Journal of International Money and Finance 32 (2013) 77–98

Contents lists available at SciVerse ScienceDirect

Journal of International Money and Finance

journal homepage: www.elsevier.com/locate/jimf

External and budget deficits in some developing countries

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JEL classification:
E62
F32
F41

Keywords:
Covariance decomposition
Vector autoregression
Small open-economy
Overlapping generations
Heterogeneous goods

ABSTRACT

This paper documents and explains the positive comovement between the external and budget deficits of developing countries for which post-1960 time-series data are available. First, the estimates indicate that the empirical covariance between these deficits is always positive and is statistically significant for many cases. Second, the empirical covariance is close to that predicted from a tractable small open-economy, overlapping-generation model with heterogeneous goods capturing the joint behavior of the external and budget deficits. Also, the predicted covariance is induced by shocks which are closely related to internal conditions such as domestic resources and fiscal policies, and to a much lesser extent to external conditions such as the world interest rate, real exchange rate, and terms of trade.

1. Introduction

The objectives of this paper are twofold. First, we document the comovement between the external and budget deficits for developing countries. Second, we explain this comovement from a model capturing the joint behavior of the external and budget deficits. It is worth stressing that these objectives are especially relevant for developing economies, since they are often perceived to face unsustainable financial positions at both country and government levels. The external deficit captures changes of foreign indebtedness, which provides information about the financial solvency of a country. The budget deficit measures changes of public indebtedness, which is related to the financial solvency of a government.

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0261-5606/$ – see front matter
doi:10.1016/j.jimonfin.2012.03.002

First, this paper highlights the existence of a positive comovement for all the 24 developing countries for which post-1960 data are available, as the external balance deteriorates when the budget deficit increases. Our analysis relies on the time-series of the external and budget deficits to extract the comovement that is specific to each country. Our primary measure of the comovement corresponds to the covariance between the external and budget deficits for each country. Empirically, the covariance is numerically positive for all countries and statistically significant for many cases. These results are robust to alternative measures of external deficits and exclusion of multivariate outliers of external and budget deficits.

Interestingly, our time-series findings are consistent with those obtained from panel regressions extracting the comovement that is common across countries. That is, the panel-regression results indicate that the estimated coefficient relating the external deficit to the budget deficit is always statistically positive (e.g. Calderon et al., 2007; Gruber and Kamin, 2007; Chinn and Prasad, 2003; Calderon et al., 2002). A similar relation is recovered from the estimated coefficients relating investment and/or saving to the budget deficit and the identity stating that the current account corresponds to national saving minus investment (Masson et al., 1998; Fry, 1989, 1993).

Second, this paper explains the positive comovement between the external and budget deficits for 12 of the 24 initial developing countries for which all time-series are available for the estimation exercise. To capture the joint behavior of these deficits, our analysis estimates a tractable small open-economy, overlapping-generation model with heterogeneous goods. The model offers the advantage of involving the external and internal conditions which are often considered for developing countries. The external conditions are the world interest rate, real exchange rate, and terms of trade, whereas the internal conditions are associated with domestic resources and fiscal policies, where these policies may reflect changes of the government's abilities to collect taxes due to corruption, black markets, or informal markets, for example. Also, the model captures different degrees of imperfectness of intergenerational linkages and financial markets, and as such potential liquidity constraints faced by developing countries.

The parameters of the model are estimated for each country such that the predicted second moments of the external and budget deficits, and in particular the covariance between these deficits, are close to their empirical counterparts. The predicted covariance is then decomposed into contributions measuring the portions attributable to shocks associated with each internal and external conditions. The contributions with large positive values provide information on the shocks corresponding to the prime determinants of the positive comovement between the external and budget deficits.

The results reveal that the contributions are almost always positive, so that most shocks induce a positive relation between the external and budget deficits for all countries. Also, the magnitude of the contributions indicates that the shocks associated with internal conditions, and especially domestic resources net of public absorptions, are the most important factors explaining the positive comovement between the external and budget deficits for most countries. Moreover, simulation exercises suggest that the predominance of the shocks related to internal conditions, and, in particular, government-expenditure shocks, occurs when the degree of imperfectness of intergenerational linkages or financial markets is large. Finally, a robustness analysis confirms that the contributions can be viewed as providing a lower bound of the importance of internal conditions in the determination of the positive comovement between the external and budget deficits.

It is worth stressing that our findings are not directly comparable with those obtained from earlier single-equation studies. This is because our analysis explains the joint behavior of the external and budget deficits, whereas single-equation studies explain the individual behavior of either the external deficit or budget deficit. On the one hand, these studies highlight that the external deficit increases following a rise of output, it decreases after an augmentation of the world interest rate, and it decreases following an improvement of the terms of trade (e.g. Calderon et al., 2007; Chinn and Prasad, 2003; Calderon et al., 2002). On the other hand, the budget deficit and the governments' borrowing possibilities are not significantly affected by changes of output, whereas the probability of rescheduling the public debt increases following a rise of the world interest rate, and the budget deficit increases after an improvement of the terms of trade (e.g. Combes and Saadi-Sedik, 2006; Roubini, 1991; Berg and Sachs, 1988). However, these results obtained form single-equation analyses provide little information about