

Macroeconomic volatility and external imbalances

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June 2008

Long Abstract

In this paper we explore, both empirically and theoretically, the relationship between macroeconomic volatility of a country and its net foreign asset position.

First we document that macroeconomic volatility is a statistically robust and economically significant determinant of external imbalances for OECD economies over the period 1970.1-2006.4. In particular we find that, after controlling for a wide array of possible determinants of imbalances, including country and time fixed effects, macroeconomic volatility, measured as the standard deviation of quarterly GDP over a 10 years window, is negatively associated to external imbalances, measured as net foreign assets over GDP. In particular when the standard deviation declines from 2% to 1% (many industrialized countries experienced a decline of this magnitude over the last 25 years), net foreign asset position decline by about 12%. This relationship is strongly significant (the p-value exceeds 20) and robust to different measures of volatility, to the inclusion of additional controls (such as average growth over the period), and to changes in the sample of countries.

In order to understand what drives this relationship we consider a standard 2 country international business cycle set-up. In this set-up we analyze the relationship between volatility and imbalances under a wide array of possible international financial structures, including simple bond trading, trading in stocks and complete markets. Our main theoretical contribution is to show that, *under all market structures*, a permanent decline in volatility in one of the countries leads to a reduction of the foreign asset position of that country. The explanation of this effect though is very different across market structures. In an environment with simple bond trading, the decline of volatility in a country leads to a decline in its desire to do precautionary saving and thus leads to a reduction in its equilibrium external assets. In environments with more sophisticated international financial markets the precautionary motive is small or non-existent, but the country experiencing the reduction in volatility will expect a decline in its future investment and the lower expected investment implies a lower net foreign asset position. The reason why expected investment falls with volatility is due to the convexity of investment function relative to productivity (Oi 1961).

Quantitatively we also show that calibrated versions of the setup can generate a relationship between volatility and imbalances that is of the same order of magnitude of the one we document in the data.

We conclude that macroeconomic volatility is a quantitatively important factor to understand and forecast the evolution of external imbalances across OECD countries.