Real Exchange Rates – Recent US experience

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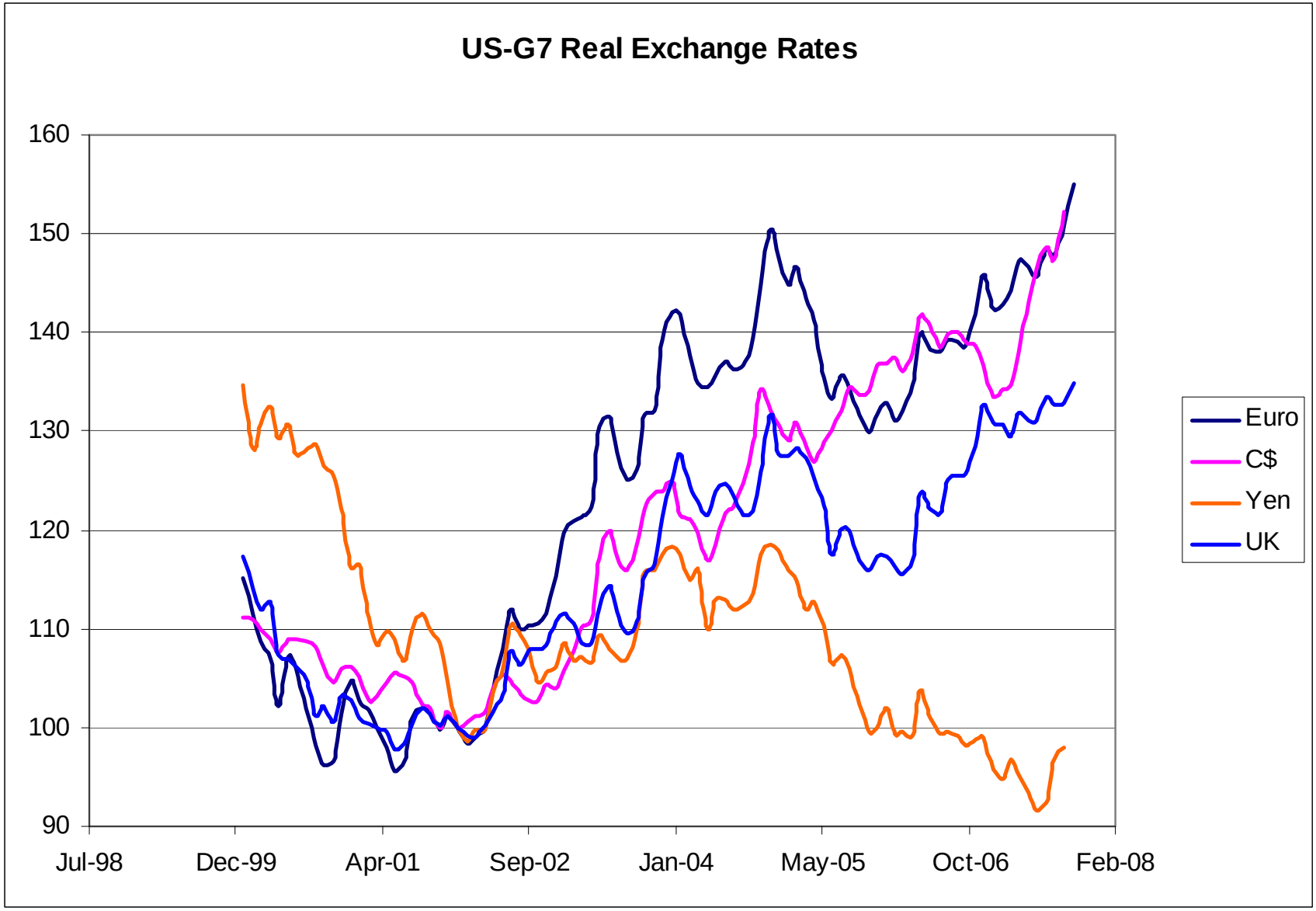

US-G7 Real Exchange Rates
160
150
140
130
120
110
100
90
Jul-98
Dec-99
Apr-01
Sep-02
Jan-04
May-05
Oct-06
Feb-08
Euro
C$
Yen
UK

Are these Real Exchange Rate Movements Excessive?

- Many economists believe that the US current account deficit is not sustainable and its correction requires a real depreciation.
- Does that mean there should be a 50+ percent real depreciation against the euro and Canadian dollar? And a 35% real depreciation against the euro?
- I want to ask whether these are “equilibrium” adjustments – what we would see if goods prices were flexible.
- If not, what are the implications?

Starting Point

- The BROKER view is that saving was too low in the US and investment too high.
  - (BROKER = Blanchard-Rogoff-Obstfeld-Krugman-Edwards-Roubini)
- CA = S – I
- The deficit is a result of a mistake. US was too optimistic about future growth, or did not understand risks.
- When this mistake is corrected, there is a loss in apparent wealth or an increase in apparent risk, which reduced US spending.
- I'll take the BROKER view as given.

My Approach

- First, from a general equilibrium view, what relative price adjustments are needed?
  - Here, I will review (and disagree just slightly) with the Obstfeld – Rogoff analysis (Brookings Papers, 2005)
- Then I will try to put the Blanchard-Giavazzi, Krugman, Edwards risk premium story in perspective.

Let’s clear up one fallacy

- The press talks about the change in the real exchange rate that will balance the current account.
  - But economists neither think about exogenously changing real exchange rates
  - Nor do we think that the real exchange rate is determined by the trade balance
- The BROKER analysis is always couched as what real exchange rate will accompany the decline in spending required to reduce the US current account?

CPI Real Exchange Rates

- Another important point to understand is that these are CPI real exchange rates
- A 50% real depreciation means that the cost of living in Canada has risen 50% relative to the cost of living in the US since 2002.
- The puzzle is that US and Canadian consumption baskets are quite similar. How could prices have gone up so much in Canada?

Obstfeld - Rogoff

- Suppose US wealth declines sufficiently to reduce US spending so that trade is balanced.
- How will the US real exchange rate adjust?
- It will depreciate for two reasons:
  - Price of US-produced traded goods falls. We have a home bias in consumption of traded goods we produce, so that leads to a CPI real depreciation
  - Much of the decline in spending falls on nontraded goods. Their price must fall.

What Obstfeld – Rogoff conclude

- In a three-country (US, Europe, Asia) model, OR conclude that the US/Europe real depreciation must be 28.6%.
  - That is less than we have already seen. That is, even by this measure, the European and Canadian rates have depreciated too much.
- But I think that there are 2, possibly 3, reasons why OR's calculations may overstate the needed equilibrium real exchange rate adjustment.

Elasticities

- OR assume the elasticity of substitution for traded goods among all three “countries” is equal to 2.
- This is probably (much) too low for US relative to other G7 countries.
  - Micro studies find much higher elasticities
  - US-emerging Asia elasticities are lower than US-G7
  - Short-run elasticities are lower, but I think this is because there are adjustment costs. However, it is reasonable to think the current account adjustment will occur over time, so long-run elasticities are more relevant.

Nontraded Goods

- OR assume nontraded consumption is 75% of the consumption basket
  - This is quite high relative to most calibrations.
- Much of the real exchange rate adjustment occurs because of a drop in the price of nontraded goods relative to traded goods – even domestically-produced traded goods.
- But crucially, they assume no reallocation of productive resources within the country in response to these price signals.

Incomplete Pass-Through

- Nobody has analyzed these same questions in a model with incomplete pass-through coming from endogenous mark-ups.
- The closest thing is the very nice paper by Atkeson-Burstein
- They show that even if there are large PPI real exchange rate changes, pass-through in equilibrium may be low.
- But their model takes the PPI real exchange rate as exogenous.

Conclusion

- I have not worked through a “recalibrated” version of Obstfeld-Rogoff with these adjustments.
- Based on similar models, I know these changes have dramatic effects on the predicted real exchange rate changes.
- I think that a reasonable conclusion is that a smaller equilibrium real depreciation than even the number calculated by OR will “balance” the US current account.
- Dekle, Eaton, Kortum (AEAP&P) conclude that rebalancing US current account requires only around a 10% depreciation relative to OECD.

Risk Premia

- Wouldn’t portfolio risk imply a real depreciation?
- The models which infer a large real depreciation from a portfolio effect are not fully articulated on the goods side.
- As I will explain, I think implicitly those models assume some sort of sticky goods prices.

Real Exchange Rates and Risk Premia

- The real interest rate differential (home less foreign) equals the expected real rate of depreciation plus the relative risk premium on home assets:
  - $r(t) - r^*(t) = E(t)q(t+1) - q(t) + z(t)$
- Real exchange rate:
  - $q(t) = E(t)q(t+1) - [r(t)-r^*(t)] + z(t)$
- Iterate forward:

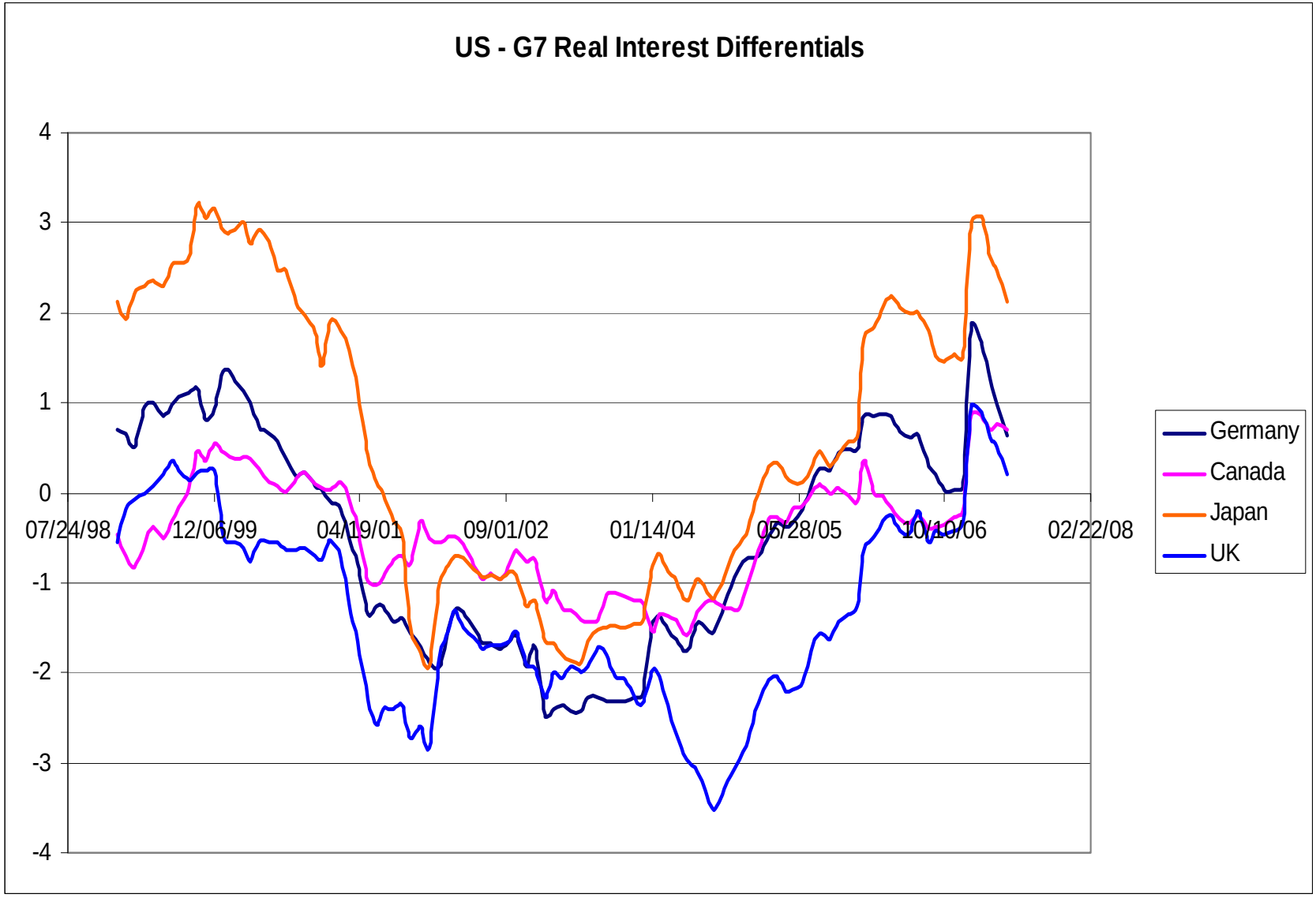
$$q(t) = E(t)q(t+k+1) + E(t)[r(t)-r^*(t)+\ldots+r(t+k)-r^*(t+k)] + E(t)[z(t) + \ldots + z(t+k)]$$

Risk Premia and Real Interest Rates

- Even if the long run real exchange rate is not changed much, the equation shows that, *ceteris paribus*, higher risk premia imply a real depreciation.
- *Ceteris paribus* here means holding real interest rates constant.
- But more plausibly, if US assets are riskier, that will show up in higher required real returns on US assets.
  - That is, if the risk is not real exchange rate risk per se, then it is not directly reflected in real exchange rates.

Monetary policy and risk premia

- If we buy the argument that US assets are riskier, then real US interest rates should rise.
- But monetary policy can keep US real interest rates low.
  - Then the risk does show up as a real depreciation.
  - But it is better to say that the real depreciation occurs because monetary policy eases to keep the real interest rate from rising with increasing risk.


US - G7 Real Interest Differentials
4
3
2
1
0
-1
-2
-3
-4
07/24/98
12/06/99
04/19/01
09/01/02
01/14/04
05/28/05
10/10/06
02/22/08
Germany
Canada
Japan
UK

Implications

- US relative real interest rates have risen over past few years. But the dollar has continued to depreciate.
- If the risk story is right, maybe US real rates have not risen fully to reflect this risk.
- The Fed has, in effect, provided liquidity to offset this increasing risk.
- That is probably wise policy – but it has led to an overvalued euro and Canadian dollar, and probably UK pound.

Costs of currency misalignment

- Are the costs of this currency misalignment large?
  - US is fairly closed.
  - A large fraction of trade is with Canada and Europe, but still trade is small overall.
  - But we also compete with these countries in other markets.
- We can think of large misalignments as distorting comparative advantage and destroying gains from trade.
  - But how do temporary misalignments affect trade?

Conclusions

- To put it perhaps too starkly – the Fed is combating the housing crisis to some extent by pumping up the export sector.
  - What is the cost of (temporarily) lowering US export prices in a distorted way?
- Or maybe a better way to put it is that the housing bubble led to an overly strong dollar.
  - One cost is that it (temporarily) made the export sector less competitive.
- How important are these sectoral misallocations?