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Evaluating the impacts of foreign direct investment, aid and saving in developing countries

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Abstract

We develop an open-economy model to demonstrate how saving, aid and direct investment inflows affect investment under asymmetric information. The model that relates a firm's net worth to investment suggests that the relative impact of these financial sources depends on a country's income level, financial structure, and governance infrastructure. We estimate the impact of each source using panel data for 64 developing countries. The results provide support for the view that net worth matters, and suggest that the influence of financial systems can explain why saving-investment correlations are high for developed countries and lower for developing countries.
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1. Introduction

Since it is difficult for developing countries to finance their total investment by domestic savings, foreign resource flows play an important role; foreign resource flows are not only private flows such as foreign direct investment (FDI) and portfolio inflows, but also official resource

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flows such as grants.[1] This paper demonstrates how each of these financial sources affects domestic capital formation by developing an analytical framework. We use an open-economy model that relates a firm's net worth to investment under asymmetric information (between lenders and borrowers), and provide a theoretical framework to understand how savings, FDI and foreign aid affect domestic investment. To examine the role of these financial sources, we estimate the impacts of them on domestic fixed investment using panel data for 64 developing countries over the period 1980−1999.

The relationship between domestic saving and investment has been a major focus of research in international macroeconomics for two decades. Feldstein and Horioka (1980) investigated the effect of saving rates on investment rates, and found that the coefficient of saving rates was high (close to 1) in a study of 16 OECD countries; they concluded that the high saving-investment correlation implied capital immobility. A lot of authors have criticized this interpretation.[2] However, most of them support Feldstein and Horioka's (1980) finding. For example, Murphy (1984), Dooley et al. (1987), Bayoumi (1990) and Tesar (1991) find the high saving-investment correlation using cross-country data; time-series studies such as Obstfeld (1986), Bayoumi (1990) and Tesar (1991) and panel-data studies such as Coiteux and Olivier (2000), Jansen (2000) and Kim (2001) also replicate the finding.

It is interesting to note that Feldstein and Horioka's result holds only for OECD countries; by using the sample of developing countries, Dooley et al. (1987), Wong (1990) and Vamvakidis and Wacziarg (1998) show that the saving-investment correlations become much smaller (close to 0).[3] While Dooley et al. (1987), Vamvakidis and Wacziarg (1998) and Isaksson (2001) argue that foreign aid explains the low correlations for developing countries, none of these authors believe that lower saving-investment correlations reflect higher capital mobility in developing countries. The lower estimated coefficient on saving for developing countries remains an open question (our empirical results suggest that a difference in financial systems provides an explanation for this). High saving-investment correlations in OECD countries and lower correlations in developing countries suggest that the estimated coefficient on saving in the Feldstein−Horioka regression cannot be a perfect measure of the degree of capital mobility.[4]

Accordingly, although we run the Feldstein-Horioka regression in this paper, we do not use the estimated coefficient as a measure of capital mobility. To explain what the positive coefficient of saving represents in an open economy, we use the model of North−South capital flows

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[1] See the World Bank's Global Development Finance. In the 1990s, FDI became the largest source of finance for developing countries while official loans were also important in low income countries.

[2] Many papers such as Murphy (1984), Obstfeld (1986), Bayoumi (1990), Wong (1990) and Baxter and Crucini (1993) argue that high saving-investment correlations can arise even if capital is mobile internationally. Murphy (1984) argues that saving-investment correlations are large for large countries. Obstfeld (1986) explains the correlation by a nation's labor-force growth, Bayoumi (1990) by a country's policy such as capital controls and fiscal policy, and Wong (1990) by the existence of nontraded goods. Baxter and Crucini (1993) focus on productivity shocks, and show that the observed positive correlation arises within a parameterized equilibrium model with perfect mobility of capital.

[3] Although most previous studies do not explain what the low saving-investment correlations in developing countries represent in a formal model, there are several exceptions. Wong (1990) demonstrates that the saving-investment correlation can be explained by the import−GDP ratio (the size of the nontraded sector). Baxter and Crucini (1993) show that (in time-series studies) the correlations are lower for small countries using a real business cycle model. See also Montiel (1994), Mamingi (1997) and Coakley et al. (1999) for the saving-investment correlation in developing countries.

[4] Shibata and Shintani (1998) use consumption−output correlations to measure the degree of capital mobility. Their approach is based on a formal intertemporal optimization model.