

Comment: Maurice Obstfeld

Thank you, Kaushik, for inviting me to comment on this chapter by Hyun Song Shin. It's always a pleasure to come across 19th Street to the World Bank. This is a very nice chapter that summarizes and brings together material about global liquidity and credit that Hyun Song Shin and the Bank for International Settlements (BIS), more generally, have been calling to our attention for a while. There are two main themes. One is that US financial conditions drive global conditions. The second is that the US dollar's value is a key barometer of global liquidity conditions and hence of risk taking.⁴ In establishing propositions one and two above, the chapter looks at a number of pieces of evidence, such as CIP deviations, US dollar denominated bank lending data, and sovereign CDS spreads. The underlying driver put forth to explain the facts is that the US dollar has a unique role as an international currency: as an invoice currency, as a funding currency, as a vehicle currency, and as a reserve currency.

My comments will be based on four observations, some of which are macro comments and some are finance comments. Before covering these, let me flag the chapters's important observation with respect to CIP deviations. My interest in this should not be a surprise, given that my textbook (Krugman, Obstfeld, and Melitz 2017) is one that commits the sin of claiming that CIP holds (more precisely, held quite closely for about three decades up until the 2008–2009 global financial crisis). We will have to be

I gratefully acknowledge helpful assistance from and discussions with Eugenio Cerutti. All opinions and errors are mine alone.

4. One subtheme in the chapter that was not emphasized is that the euro and yen may be growing in international importance. I won't have time to go into this issue, but I'm a bit skeptical, given the challenges that those economies currently face.

sure in the next edition of the book to acknowledge more fully the seeming arbitrage opportunities that have persisted long after the end of the crisis; more on these below.

My *first* observation concerns the relation between the exchange rate and the current account. Even in theory, a current account deficit does not necessarily signal future depreciation over any specific time frame. Even in the simplest model with perfect substitution among assets, and where portfolio effects therefore are not important, the relationship is not straightforward. A current account deficit could arise because of a fall in foreign demand or a rise in domestic demand, and these two events will have completely opposite effects on the exchange rate and output in the short run. The point is that the exchange rate movements are going to be endogenous, so we cannot really speak of an exchange rate change leading to a contractionary effect. This really depends on what is driving it. Now, if we go to the kind of world that Hyun is talking about, where there are also two-way gross capital flows and a rich array of different assets and liabilities traded, then indeed, life is going to become much more complicated. We can think about portfolio shifts between asset classes, possibly due to changes in preferences, policy liquidity conditions, and the like. But here again, currency appreciation need not be contractionary, as a more traditional approach to international economics might indicate through its exclusive focus on the net export effect. For example, one very important channel that Hyun and others have stressed arises from the presence of dollar liabilities, such that domestic net worth can increase when the currency appreciates. Any resulting easing of binding credit constraints will be expansionary. More recently, Olivier Blanchard and coauthors (Blanchard et al. 2016) have suggested a different channel. They look at nonbond inflows and show that these can be expansionary. So, more generally, I see here a very interesting research agenda that looks more deeply to understand the complex links among the current account, the exchange rate, and the macroeconomic conjuncture.

Let me turn to my *second* comment, which is about CIP violations. This is a fascinating anomaly. In perspective, there are many other asset market anomalies that have arisen since 2008, some of which do not obviously have much to do with the international economy specifically, but likely have to do with liquidity and asset markets in general. Part of the rethinking we've been doing since the global financial crisis centers on figuring

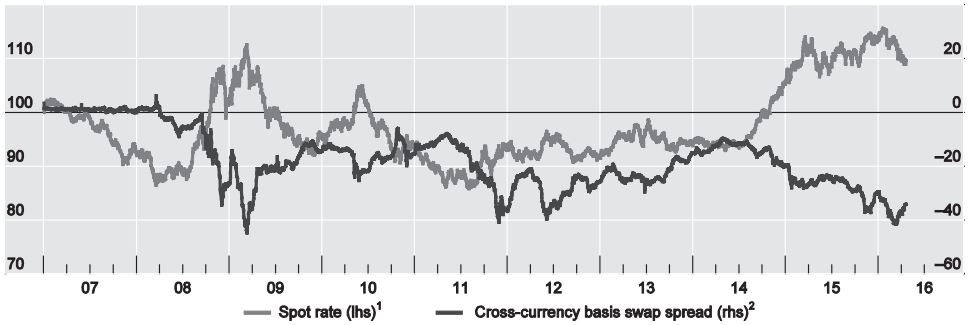


Figure 5.14

US dollar exchange rate and the cross-currency basis

¹Simple average of bilateral exchange rate of the dollar against CAD, EUR, GBP, SEK, CHF and JPY. Higher values indicate stronger US dollar.

²Simple average of the five-year cross-currency basis swaps against CAD, EUR, GBP, SEK, CHF, and JPY vis-à-vis the US dollar.

Sources: Bloomberg; BIS calculations. This chart is from S. Avdjiev, W. Du, C. Koch, and H. S. Shin, 2016. Exchange rates, currency hedging and the cross-currency basis.

out how things that we thought were true and obvious seem not so true or obvious anymore. But CIP is a particularly fascinating case, because, since Keynes (1923) first explained covered interest parity in 1923, it has been an article of faith (despite deviations over long stretches, when currency markets and international arbitrage were restricted). But what you see in figure 5.14, which is a repeat of figure 5.2 from the Shin chapter, is that since the global financial crisis, CIP no longer works very well. The upper line graphs an average exchange rate against the dollar, and when it rises, the US dollar appreciates. The lower line is the swap basis, which as Hyun explains, is the difference between the gross LIBOR interest rate, which is denoted $1 + i_{US}$, and the covered foreign gross interest rate. This gap has generally been negative and substantial in absolute magnitude since the financial crisis. Why? Hyun argues that the gap shrinks when the dollar is weaker—and presumably when Fed policy is relatively easy—owing to the easier global liquidity conditions that result. My guess, however, is that different factors are of greater or lesser importance over different periods.⁵

5. For an exploration of the changing factors driving CIP deviations over time, see Cerutti, Obstfeld, and Zhou (2019).

For example, we see a big widening of the swap basis in the period of the euro crisis. During that period, the dollar is actually somewhat weak, compared to its period average, because this is also the period before the temper tantrum unwinds. So it is likely that the story is more complex than in Hyun’s account—other things may be going on. One very interesting theory, one that focuses on the euro crisis, is told by Ivashina, Scharfstein, and Stein (2015). Interestingly, it is based on a structural factor that is very central to Hyun’s story: the large extent of dollar financial intermediation in the world economy. Ivashina and coauthors point out that European banks have a structural deficit of US dollar funding in the sense that they want to lend a lot of dollars, but their natural (explicitly and implicitly insured) deposit base, which therefore is somewhat cheaper to tap, is in euros. Please look at figure 5.15, based on a paper out of the IMF Research Department by Eugenio Cerutti and coauthors. As you can see, there is a lot of bank lending to emerging markets, euro area banks play a key role, and they lend predominantly in US dollars. This snapshot is very consistent with the story that Hyun is telling.

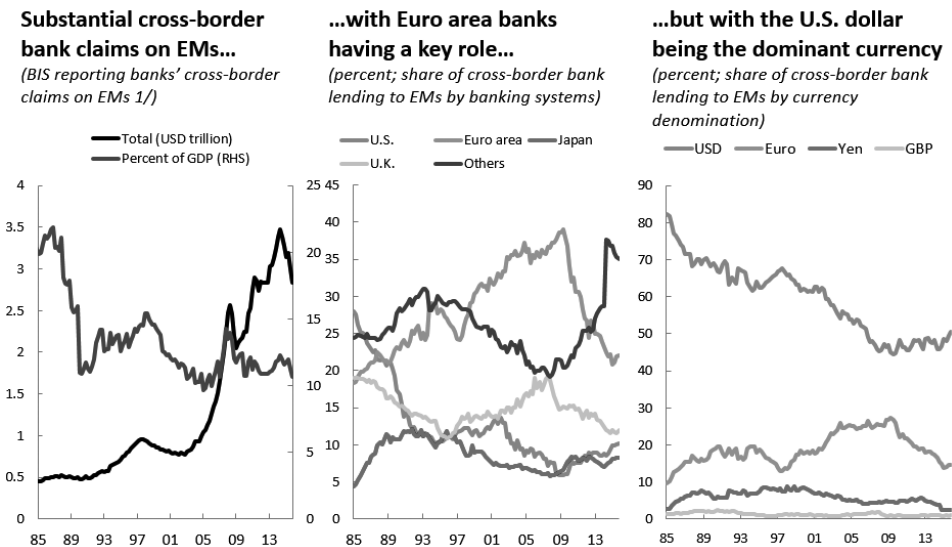


Figure 5.15

Cross-border bank lending to emerging markets

Sources: BIS Banking Statistics; and Cerutti, Claessens, and Ratnovski (2017). The sample of emerging markets includes 49 large emerging markets.

So, what do these banks do when they have a deposit base in euros, but they want to lend US dollars? They borrow euros and swap them into dollars, and then they can keep rolling over those swaps. This imbalance, however, gives rise to a structural excess supply of forward dollars, and thus, the pattern of CIP deviations that Hyun has shown us. Why does classical arbitrage not eliminate these gaps? Given even small repayment frictions, but in a much different environment since the global financial crisis, limits to arbitrage (which can be due to liquidity, limited capital, market structure, etc.) allow CIP gaps to persist. In the Ivashina, Scharfstein, and Stein (2015) work, when euro area banks become more stressed, as they certainly seem to be now, they may find that the comparative advantage of euro over US dollar funding rises, which will induce them to do more synthetic US dollar borrowing through the swap market. The result of what is basically a demand effect will push up the cost of such funding.

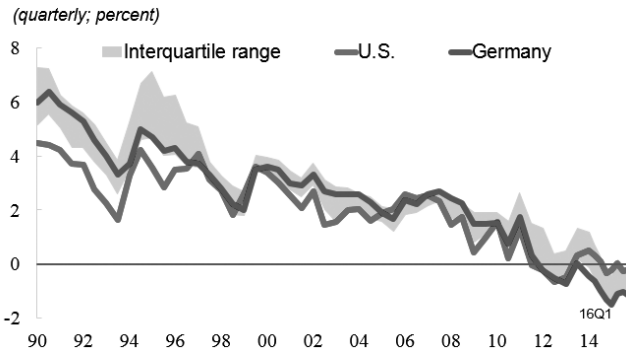
Hyun's chapter does not go into a lot of detail here, but my reading is that he puts more emphasis on the suppliers of these swaps, which are likely to be other banks. These banks also face limited capital and other impediments to arbitrage, impediments that recede when US monetary policy is easier. So, both forces—demand and supply—are going to be in play. The big central banks have recently changed the architecture of some of these markets quite substantially through the introduction of standing swap lines among themselves, but it is unclear in the very short run whether disruptions could occur nonetheless. I would join Hyun in the plea for more research on this general topic, and more work on developing a general-equilibrium picture.

I would also observe, putting a macro hat back on, that there could be a real channel that works against Hyun's hypothesized mechanism. When the US dollar strengthens due to tighter Fed policy, the euro weakens, which has positive effects on the real euro area economy and thereby helps its banks. So a range of complex macro and financial effects are in play. One interesting question that Hyun does not address is evident from the figures in the chapter: some currencies (like sterling) have pretty small basis deviations, but for others they are quite large. For the Swiss franc, we see some huge spikes, because it is now a safe haven and the Swiss National Bank's interventions in currency markets have been associated with considerable turbulence. What is going on across currencies? We have no good sense of that, but the fact that euro area banks appear especially challenged should not surprise us.

My comment *number three* is also a macro comment: Is the US Federal Reserve really all-powerful? There are powerful global forces at work, but they also lie behind the global level of the natural real interest rate, and one can argue that the latter is driving monetary policies worldwide. Sure, the US dollar's role is important; but is it really the central fact here? I think back to the mid-2000s, when Alan Greenspan was lamenting the conundrum of raising short-term dollar interest rates, with little apparent impact on long-term dollar interest rates. At the same time, there was widespread discussion of global saving gluts and global imbalances, and the limits of US monetary policy in the face of those global flows, which were held to have depressed real interest rates worldwide. In light of current debates over the role of the Fed in the global economy, it is useful to recall those debates of the past decade.

In a related vein, Hyun mentions some work by his colleague Claudio Borio, and Hyun himself has also done some work along the same lines. A strand of macro-financial analysis, of which I think Hyun's chapter is representative, downplays the role of the Wicksellian natural or neutral real interest rate in favor of the primacy of financing conditions. That approach does help make sense of issues like US dollar funding and liquidity, is critical for short-term market dynamics, and certainly illuminates problems that macroeconomists missed before the global financial crisis. But the old conventional macroeconomic issues still remain important. For example, beyond other measures of financial conditions, we have seen that global real interest rates—mostly driven by nominal interest rates—have shown a powerful downward trend since at least the 1990s, as shown in figure 5.16, and macroeconomic flow factors seem likely to be key drivers.

When I think about the interaction of complex financing and macro issues, I find it helpful to remember Tobin's work, which was very influential at the time but at some level never became totally mainstream. Tobin's research program aimed to reconcile stock and flow equilibrium phenomena in models with a rich menu of assets. (See, for example, Tobin 1981.) Taking Tobin seriously, one would acknowledge the mutual consistency of stock equilibrium and flow equilibrium, as well as their tendency to interact over time and thereby determine the economy's dynamic path. The conditions of stock equilibrium matter, because changes there (for example, a rise in the portfolio demand for safe assets) change asset prices and affect flows of saving and investment, with effects that alter the entire future path of

**Figure 5.16**

Global 10-year real interest rates

Notes: Calculated as nominal 10-year bond yields minus 10-year-ahead CPI inflation forecast (consensus forecast). Sample includes Australia, Canada, France, Germany, Italy, Japan, Netherlands, New Zealand, Norway, Spain, Sweden, Switzerland, United Kingdom, and United States.

Sources: IMF, *Global Data Source*; Bloomberg L.P.; and Consensus forecasts.

the economy. In contrast, the fundamental Wicksellian natural rate, which is established in the flow equilibrium of global saving and investment, is the foundation for the whole array of risky rates of return that the economy's available assets offer. If Tobin were here, he would certainly endorse adding realistic financial constraints and financing frictions to the models we use, as those also feed into the flow equilibrium. When I call for developing general-equilibrium models, I am calling for a reconciliation of the stock and flow points of view, because I do not think they are contradictory. However, it is important to recognize that in some situations, shocks to the flow equilibrium will dominate. For example, China's entry into the world economy is a stock story, but it also represents a big flow shock. It was a flow shock in the first instance, because China started out not being integrated into world markets. Now that China is rebalancing and is somewhat more integrated financially, we are seeing stock shocks galore emanating from China—some through direct Chinese financial relationships; most through expectation effects in foreign asset markets.

My *fourth* and final comment is on the implications of Hyun's findings for emerging market monetary independence. I will keep an open mind about the real-world pertinence of the following argument, but it is one implication of thinking hard about the questions on CIP that Hyun is raising. Assume

the pattern that Hyun describes—of costs being lower when borrowing in the US currency market versus borrowing dollars by borrowing foreign currency, buying dollars with it, and using forward transactions to offset currency risk. Then $1 + i_{US} < \frac{F}{S}(1 + i^*)$, where F is the forward dollar price of the foreign currency, S is the spot dollar price of foreign currency, and $1 + i^*$ is the gross foreign-currency interest rate. But in that case also, you get another inequality: $\left(\frac{F^{-1}}{S^{-1}}\right)(1 + i_{US}) < 1 + i^*$. This expression states that if you reside in an emerging market and Hyun's pattern of forward rates, spot rates, and interest rates holds for emerging market currencies, then it is going to be cheaper to borrow US dollars and swap into local currency than to borrow local currency. Importantly, however, this will be true not because the dollar borrowing rate is low, but because domestic financial frictions make the effective domestic-currency borrowing rate high. This idea is also consistent with other research on the prevalence of swap-covered foreign borrowing in some emerging markets (for example, Munro and Wooldridge 2009). Clearly further research is needed, but one implication concerns the transmission to emerging markets of changes in US monetary policy. Imagine that the US raises interest rates: i_{US} goes up, and the emerging market central bank raises its short term interest rate to match that. If Hyun's empirical regularity holds—the swap basis rises when US monetary policy tightens—then the basis gap will widen, making it relatively more attractive to borrow US dollars and swap into domestic currency. In turn, this widening has the effect of cushioning the impact of the domestic interest rate rise on domestic financial conditions. Is this correct? If so, is it likely to be important? In truth, I have no idea. But the possibility illustrates that in this world where CIP does not hold, the process through which US dollar liquidity conditions are transmitted across borders—particularly to emerging markets—is likely to be complex and subtle and involve transmission mechanisms that we do not yet fully understand.

In sum, Shin's chapter is very useful and thought provoking, one that will surely help to encourage much future research.

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This is a section of [doi:10.7551/mitpress/11130.001.0001](https://doi.org/10.7551/mitpress/11130.001.0001)

The State of Economics, the State of the World

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Citation:

The State of Economics, the State of the World

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DOI: 10.7551/mitpress/11130.001.0001

ISBN (electronic): 9780262353472

Publisher: The MIT Press

Published: 2020



The MIT Press



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This book was set in Stone Serif and Stone Sans by Westchester Publishing Services. Printed and bound in the United States of America.

Library of Congress Cataloging-in-Publication Data

Names: Basu, Kaushik, editor. | Sepúlveda, Claudia Paz, 1969– editor. | Rosenblatt, David, editor.

Title: *The state of economics, the state of the world* / edited by Kaushik Basu, Claudia Sepulveda, and David Rosenblatt.

Description: Cambridge, MA : MIT Press, [2019] | Includes bibliographical references and index.

Identifiers: LCCN 2018046336 | ISBN 9780262039994 (hardcover : alk. paper)

Subjects: LCSH: Economic development. | Information technology—Economic aspects. | Monetary policy. | Social change.

Classification: LCC HD82 .S8223 2019 | DDC 330.1—dc23

LC record available at <https://lcn.loc.gov/2018046336>

10 9 8 7 6 5 4 3 2 1