



# The determinants of the composition of public debt in developing and emerging market countries<sup>☆</sup>

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## Abstract

This paper uses a new dataset on the composition of public debt in developing and emerging market countries to look at the correlation between country characteristics and domestic debt share. While the paper finds that most variables have the expected sign, it also finds that country characteristics cannot explain regional differences in the composition of public debt. Moreover, the paper finds a weak correlation between inflationary history and the composition of public debt. The paper explores the determinants of this finding and shows that the results are driven by the presence of capital controls.

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## 1. Introduction

The objective of this paper is to document recent trends in the composition of public debt across a large sample of developing and emerging market countries and test whether there are empirical regularities that explain the choice between domestic and external public debt. Our analysis yields two surprising results. First, contrary to what is found by several studies on the determinants of bond market development in emerging market countries, we find that our large set of control variables plays a limited role in explaining cross-country differences in the

composition of public debt. Second, we find that inflationary history has no statistically significant effect on the composition of public debt. In particular, we do not find evidence that countries with a history of high inflation have lower shares of domestically issued debt. When we look carefully at this latter result, we find that it is driven by the presence of capital controls. We show that in countries with high levels of capital controls there is no statistically significant correlation between domestic debt share and inflationary history. However, in countries with low and intermediate levels of capital controls, we find that inflationary history has a negative and statistically significant impact on domestic debt share. This suggests that capital controls have a negative effect on the development of the domestic debt market in countries characterized by high policy credibility but may help developing the domestic bond market in countries characterized by low policy credibility.<sup>1</sup>

We are not the first to study the determinants of debt composition in developing and emerging countries. However, previous research focused on bonded debt and restricted the analysis to the 27 emerging market countries covered by the Bank of International Settlements (BIS) survey on domestic securities. To the

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<sup>1</sup> Of course this positive effect is likely to vanish if countries that impose capital controls continue to adopt irresponsible policies. However, in countries that are seriously committed to improve policy credibility, capital controls can be considered as an additional policy instruments in building a local debt market. For a discussion of financial repressions see Reinhart and Sbrancia (2011).

best of our knowledge, our paper is the first that covers a large sample of countries. Four papers that are closely related to our work are Burger and Warnock (2006), Claessens et al. (2007), Eichengreen and Luengaruemitchai (2004), and Borensztein et al. (2008).

Burger and Warnock (2006) were the first to use BIS data on domestic securities to study the determinants of local bond market development (they use both private and public sector bonds). Their sample covers up to 49 countries and includes 27 emerging market countries and 22 advanced economies. The main findings of Burger and Warnock are that policies and institutions play an important role in the development of the local government bond market. In particular, they find that low inflation, rule of law, and country size are positively correlated with the development of the domestic government bond market and that the fiscal balance and GDP growth are negatively correlated with the size of the government bond market.

While Burger and Warnock work with cross-sectional data, Claessens et al. (2007) use panel data to study the determinants of the development of the market for local currency government bonds. Their sample (which is also based on BIS data) covers up to 36 countries (of which 12 are emerging markets and the remaining are advanced economies) for the 1993–2000 period. Their results are consistent with those of Burger and Warnock (2006). In particular, they find that country size, size of the banking system (as measured by total deposits over GDP), good institutions, low inflation, flexible exchange rates, and fiscal burden are positively correlated with the size of the domestic bond market. In addition, they find that countries with flexible exchange rates tend to have larger domestic bond markets.

Eichengreen and Luengaruemitchai (2004) also use panel data techniques and BIS data to study the determinants of domestic bond market capitalization in 41 countries over the period 1990–2001 (they do not restrict their analysis to government bonds and include all types of issuers). Compared to Claessens et al. (2007), Eichengreen and Luengaruemitchai (2004) use a larger set of controls and confirm the finding that country size and institutional quality are positively associated with the development of the domestic bond market. Contrary to Claessens et al. (2007), however, Eichengreen and Luengaruemitchai (2004) find that lower exchange rate volatility is positively correlated with the size of the domestic bond market and argue that this might be due to the fact that a fixed exchange rate lowers currency risk and may encourage foreign participation. They also find that countries without capital controls tend to have larger bond markets.

Borensztein et al. (2008) build upon Eichengreen and Luengaruemitchai (2004) but expand their sample and distinguish between the determinants of the development of markets in government, corporate and financial sector bonds, rather than considering the bond market as a single aggregate. Moreover, their analysis uses a difference-in-differences methodology suitable for identifying the differential effects of country characteristics on the development of different segments of the bond market. Finally, they run separate regressions for emerging markets. In line with previous studies, Borensztein et al. (2008) find that country size is significantly correlated with the size of bond

market but that the relationship is non-linear. In addition, they find that bond market development is positively correlated with trade openness, total public debt, institutional quality, lack of capital controls, and the privatization of the pension system. With respect to interest rates, they find that the level of the domestic interest rate is negatively correlated with market capitalization but that there is no significant correlation between banking spreads and the size of the government bond market. When they focus on a sub-sample of 21 emerging market countries, Borensztein et al. (2008) find that country size no longer appears to matter and that the positive effect of public debt becomes much smaller.

There are three differences between our paper and the four papers discussed above. The first difference relates to the definition of public debt. The previous papers focused on bond market development while we focus on total public debt.

The second difference is in regard to country coverage. The papers discussed above examine a relatively small group of emerging market countries, whereas our paper covers up to 95 developing countries, of which 33 are low-income countries. Moreover, the analysis of the previous papers jointly included developing and industrial countries (with the partial exception of Borensztein et al. (2008) and one may suspect that most of the variance in bond market development was driven by the difference between these two groups of countries. Accordingly we address this issue in this paper by focusing exclusively on developing countries.

The third difference relates to the methodology. While previous studies either focused on cross-country differences (Burger and Warnock, 2006) or jointly looked at cross-country and within countries differences, our battery of statistical tests also use fixed effect estimations which allows for the isolation of the determinants of changes within countries.

## 2. Data and trends

Lack of reliable data has been the main obstacle to the analysis of the composition of public debt in developing countries. In this paper, we use a new public debt dataset (assembled by Panizza, 2008) which aims to capture both the domestic and external component of public debt. This new dataset consists of an unbalanced panel of 1558 observations covering 104 developing countries for the 1990–2007 period (Table 1 shows the coverage of the dataset by year and region).<sup>2</sup> In the remainder of this paper we use a subset of the original dataset based on an almost balanced panel that covers developing countries for the 1994–2006 period.

### 2.1. Trends

Domestic public debt is not a new phenomenon for developing countries. Reinhart and Rogoff (2008) collect data on

<sup>2</sup> Most of the data refer to central government debt, but when central government debt data were not available, Panizza (2008) used data for the general government and the non-financial public sector.

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