



Economic Letter

External Debt Sheds Light on Drivers of Exchange Rate Fluctuations

by J. Scott Davis

ABSTRACT: During a financial panic, a major driver of exchange rate fluctuations is a country's amount of external debt, or funds borrowed from foreign lenders. However, not all debt has the same impact on rate movements.

During times of financial crisis and panic, global capital flows can suddenly shift. Such movements were particularly evident in the months following the September 2008 collapse of Lehman Brothers, when global investors engaged in a flight to quality, selling risky positions and buying safe assets. The U.S. dollar rapidly appreciated because investors trusted the U.S. as the safest destination for their savings.

The New Zealand dollar, British pound, Swiss franc and Singapore dollar performed much as the U.S. dollar did during the first half of 2008 (*Chart 1*).

Starting in late summer, the British pound and the New Zealand dollar suddenly began to depreciate. From then through the end of the year, the two currencies each lost about 30 percent of their value against the dollar. The Swiss franc and the Singapore dollar changed little over the period.

Switzerland and Singapore were two of the largest creditor nations in the world at the end of 2007, with external assets far exceeding external debt. New Zealand and the U.K. were both debtor nations, with large net external debt positions. More importantly, the kind of debt determined investor sentiment toward the debtor nations' currencies.

Balance of Payments

A country's current account measures the net flow of capital into the country because of currently produced goods and services. It includes the trade balance (exports minus imports), the net income from investments held abroad and also some unilateral transfers such as remittances and foreign aid. The capital and financial account measures the net flow of capital into a country because of private capital transactions (purchase or sale of stocks, bonds, etc.).

The sum of the current account and the capital and financial account measures the net flow of capital into a country; if this net flow is not equal to zero, it must end up as an increase or a decrease in foreign exchange reserves held by the central bank.¹

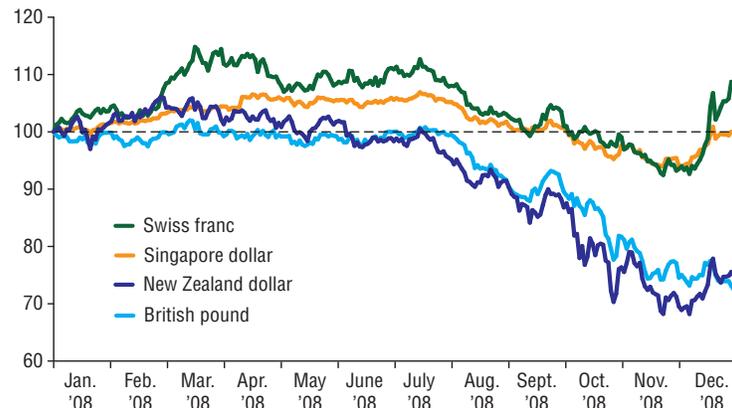
The fundamental balance-of-payments identity—the current account plus its capital account must equal the net change in official reserves—is simply an accounting tenet. It measures the flow of capital into and out of a country and states that these capital flows must balance.

The situation when the sum of the current and capital accounts is greater than zero is referred to as a balance-of-payments surplus. The balance-of-payments surplus puts upward pressure on the value of the currency.

Chart
1

Some Currency Values Held, Others Declined in Late 2008

Currency value vs. U.S. dollar, index: Jan. 1, 2008 = 100



SOURCES: International Monetary Fund; Haver Analytics.

▶ During the recent global financial crisis, capital inflows into many countries were driven not by factors specific to that particular country but by global risk and risk aversion.

If the central bank does not try to actively manage the exchange rate and allows the currency to “float,” the upward pressure leads to exchange rate appreciation. When a currency appreciates, foreign goods and assets become cheaper to domestic residents and domestic goods and assets become more expensive to foreign residents. This change in relative prices in the goods market causes the trade balance, and thus the current account balance, to fall. As investors switch from buying domestic assets to the now relatively cheaper foreign assets, the capital account balance falls as well. This process continues until the exchange rate appreciates to the point where the balance of payments is no longer in surplus, and the sum of the current and capital accounts is zero.

If instead the central bank tries to manage the value of the domestic currency, it would accumulate foreign exchange reserves in an amount equal to the balance-of-payments surplus, thus satisfying the balance-of-payments identity without a change in either the current or capital accounts. However, we will restrict our analysis to countries that float their currency and thus are much less likely to use foreign exchange accumulation to manage the value of the currency.

One factor that could affect a country's balance of payments is a change in global investor sentiment that leads to declining capital inflows. During the recent global financial crisis, capital inflows into many countries were driven not by factors specific to that particular country but by global

risk and risk aversion, several studies have shown.² A sudden increase in global risk aversion that leads to a sudden drop in capital inflows will appear as a sudden decrease in the capital account. Among nations with currencies that float, heightened global risk aversion will lead to a declining exchange rate in a country highly dependent on capital inflows from abroad.

Exchange Rate Vulnerability

Some countries are net debtors and some are net creditors. Net debtors rely on capital inflows from abroad to finance and roll over debt and thus are more susceptible to a sudden reversal of the inflows. In times of heightened risk aversion, global investors can demand repayment for a country's external liabilities. This repayment would cause a country's net capital inflows to shrink dramatically. This would be represented as a negative shift in the capital account, resulting in exchange rate depreciation.

However, the speed at which global investors can demand repayment, and essentially “cash out” of an investment, is not the same for all types of debt. Capital flows and a country's international investment position can be divided into two broad categories: foreign direct investment (FDI) and non-FDI.

FDI investments are much less liquid. FDI assets may include a large stock of physical capital, like a factory, or a large stake in a local company, which can't be sold at a moment's notice. Non-FDI assets include portfolio debt or portfolio equity,

or certain types of short-term bank lending. These investments are much more liquid, and global investors can either sell or simply refuse to roll over a short-term loan. Both would result in a sudden fall in a country's capital account.

By this reasoning, the countries that are most vulnerable to a sudden shift in capital inflows and a sudden fall in the capital account would be countries with a large stock of net non-FDI external liabilities. Countries that are highly indebted, but indebted because of a high stock of FDI external liabilities, are much less at risk.

A sample of 42 countries' exchange rates against the U.S. dollar provides an interesting view. During the first seven months of 2008, exchange rates were fairly stable (*Chart 2*).³ On average, they appreciated about 4 percent against the dollar at the beginning of August. Later that month, the rates depreciated sharply, and following the Lehman collapse in September, the depreciation accelerated as a global financial crisis sparked a flight to quality. Investors sold riskier foreign investments and bought safe securities.

Splitting the sample into the 21 countries with the highest ratios of non-FDI external debt to GDP and the 21 with the lowest ratios reveals that the currencies of countries with the most non-FDI external debt depreciated sharply in the fall of 2008. By comparison, those with the least non-FDI external debt were relatively unaffected.

During the fall of 2008, countries with

the highest amount of non-FDI external debt saw a rapid deterioration in their capital accounts. This led to a balance-of-payments deficit that significantly pressured the exchange rate downward. Countries with the lowest levels of non-FDI external debt did not see the same shift in capital flows and thus did not experience the same pressure on their currencies.

The same shift in capital flows should not occur in countries with greater FDI external debt because this type of debt is much less liquid than non-FDI external debt. Splitting the 42 countries into the 21 with the highest ratios of FDI external debt to GDP and the 21 with the lowest reveals virtually no difference in exchange rate performance across the two sub-groups during the flight-to-quality episode (*Chart 3*). Neither high nor low FDI external debt pressured the exchange rate.

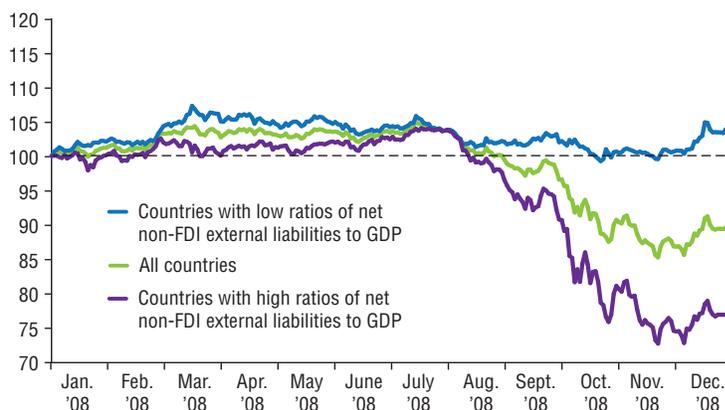
A statistical analysis using regression confirms these results. When there is no attempt to distinguish between FDI and non-FDI external liabilities, countries with higher ratios of net external debt to GDP saw greater exchange rate depreciation in 2008. Cross-country differences in net external debt ratios explain 12 percent of the cross-country variation in currency performance in 2008.

In an alternative regression that separates net FDI external debt and net non-FDI external debt, the analysis finds that countries with higher ratios of net non-FDI external debt to GDP experienced greater exchange rate depreciation in 2008.

▶ *During the fall of 2008, countries with the highest amount of non-FDI external debt saw a rapid deterioration in their capital accounts. This led to a balance-of-payments deficit that significantly pressured the exchange rate downward.*

Chart 2 Currencies in Countries with High Ratios of Non-FDI External Debt to GDP Didn't Fare Well in 2008

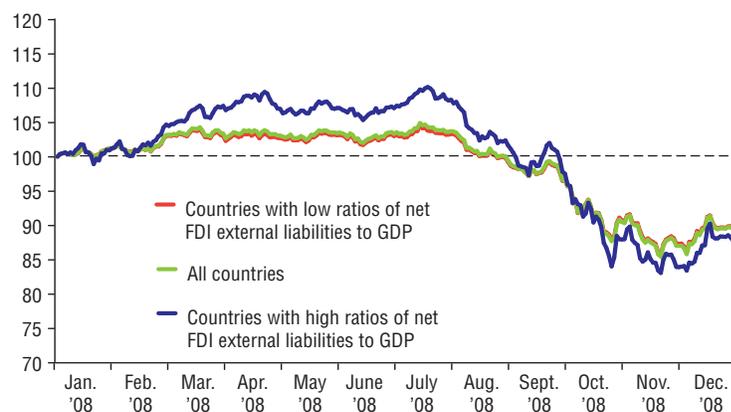
Currency value vs. U.S. dollar, index: Jan. 1, 2008 = 100



SOURCES: International Monetary Fund; Haver Analytics.

Chart 3 External Foreign Direct Investment Liabilities Have Little Effect on Currency Fluctuations

Currency value vs. U.S. dollar, index: Jan. 1, 2008 = 100



SOURCES: International Monetary Fund; Haver Analytics.

However, the level of the net FDI external debt ratio had no effect. Cross-country differences in the ratios of non-FDI external debt to GDP can explain more than 22 percent of cross-country differences in exchange rate performance in 2008.

British Pound, New Zealand Dollar

New Zealand has a ratio of net external debt to GDP of 78 percent, making it one of the most indebted countries in the sample. At the same time, the U.K. has a ratio of net external debt to GDP of 22 percent. Switzerland, with a ratio of net external assets to GDP of 134 percent, and Singapore, whose external asset ratio is 200 percent, are the two largest creditors in the sample of 42 countries.

Thus, it is easy to understand why currencies of debtor nations such as New Zealand and the U.K. depreciated in late

2008, while currencies of creditors like Switzerland and Singapore did not. The path of the British currency in 2008 was similar to the path of the New Zealand currency, as Chart 1 shows. This is true even though New Zealand's external debt-to-GDP ratio is nearly four times higher than the U.K.'s.

When we divide net external debt into FDI and non-FDI debt, the U.K. and New Zealand situations become more similar. The U.K. has a ratio of net non-FDI external debt to GDP of 42 percent, similar to New Zealand's 39 percent. They are very different in terms of total indebtedness because New Zealand also has a ratio of net FDI external debt to GDP of 39 percent, but the U.K.'s external FDI ratio is *minus* 20 percent, meaning the U.K. is a net creditor in FDI.

As the analysis here shows, whether a

country is a net creditor or a net debtor in FDI should not affect the performance of the exchange rate at a time of global panic and shifting global capital flows. However, non-FDI external debts are much more liquid and, thus, the ratio of net non-FDI external debt to GDP provides an indication of an exchange rate's path. Given this, it makes perfect sense that the performance of the New Zealand dollar in 2008 was similar to that of the British pound.

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Notes

¹ For simplicity, we refer to the capital and financial account as the capital account.

² See "Dilemma Not Trilemma: The Global Financial Cycle and Monetary Policy Independence," by Hélène Rey, paper prepared for the Jackson Hole, Wyo., Economic Policy Symposium, Aug. 23–24, 2013; "Capital Flow Waves: Surges, Stops, Flight, and Retrenchment," by Kristin J. Forbes and Francis E. Warnock, *Journal of International Economics*, vol. 88, no. 2, 2012, pp. 235–51; "Capital Flows, Push Versus Pull Factors and the Global Financial Crisis," by Marcel Fratzscher, *Journal of International Economics*, vol. 88, no. 2, 2012, pp. 341–56; and "Surges," by Atish R. Ghosh, Mahvash S. Qureshi, Jun Il Kim and Juan Zalduendo, *Journal of International Economics*, vol. 92, no. 2, 2014, pp. 266–85, among others.

³ This set of 42 countries includes all countries for which the necessary external debt and asset data are available and that in 2008 maintained either a floating exchange rate or a managed float, according to the classification in "Exchange Rate Arrangements Entering the 21st Century: Which Anchor Will Hold?" by Ethan Ilzetzki, Carmen Reinhart and Kenneth Rogoff, unpublished paper, University of Maryland and Harvard University, 2008.

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