly unenforceable. Second, forcing Dublin to have the same interest rate as Frankfurt has proven difficult indeed. (Perhaps “asymmetric shocks,” belongs on the list of “What’s In”.) Excessively easy monetary policy helped carry Ireland from Celtic Tiger to real estate bubble, and arguably is the direct cause of the severe recession that the country is now experiencing. Third, Central and Eastern Europe has been the worst hit by the recent international crisis.
- c. Whether one scores the promotion of intra-euroland trade as a “plus” or a “minus” for the euro depends on one’s reference point. On the one hand, econometric estimates like those reported in Table 1 show a significant effect of 15% over the first 8 years of the euro (and with no trade diversion) -- a better outcome than would have been expected before 1999. On the other hand, these estimates fall far short of the doubling or tripling found in data from earlier smaller currency unions in Rose (2000) and successor papers.<sup>4</sup>
- d. Meanwhile, the proposals for monetary integrations in other regions have gone nowhere. The one that seemed most on track, in the Gulf, survived the blows of an Omani demurrer and Kuwaiti revaluation, but could not withstand the direct hit by the United Arab Emirates when it withdrew in May 2008. It may be some time before the world sees another new currency union.

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<sup>4</sup> In Frankel (2009) I present updated estimates of the euro’s trade effect, list three hypotheses to explain the gap, and present evidence against each of the three. In other words, the gap remains a mystery.

Table 1 -- Update: € effect continues strong, 2001-2006

EMU Impact on Trade - Includes Data from 1992 - 2006.  
Includes Year and Country-Pair Fixed Effects.

	EU Sample	
	Coefficient	Std. Error
EMU2 - 1993	-0.0137	0.0352
EMU2 - 1994	-0.0060	0.0352
EMU2 - 1995	-0.0113	0.0352
EMU2 - 1996	-0.0132	0.0352
EMU2 - 1997	0.0007	0.0352
EMU2 - 1998	0.0453	0.0352
EMU2 - 1999	0.0707	0.0358 **
EMU2 - 2000	0.0719	0.0358 **
EMU2 - 2001	0.1621	0.0355 ***
EMU2 - 2002	0.1306	0.0354 ***
EMU2 - 2003	0.1334	0.0354 ***
EMU2 - 2004	0.1507	0.0354 ***
EMU2 - 2005	0.1385	0.0354 ***
EMU2 - 2006	0.1450	0.0354 ***
Log of Product of Real GDPs	0.4090	0.0341 ***
Free Trade Agreement	-0.0669	0.0232 ***
EU	(dropped)	
EU Trend	-0.0019	0.0015
Real Exchange Rate of Country 1	0.0006	0.0029
Real Exchange Rate of Country 2	0.0074	0.0024 ***
Observations	1170	
Within R <sup>2</sup>	0.999	
Between R <sup>2</sup>	0.804	
Overall R <sup>2</sup>	0.929	17

Effect becomes significant in 1999 →  
Reaches 16% in 2001 →  
Steady through 2006 →

\* significant at the 10% level; \*\* significant at the 5% level; \*\*\* significant at the 1% level

Source: Frankel (2009a)

### 5. Inflation targeting (narrowly defined)

By the 1970s, two equations had come to dominate monetary theory. One was the supply relationship connecting output (relative to potential) and inflation (relative to expectations). The other was the money market equilibrium condition, connecting the money supply to the price level. To be sure, many Ph.D.s and tenure promotions were earned by derivation of such equations from intertemporal optimization, but for quite awhile the bottom line did not change.

- a. An implication of the expected inflation term in the supply relationship was that governments could attain lower inflation, without output cost, if the anti-inflationary credibility of central banks was assured by commitment to a nominal anchor. But what choice for nominal anchor? At the beginning of the 1980s, the money supply became the anchor of choice, at least for the world's most important central banks [Fed, Bundesbank, Bank of Japan, and Bank of England], in their efforts to disinflate. But large velocity shifts soon discredited this choice.<sup>5</sup>
- b. By the time developing countries were ready to disinflate, the exchange rate was the anchor of choice, with Argentina in 1991 traveling the longest

<sup>5</sup> Even Milton Friedman, before he passed away, admitted that the money demand function had proven too unstable to rely on as the bedrock of monetary policy.

distance, from hyperinflation to quasi-currency-board. By the end of the 1990s, however, exchange rate targeting for medium-sized countries had in turn become discredited, by the currency crises in Mexico (1994), East Asia (1997-98), Russia (1998), Brazil (1999), Argentina (2001) and Turkey (2002). For one thing, holding the economy hostage to the dollar during a period when the dollar appreciated strongly was as difficult as holding the economy hostage to M1 when the demand for money had increased in the 1980s [or hostage to gold in the 19<sup>th</sup> century]. If the 1980s were the decade of M1 and the 1990s were the decade of the exchange rate peg, then this past ten years has been the decade of inflation targeting.<sup>6</sup>

- c. Inflation targeting narrowly defined would have central banks committing to annual inflation targets and being judged solely by their ability to hit those targets. “Flexible inflation targeting” allows central banks to target output, in addition to inflation. Indeed John Taylor and Michael Woodford, in reaction to the instability of money demand, wrote the money supply out of the play altogether. The Taylor Rule told central banks to set the interest rate directly in response to output and inflation. So far as I know, however, virtually all forms of inflation targeting tell central banks to focus on the CPI. The orthodoxy says:
- i. Pay no attention to asset prices, except to the extent it foretells future inflation, and
  - ii. Pay no attention to the exchange rate, except to the extent that it foretells future inflation. The CPI focus also says not to accommodate terms of trade shocks:
  - iii. Pay no attention to export prices, except to the extent these goods are also consumed. Producers of oil or other minerals, for example, should pay little attention to the world price of their commodity. If dollar oil prices go up, as they did during much of the decade, the oil producing countries should not allow the improvement in their terms of trade to show up as an appreciation of their currency, for this would put downward pressure on their CPI. If oil prices fall, as at the end of 2008 [or in 19997-98], they should not allow the worsening of their terms of trade to show up as a depreciation, for this would put upward pressure on the CPI.
  - iv. If interpreted literally, CPI targeting also tells central banks to fight supply shocks. Pay no attention to fluctuations in world prices of your imports. It tells oil importers, for example, that if dollar oil prices go up by X%, they should contract monetarily so as to appreciate the currency by the same X%; anything less will result in higher local-currency oil prices and thus a higher CPI. If dollar oil prices go down by Y%, they should expand monetarily so as to depreciate the currency by the same Y%; anything less will result in lower oil prices and thus a lower CPI.

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<sup>6</sup> Among many references, three of the internationally prominent ones are: Svensson (1995), Bernanke, Laubach, Mishkin, and Posen (1999); and Truman (2003).



- v. This advice to appreciate in response to negative terms of trade shocks and depreciate in response to positive terms of trade shocks is the opposite of textbook common sense. Admittedly, terms of trade shocks are far less important for large countries such as the US or euroland than for small open commodity-producers. Admittedly, too, proponents of inflation targeting almost never want to target the “headline CPI;” they admit the need for an escape clause, either ex ante or ex post. But this undercuts the purpose of a transparent nominal anchor.
- d. Why is inflation targeting on my list of concepts that are slated for the dust heap? This cavalier-sounding dismissal of conventional wisdom is probably the most controversial of my claims. I have three reasons for it.
  - i. First, the injunction to pay no attention to the exchange rate is one that none but a dozen or so committed floaters have been able to live by. Calvo and Reinhart (2002) coined “fear of floating” to capture that most countries that say they float, don’t really. Rather they feel the need to intervene to moderate fluctuations in the demand for their currencies. Declared inflation targeters do this even when there is no threat to the CPI. It’s not just that the variability of reserves is substantially greater than zero for those who say they float, in the way that the variability of exchange rates of those who say they peg is substantially greater than zero. The amazing finding of Calvo and Reinhart (2002) is that the variability of reserves/ relative to the variability of exchange rates is generally no smaller for self-declared “floaters” than for supposed “fixers”!
  - ii. Second, although most monetary economists ten years ago went along with Alan Greenspan’s doctrine that it is hopeless to try to identify and prick speculative bubbles in stock markets and real estate markets while they are in progress, and that cutting interest rates after they crash is enough to protect the economy, recent experience has changed a lot of minds.
  - iii. Third, choosing the CPI as the price index of interest is needlessly destabilizing to the international accounts for countries where terms of trade shocks are important. An alternative price index such as the PPI or an index of export prices would more appropriately accommodate fluctuations in the terms of trade.  
[more below]

## 6. Exorbitant privilege

Among those who have argued that the US current account deficit can be sustained without a major depreciation of the dollar, besides the savings-glutters, are various proponents of the view that the US will continue to enjoy the unique privilege of being able to borrow virtually unlimited amounts in its own currency.

- a. When does this “privilege” warrant the label “exorbitant?” Presumably the privilege is exorbitant if it accrues to the United States solely because

of size and/or history, without the country having done anything to earn the benefit through virtuous policies such as budget discipline, price stability, and a stable exchange rate. Since the 1970s, the United States has racked up \$10 trillion in debt and the dollar has experienced a long-term loss in value compared to other international currencies such as the yen, Swiss franc, and deutschemark/euro: between January 1973 and May 2009 it depreciated 30% against an index of major currencies.<sup>7</sup> It seems unlikely that macroeconomic policy discipline is what has earned the United States its privilege.

- b.** Some argue that the privilege to incur dollar liabilities has been earned in a different way: The United States has been appropriately exploiting its comparative advantage in supplying high-quality assets to the rest of the world. Recent examples include Caballero, Farhi and Gourinchas;<sup>8</sup> Cline; Cooper (2005); Forbes (2008); Hausmann and Sturzenegger (2006a, 2006b); Ju and Wei (2008) and Mendoza, Quadrini, and Rios-Rull (2007a, b). In one version, the United States has been operating as the World's Banker or the World's Venture Capitalist, accepting short-term liquid deposits and making long-term or risky investments (Gourinchas and Rey). Recurrent upward revaluations in the dollar price of US overseas assets have in effect financed much of the US deficits;<sup>9</sup> some believe that the valuation effects are not an unsustainable coincidence, but rather a component of the sustainable returns that the United States enjoys as world banker.
- c.** As noted under sub-section 2 above, the recent financial crisis has done little to resolve the debate over the fundamental causes of the US current account deficit. The argument that the United States supplies assets of superior quality, and thereby has earned the right to issue dollars to the rest of the world and finance its deficits, would seem to be undermined by disfunctionality that the US financial crisis suddenly revealed in 2007-08. American financial institutions broadly defined have suffered a severe loss of credibility (corporate governance, accounting standards, rating agencies, derivatives, etc.), while American financial institutions defined as banks and non-banks have in many cases ceased to operate (at least as private entities). How could sub-prime mortgages, CDOs, and CDSs be the superior type of assets that uniquely merit the respect of the world's investors?
- d.** But the events of the last year have undermined the opposing interpretation, the unsustainability position, as well. If this is the crisis of which the doomsayers have been warning, then why did the dollar not suffer the long-feared hard landing? The dollar, in fact, appreciated strongly after the Lehman Brothers bankruptcy and interest rates on US treasury securities went very low. Clearly in 2008 the world still viewed the US Treasury bill market as a safe haven and the US dollar as the

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<sup>7</sup> Federal Reserve Board Release H10, Major Currencies Index.

<sup>8</sup> Caballero, Farhi and Gourinchas (2008): "Intermediation rents...pay for the trade deficits."

<sup>9</sup> Lane and Milesi Feretti (2007) and Devereux and Sutherland (2009).

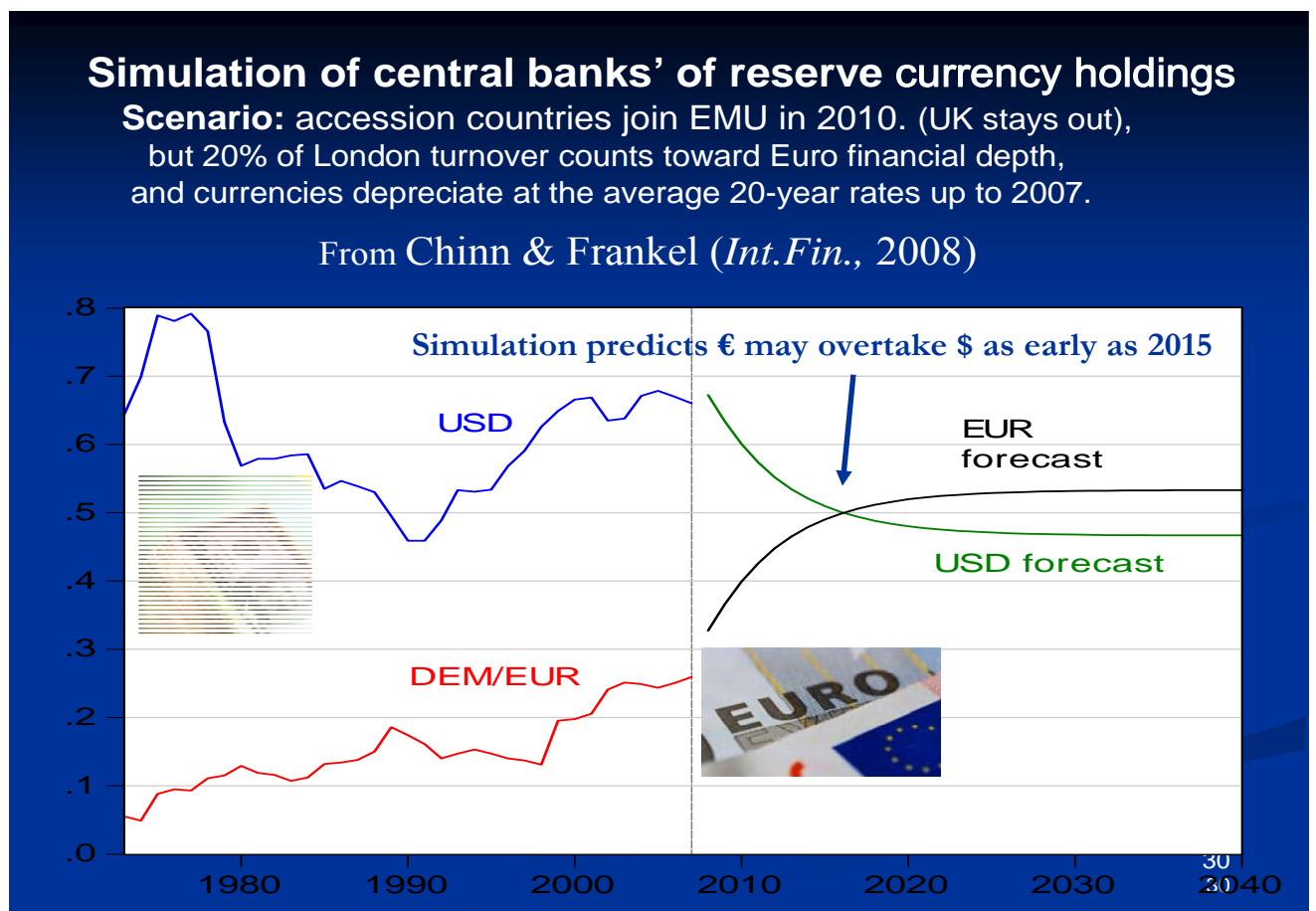
premier international currency. Although the more exotic arguments about the uniquely high quality of US *private* assets have been tarnished, the basic idea of American exorbitant privilege is still alive: the dollar is the world's reserve currency, by virtue of U.S. size and history.

- e. The question then becomes whether the dollar's unique role is an eternal god-given constant, or whether a sufficiently long record of deficits and depreciation could induce investors to turn elsewhere. In the early 1990s there was talk of the dollar losing its place as unrivaled international currency. The facts at that time did not support it. Neither the yen nor the deutschemark was a plausible rival, because Japan and Germany were not big enough, and Tokyo and Frankfurt were insufficiently developed as financial centers. But now there is a plausible rival, the euro.
- f. Consider the list of determinants of reserve currency status: economic size, depth of financial markets, rate of return, and the inertia of history. Euroland, is approximately the size of the United States. It is true that Frankfurt still lags behind New York in the depth and liquidity of its financial markets, but there are two counterarguments: (i) one should perhaps count London as the true financial center of the euro rather than Frankfurt, and (ii) the credibility of US financial markets as limitless deep, liquid, and trustworthy has been seriously impaired by the crisis. (Of course, that is also true of London.)
- g. Counting most heavily against the dollar, it has shown a poor ability to keep its value over time, whether measured by the level or volatility of the exchange rate. Counting most heavily in its favor is the inertia of history. These things don't change quickly. But eventually a tipping point is reached. The precedent, of course, is when pound sterling was overtaken by the dollar (between 1931 and 1945, depending on one's viewpoint), which happened with a substantial lag after the determinants had change (between 1872 and 1917, again depending on the measure), but which worked quickly when it happened.
- h. Menzie Chinn and I (2007, 2008) have econometrically estimated the effects of these various determinants on holdings of reserves by central banks. The estimated weight on the lagged value of reserves, reported in Table 1, suggests that the estimated speed of adjustment is about 1/10 per year. We then simulated what is likely to happen in the future. We find that a tipping point, where the euro pulls ahead of the dollar, could come as early as 2022 or even 2015 (Figure 1).

<b>Table 2: Determinants of Reserve Currency Shares (logit form)</b>		
Pre-EMU Panel Regression, 1973-1998 (182 observations)		
	<b>Coefficient estimates</b>	<b>Standard errors</b>
GDP ratio ( $y$ )	<b>0.115</b>	[0.049]
Inflation diff ( $\pi$ )	<b>-0.143</b>	[0.063]
Exrate var ( $\sigma$ )	<b>-0.055</b>	[0.032]
Fx turnover ratio ( $to$ )	0.023	[0.016]
GDP leader	<b>0.026</b>	[0.014]
lagshare ( $sh_{t-1}$ )	<b>0.904</b>	[.029]
Adj R2	0.99	

Source: Chinn and Frankel (2007). Notes: Dependent variable is  $sh$ . Estimated using OLS, no constant. All variables are in decimal form. GDP at market terms. Figures in **bold** face are significant at the 10% level.

Figure 1: Central bank reserve holdings



## 7. Bretton Woods II

The view of Dooley, Folkerts-Landau, and Garber (2003) on current account imbalances has received a lot of attention. They begin, perceptively enough, with the observation that today's system is a new Bretton Woods, with Asia playing the role that Europe played in the 1960s—buying up lots of dollars to prevent their own currencies from appreciating. Then the authors go on to some more original and provocative ideas: China is piling up dollars not because of myopic mercantilism, but as part of an export-led development strategy that is rational given China's need to import workable systems of finance and corporate governance.

- a. Initially, they were understood to be saying that this system could continue indefinitely. More recently, they have been pinned down as claiming only that it can go on for 10 or 15 years, comparable to the life of the Bretton Woods system.<sup>10</sup>
- b. My own view is that the Bretton Woods analogy is apt, but we are closer to 1971 (the date of the collapse of the Bretton Woods system) than to 1944 (the date of the actual meeting at Bretton Woods, NH) or 1958 (when currency convertibility was first restored in Europe). The current situation is more like the 1960s than Dooley, Folkerts-Landau, and Garber had in mind. It could have taken decades after 1958 for the Triffin dilemma to work itself out. But the Johnson and Nixon administrations greatly accelerated the process by expansionary fiscal and monetary policies (driven by the Vietnam War and Arthur Burns, respectively). These policies produced a declining trade balance and overall balance of payments, the collapse of the Bretton Woods system in 1971, and the failure of the attempted patch in 1973. There is no reason to expect better today. First, capital mobility is much higher now than in the 1960s. Second the United States can no longer necessarily rely on support of the foreign creditor central banks—neither on economic grounds (they are not now as they were then organized into a cooperative framework where each agrees explicitly to hold dollars if the others do), nor on political grounds (these creditors are not the staunch allies that the United States had in the 1960s).

## 8. Currency manipulation

In 2007, the IMF was supposedly given responsibility for surveillance over members' exchange rates, by which the US meant telling China that the value of its currency was below the appropriate. The phrase "unfair currency manipulation" has had official status in US law for 20 years and in the IMF Articles of Agreement for longer despite its protectionist ring. In practice, the supposed injunction on surplus countries to revalue upward has almost never been enforced, in contrast to the pressure on deficit countries to devalue. Some would say it is time to rectify the asymmetry.<sup>11</sup> My view is that it is time to recognize two realities: (1) It is normally not possible to say with confidence what is the correct value of a currency (and still less what is the "fair" value). (2) Creditors

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<sup>10</sup> Dooley and Garber (2005).

<sup>11</sup> E.g., Goldstein (2003, 2004, 2007).

are, and will always be, in a stronger power position than debtors. It is time to retire the language of unfair currency manipulation, rather than diluting the legitimacy of the language of international trade agreements.

- a.** American Congressmen of both parties have since 2003 argued that the RMB is undervalued and that increased flexibility in China's currency regime would be beneficial. These are both reasonable propositions. But the politicians have grossly overestimated the importance of the issue. They were misguided in thinking that an appreciation of the RMB would, alone, do much to boost US output or employment. The demands were especially misguided in putting such high priority on the entire exchange rate issue, given that we need China's help on more important things, such as preventing a nuclear-armed North Korea. But my arguments during this period might have been viewed by non-wonks as quibbles. After all, I did agree that an increase in the flexibility of China's exchange rate would be a good thing.
- b.** Now, in 2009, the situation has changed. Continued demands from American congressmen that China should stop intervening in foreign exchange market to keep the RMB fixed against the dollar have become especially foolish. This is because of two developments over the last year.
  - i.** The first development: in the spring of 2008, the top leaders in China decided to jettison the policy they had followed in 2007 – which had consisted of the long-desired abandonment of the dollar peg and the placing of a substantial weight on the euro. They changed horses in mid-stream: After mid-2008 they returned to their old policy (e.g., 2005-06) of a fairly close peg to the dollar. Evidently the motivation for the return to the dollar was complaints from Chinese exporters who had lost competitiveness in 2007, as the euro and therefore the new basket appreciated against the dollar.<sup>12</sup>
  - ii.** Why, then, are American congressmen wrong to complain that the return of the dollar link has given American firms an additional price disadvantage in world markets? The first reason on the list is that over the last year, the euro (surprisingly) depreciated against the euro. In other words, at precisely the moment when the RMB jumped back on the dollar horse, the dollar horse and the euro horse changed direction vis-à-vis each other. If the Chinese authorities had kept the loose basket policy of 2007 instead of switching back to the dollar peg in 2008, the value of the RMB would be lower today, not higher, and dollar-based producers would be at a greater competitive disadvantage, not lower.
  - iii.** The second development is that, in early 2009, the stratospheric rate of rise of China's foreign exchange reserves fell abruptly. In a couple of months, the PBoC even lost reserves. This means that an increase in exchange rate flexibility – in the extreme case, a move to floating – under current conditions might not result in an

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<sup>12</sup> Barry Naughton (2008) and Melton (2009) give a glimpse inside politburo politics.

appreciation of the RMB, and might even result in a *depreciation*. Again, that does not correspond to what the congressmen really want, nor to the public sentiment that they represent.

- iv. True, in the near future we could well see a return of substantial surpluses on China's overall balance of payments and a return of the 38-year trend dollar depreciation. In that case, non-intervention would once again imply RMB appreciation against the dollar. But that leads us to the third point.
- v. The third development, in the spring of 2009, are the appearance in the dollar's garden of the first "red shoots." Red as in deficits and red as in China. For decades, the United States has been able to count on foreigner investors, and in a pinch foreign central banks more specifically, to buy dollars to finance US deficits. In recent years, the PBoC has been the lead facilitator, piling up \$2 trillion in reserves, most of it in dollars. During the spring of 2009 we have seen the first signals that this process might not continue forever. At long last, the possibility that rating agencies might eventually downgrade US debt is in the air, and longer-term interest rates have risen over the last month.
- vi. But the most telling warning shots have come from Chinese officials. Premier Wen in April expressed worry that US Treasury securities would lose value in the future, requiring an unprecedented public reassurance from President Obama. PBoC Governor Zhou in May proposed replacing the dollar as an international currency, with the SDR. Another official told Americans that his countrymen "hate" having to hold a currency that they believe will lose value in the future as it has in the past. Interpreted separately and literally, each of these statements raises interesting economic questions worthy of extended discussion. Taken together, they constitute a wake-up call for oblivious congressmen. The message is that, at a time when its ratio of debt to GDP is on an explosive path, the United States is heavily and increasingly dependent on China to buy its treasury bills. If they and other Asian and commodity-exporting countries stop buying US treasury bills, the result would almost certainly be a hard landing for the dollar, defined as the combination of a big fall in the value of the dollar together with a big increase in US interest rates.
- vii. As a general proposition, it is obtuse to make strident demands on ones' biggest creditor without taking any consideration of the change in power that debtor status entails. It is astoundingly obtuse to make the demand that the Chinese stop buying dollars, at the same time as the United States is dependent on them continuing to buy dollars to finance our deficits. US Treasury Secretary Geithner appears to have recognized this reality, judging by the tenor of his June trip to China.

## Part II: What's "In"?

### 1. G-20

If the G-7 group of finance ministers and G-8 group of leaders are "out," what is "in"? The G-20. The meeting of the G-20 in London in April had some substantive successes and some failures. It appears likely that there was turning point, that the larger group will now be the central focus, thereby finally giving major developing/emerging countries some representation. If so, that is the most important thing that happened at the meeting

### 2. IMF

Perhaps the second most important thing that happened at the London meeting of the G-20 was the decision to triple in size the IMF. Recall that a few short years ago, the conventional wisdom is that the Fund no longer had a job to do in fighting crises, and that it was in danger of irrelevance. As a result, the staff was cut back sharply, with the full effects coming just as the international financial crisis started in 2007. Now the IMF is once again busy, new staff are being hired, and the membership has decided to increase its resources.

### 3. SDR

The comeback of the IMF was predictable. Far more surprising is the comeback from near-oblivion of the SDR (Special Drawing Right) as a potential international money.

- a. According to a useful 2x3 chart used by Kenen (1983), shown in Table 2, each of the three classical functions of money has two dimensions. The store of value function can be either official (central bank reserve holdings) or private (portfolios of individual investors). The unit of account function can also be either official (an anchor for smaller currencies) or private (use in denominating bonds, and so forth). Finally, the medium of exchange function too, can be either official (foreign exchange intervention) or private (invoicing of trade and financial transactions).

Table 3: Roles of an International Currency

<i>Function of money:</i>	<b><i>Governments</i></b>	<b><i>Private actors</i></b>
<i>Store of value</i>	International reserves	Currency substitution (private dollarization)
<i>Medium of exchange</i>	Vehicle currency for foreign exchange intervention	Invoicing trade and financial transactions
<i>Unit of account</i>	Anchor for pegging local currency	Denominating trade and financial transactions



- b. The SDR came into being at the end of the 1960s as a too-late medicine for the rapidly-deteriorating Bretton Woods patient. The SDRs issued in the early 1970s established its claim as an international reserve asset,<sup>13</sup> but the quantities were far too small by modern standards to matter for anything. For a time, discretely encouraged by the IMF, the SDR was used by some countries to peg their currencies and others to issue bonds. Already by 1996, however, the SDR had failed to perform well in any of the dimensions of an international currency. From time to time, authors would respond to an international liquidity shortage by proposing a new issue of SDRs, but they were usually dismissed as unrealistic politically.
- c. Unexpectedly, at the London meeting in April 2009, the G-20 decided to create new SDRs. It was shortly later that the Chinese central bank proposed the possibility of replacing the dollar as lead international currency with the SDR. Some have revived the proposal for an international substitution account at the IMF, which would extinguish an unwanted dollar overhang in exchange for SDRs. Some major region or country, like China itself, would have to adopt the SDR as its home currency – an unlikely event – before it stood much chance of standing up as a competitor to the euro or yen, let alone to the dollar. Nonetheless, the SDR is suddenly back in the game as a factor in the world monetary system.

#### 4. Credit cycle

For 30 years, monetary economics held that excessive monetary expansion was synonymous with inflation getting out of control, necessitating monetary contraction and, usually, a recession, to get back to stability. In truth, this cycle did fit fairly well the recessions of 1974, 1980, 1981-82, and 1990-91. Forgotten was an earlier notion of cyclicity: the credit cycle of von Hayek, the bubbles and panics of Kindleberger, the Minsky moment, and Irving Fisher's debt deflation.

As some economists at the Bank for International Settlements (Borio, 2005, and White, 2009) pointed out *ahead* of the current crisis, the 20<sup>th</sup> century is replete with examples of big asset booms that ended in devastating crashes, where monetary policy in retrospect was too easy during the boom phase, and *yet where inflation did not show up at any stage*: the 1920s real estate boom in Florida and stock market boom in New York, followed by the 1929 crash and Great Depression; the 1986-89 stock market and real estate bubbles in Japan followed by the decade of stagnation; and the subsequent East Asia boom and bust in the 1990s. The US experience of the last decade fits this pattern well. Now Alan Greenspan can be answered: (i) yes, identifying bubbles is hard, but no harder than identifying inflationary pressures 18 months ahead of time; (ii) monetary authorities do actually have tools to prick speculative bubbles, and; (iii) the habit of coming to the rescue of the markets after the crash created a moral hazard problem (the "Greenspan put") which exacerbated the bubbles in the first place; and (iv)

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<sup>13</sup> Some important observers do not consider the SDR a money or an asset, but rather a line of credit. Although he is willing to be convinced otherwise, the author's view is that the SDR is as fundamentally an asset like any other fiat money. The name "right" was an attempt to console the French, for losing the fight over whether it was to be an asset, by choosing a name that suggested the opposite of the actual outcome.

the cost in terms of lost output can be enormous, even when the central bank eases very aggressively.

Thus we have yet another reason why central banks should not focus exclusively on inflation. Perhaps the credit cycle even provides the long-lost rationale for the ECB's continued insistence on placing the M1 pillar on the same pedestal as the inflation pillar !

## **5. Reserves**

The number of floating currencies has steadily increased, ever since 1973. For many emerging markets, the increase in exchange rate flexibility was a response – sometimes deliberate and planned, sometimes forced and unplanned – to the crises of 1994-2001. In theory, countries that float should not need to hold reserves, let alone to use them. Yet developing and emerging market countries took advantage of the boom of 2003-2007 to build up their reserves to unheard of heights. Instead of choosing between greater exchange rate flexibility and higher reserves, they chose both.

- a. Western economists delivered some persuasive-sounding papers and speeches suggesting that many of the countries were holding far more reserves than they needed.<sup>14</sup> After all, most of these reserves were held in the form of US Treasury bills, which earned low returns, because of both low US Treasury bill rates and trend depreciation of the dollar. The implication was that central banks in developing countries should (i) allow more appreciation and less reserve accumulation, (ii) for whatever level of reserves they continue to hold, diversify them.
- b. With the coming of the international financial crisis, however, it appears that the emerging market countries knew their business better than we academic economists. Aizenman (2009), for example, concludes that the global liquidity crisis has now illustrated that foreign exchange reserves provide important self insurance.<sup>15</sup> Similarly, Obstfeld, Shambaugh, Taylor (2009) conclude that those countries which built up large precautionary holdings of reserves after the East Asia crisis of the late 1990s were doing the right thing: They find that the level of reserve holdings (relative to a measure of need based on M2) was a statistically significant predictor of which countries were then able to avoid large depreciations in the “Panic of 2008.” Perhaps reserve accumulation is a useful way of making sure that windfall gains in export revenue get saved for a rainy day in countries where the central bank may be the only institution that is resistant to political pressure.

## **6. Intermediate exchange rate regimes**

If the corners hypothesis is “out,” as indicated under concept 3 of Part I, then it follows that intermediate regimes are back “in.” Intermediate regimes include the following: target zones (bands), crawls, basket pegs, and adjustable pegs, and

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<sup>14</sup> Especially Jeanne (2007), Rodrik (2006) and Summers (2006).

<sup>15</sup> “The deleveraging triggered by the crisis implies that countries that hoarded reserves have been reaping the benefits.”

various combinations of them.<sup>16</sup> The IMF classifies more than half of its members as following regimes somewhere in between free float and hard peg. Economists' attempts to estimate the de facto regimes that countries actually follow generally estimate an even higher fraction of intermediate regimes.

- a. But this leads us to the point that the various attempts to discern what countries are actually doing (de facto classification) disagree with each other as much as they disagree with the de jure classification.<sup>17</sup> I would suggest three limitations of the methodologies used, which may help explain this inconvenient lack of congruence. First, many of the methods do not attempt to distinguish whether high exchange rate variability is attributed to high shocks or to a high propensity to allow a given shock to show up in the exchange rate rather than in reserves. It matters, because shocks are in fact much higher for some economies than others. Second, many of the methods do not attempt to allow the anchor currency, or currency basket, to be estimated endogenously, and instead impose an assumed anchor, usually the dollar. This matters because some currencies have other anchors, such as baskets. Third, most of the methods do not attempt to allow endogenously for parameters to change frequently. This matters because most currencies follow regimes that evolve rapidly.
- b. I have recently proposed a new approach to estimate countries' de facto exchange rate regimes, a synthesis of two techniques.<sup>18</sup> One is a technique that I have used in the past to estimate the implicit de facto weights (by OLS regression on exchange rate changes).<sup>19</sup> Here the hypothesis is a basket peg with little flexibility. The second is a technique used by others to estimate the de facto degree of exchange rate flexibility (by observing the outcome of exchange market pressure). Here the hypothesis is an anchor to the dollar or some other single major currency, but with a possibly substantial degree of flexibility around that anchor.<sup>20</sup> It is important to have available a technique that can cover both dimensions, inferring weights *and* flexibility.
- c. We have tried out the synthesis equation on some 20 currencies over the period since 1980. In general the equation seems to work as it should, whether for basket pegs, dollar pegs, and floaters. I have now tried it out on recent data for the most prominent case of a disputed exchange rate regime: the case of the Chinese RMB, where it produced the results asserted under subsection 8 of part I.<sup>21</sup>
- d. Real world data demand a statistical technique that allows parameters that evolve more often than once a year. Chile, for example, followed a band+basket+crawl in the 1980s and 1990s that was exceptionally transparent, but that included 18 announced changes in parameters (width,

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<sup>16</sup> E.g., Williamson (2001).

<sup>17</sup> As measured either by correlation statistics or by percentage of matches in classification. E.g., Frankel (2003).

<sup>18</sup> Frankel and Wei (2008).

<sup>19</sup> E.g., Frankel and Wei (1994).

<sup>20</sup> Calvo and Reinhart (2002), Levy-Yeyati and Sturzenegger (2003).

<sup>21</sup> Frankel (2009b).

weights, level, and crawl). The usual techniques cannot handle such frequent parameter shifts. Accordingly I have recently acquired weekly reserve data for some countries (and am interpolating for some other countries, where only monthly reserve data are available). I am applying econometric techniques that allow endogenous estimation of parameter breakpoints.

**Table 4: Identifying Parameter Break Points Endogenously in Estimation of China's Exchange Rate Regime**

With weekly data set

(In this case, interpolations are made to get weekly reserve data from monthly.)

$\Delta(\text{EMP})$  defined as  $[\Delta \text{res}(t)]/\text{mb}(t-1)+[\Delta \text{exr}(t)]/\text{exr}(t-1)$

VARIABLES	(1) 1/6/2005- 7/15/2005	(2) 7/29/2005- 4/27/2007	(3) 5/4/2007- 11/16/2007	(4) 11/23/2007- 9/8/2008	(5) 9/15/2008- 12/8/2008	(6) 12/15/2008- 3/11/2009
<b>US \$</b>	1.000*** (0.000)	0.893*** (0.030)	0.596*** (0.101)	0.685*** (0.066)	0.965*** (0.091)	0.929*** (0.058)
<b>Euro</b>	0.000 (0.000)	0.046* (0.025)	0.087 (0.077)	0.241*** (0.050)	0.128 (0.082)	0.037 (0.049)
<b>Jp yen</b>	-0.000 (0.000)	0.014 (0.013)	0.063 (0.038)	0.059** (0.022)	-0.065** (0.025)	0.010 (0.021)
<b><math>\Delta \text{emp}</math></b>	0.000 (0.000)	0.034 (0.024)	0.129** (0.060)	0.185*** (0.052)	0.165 (0.125)	0.042 (0.063)
<b>Constant</b>	-0.000 (0.000)	0.000 (0.000)	0.000 (0.001)	0.000 (0.000)	-0.000 (0.001)	0.000 (0.000)
<b>Observations</b>	28	92	29	42	13	13
<b>Kr won</b>	-0.000	0.047	0.254	0.015	-0.027	0.023
<b>R-squared</b>	1.000	0.979	0.929	0.990	0.999	0.999

Note: \*\*\* p<0.01, \*\* p<0.05, \* p<0.1 (Robust standard errors in parentheses)

## 7. Commodity currencies

In the 1990s, heavy bulky commodities (agricultural and mineral products) were out, and weightless internet technology was in. But commodities have made a comeback.

- a. A few countries with commodity-concentrated exports are floaters. They include Australia, Canada, Chile, and South Africa. They have "commodity currencies," in the sense that they tend to experience appreciation when the world market for their export commodities is strong, as during 2001-08, and depreciation when it is weak, as in the 1990s and late 2008.<sup>22</sup>

Table 5: Determination of South Africa's Real Exchange Rate based on CPI

<sup>22</sup> Among other examples: Chen and Rogoff (2003) for Australia and New Zealand, and Frankel (2007a) for South Africa.

Dependent Variable: Log(Real Rand<sub>CPI</sub>)  
 Sample(adjusted): 1984:II-2007:I  
 92 observations, after adjusting endpoints

Variable	Coefficient estimate	Std. Error	t-Statistic	Prob.
Log(Real Rand <sub>CPI</sub> (-1))	0.839	0.043	19.687	0.0000
Log(Real World Mineral Price Index)	0.164	0.058	2.816	0.006
Real Interest Differential	0.018	0.005	3.390	0.0011
Cap Lib Dummy	-0.050	0.023	-2.154	0.0341
Cap Lib Dummy * RID	-0.009	0.006	-1.468	0.1457
C	0.738	0.202	3.652	0.0004

R-squared	0.912			
Adjusted R-squared	0.907	S.D. dependent var	0.213	
S.E. of regression	0.065	F-statistic	178.6	
Sum squared resid	0.363	Prob(F-statistic)	0.000	
Log likelihood	124.05	Durbin-Watson stat	1.718	

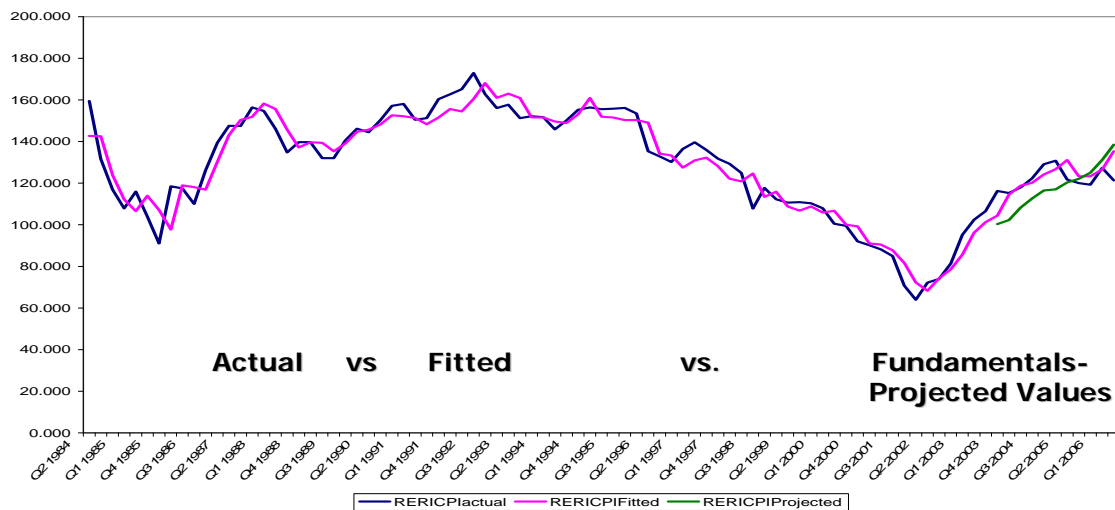


## The Rand, 1984-2006:

Fundamentals (real commodity prices, real interest differential, country risk premium, & i.e.v.)



can explain the real appreciation of 2003-06 – Frankel (2007).



- b. Other commodity producers have fixed exchange rates, for example Saudi Arabia and the other oil-producers of the Gulf, who welcome the stable anchor and the facilitation of international transactions from their dollar

pegs. When oil prices soar however, the export earnings show up as an inflow of money and inflation, since they can't show up as an appreciation of the currency. When oil prices crash, reserves run low and the currency is vulnerable to a crash, and with it the entire economy (e.g., Indonesia and Russia in 1998). Clearly both regimes have advantages: the anchor provided by a fixed exchange rate and the accommodation of terms of trade shocks by a floating exchange rate. The claim for my Peg the Export Price proposal<sup>23</sup>, which would peg the currency to oil, or the more moderate version, Peg the Export Price Index<sup>24</sup>, is that it would give the best of both worlds.

### **8. Multiple reserve currency system**

In Part I, Section 6(g) reported a statistical exercise predicting that the euro could rise to challenge the dollar as international currency over the coming decade. In Part II, Section 3 remarked on the sudden come-back of the SDR from near-oblivion. The financial turbulence of the last year has enhanced the safe haven status of the yen. Meanwhile gold has also made a sudden comeback among as a form in which central banks hold international reserve assets, after years in which scholars and central bankers alike considered its continuing presence in their vaults to be an historical anachronism. Finally, though it would take years of developing and opening China's financial markets, the RMB could well be an international currency ten years from now, and on of those at the top 30 years from now. We just may be headed for a system of multiple reserve currencies.

- a. A multiple reserve currency system is inefficient, in the same sense that a barter economy is inefficient: money was invented in the first place to cut down on the transactions costs of exchange, to avoid the need for a "double coincidence of wants."
- b. Nevertheless, if sound macroeconomic policies in the leader country cannot be presumed, the existence of some competitor currencies gives the rest of the world protection against the leader exploiting its position by running up too much debt and then inflating/depreciating it away.

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<sup>23</sup> Frankel and Saiki (2002).

<sup>24</sup> Frankel (2005).

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