The structure of sub-national public debt in Spain: a reflection of fiscal vulnerabilities?*

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Abstract

We analyze the determinants of the structure of public debt in the case of Spain, from a sub-national perspective. The endogenous shift in the composition of debt among short- vs long-term instruments, loans- vs securities, or residents vs non-residents, depends on observable measures of credit and liquidity risks. Thus, excessive reliance on short-term and "captive" (loans, residents) instruments might be an indicator of potential vulnerabilities to international financial crises, in particular when governments face a debt crisis that mixes elements of illiquidity and insolvency. On the other hand, though, some theories advocate that the structure of public debt should be an ex-ante economic stability management device. We carry out our analysis by using a newly available dataset of quarterly data for the period 1995Q1-2012Q4, to run our GMM estimates.

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Extended abstract

Spanish public debt level more than doubled in the 2007-2012 period, reaching euro area averages in only four years, after a prior long period of downsizing that started in the mid 1990s. The overall increased has been reflected in the debt of the central and sub-national governments alike, leading to substantial pressure on new debt issuance and refinancing operations on maturing debt, both from the point of view of market access problems and increased costs. Thus, a great deal of attention has been paid recently to the level of government debt and the possible existence of debt thresholds or limits (see Andrés et al., 2013). Nevertheless, not only the level but also the financing method and the resulting structure of debt are relevant factors from the macroeconomic and fiscal perspectives, but have received much more limited attention in the literature. Debt financing strategies can influence for example the exposure of a given level of government to short-term liquidity pressures, the liquidity structure of the economy, and the developments of the interest burden of the government debt. Thus, the focus of our paper is in understanding the dynamics of the structure of public debt in the case of Spain by means of the study of the composition of sub-national (regional) debt.

The increase in the level of sub-national debt witnessed in Spain in the crisis period has come hand-in-hand by a change of its structure. Traditionally, sub-central governments in Spain have relied more intensively on loans rather than on securities as witnessed in Figure 1 (Panel 1), most noticeably in the case of local entities whose ratio of loans-to-securities almost doubled between 2000 and 2011. Regional governments managed to reduce in a steadily manner the ratio of loans-to-securities from some 160% around 1995 to close to 80% by 2007. In that period, nevertheless, the ratio showed some cyclical variation, a behavior that has been quite noticeable since the beginning of the most recent crisis by mid 2007. Since then, the downward trend has been reversed, and in 2012Q4 the stock of regional loans amounted to some 30% of the stock of regional debt in the form of securities. A similar behavior is displayed by the ratio of short-term to long-term sub-central debt, as can be seen in Figure 1, Panel 2.

The analysis of the structure of sub-sovereign debt can be instrumental to the analysis

of market-induced fiscal discipline. As shown in Figure 2 for the case of Regional debt, a number of debt-structure ratios – namely, the ratio of short term to long term debt, the ratio of loans to securities, and the ratio of loans by residents to those by non-residents – showed positive (unconditional) correlations over the period 1995-2011, with implicit interest rates on overall regional debt. While the latter is not a perfect measure of the cost associated with new debt issued, it is the only comprehensive measure of the cost of financing available and, in any case, its evolution should be a fair proxy of it.[1] As shown in Figure 3, implicit rates benefited from EMU accession, and decreased more or less steadily for CCAA debt over 1995-2011, also in line with the implicit rates faced by the Central Government. Local governments' aggregate implicit interest rate remained anchored around some 2% over the whole period, with marked cyclical fluctuations that were particular important in 2007 and 2008.

A number of hypotheses can be tested. On the one hand, excessive reliance on a structure of debt leaned towards short-term instruments or easy-to-access ("captive") markets (i.e loans by residents, in particular local banking systems, vs securities in the market) might be a symptom of an increased perception of risk on the part of investors. In particular, empirical studies have found short-term debt to be an indicator of vulnerability to international financial crises (Borensztein et al., 2004; Rodrick and Velasco, 1999; Bussière and Mulder, 1999). Increased reliance on short-term debt may make a government more vulnerable in a crisis framework, because of the need to rollover increased amounts of debt. As signalled by Borensztein et al. (2004), in a case in which a debt crisis mixes elements of illiquidity and insolvency, the government would be vulnerable to a piece of bad news, whose real impact would be amplified by creditors' unwillingness to roll over their claims (see also Jeanne, 2004). In addition, short-term debt introduces another level of vulnerability for the fiscal accounts because, in an increasing interest rate environment, interest payments would increase faster the higher the fraction of short-to-long-term debt.

On the other hand, though, in an economic and fiscal crisis episode, and in case market access were not fully compromised, a shift in the composition of debt as reflected by increased

[1]The source of the debt data is the Bank of Spain. The source of interest payments' data is the IGAE. Implicit interest rates are computed as the ratio of interest payments to overall debt.

ratios of short-to-long-term debt, on the one hand, and loans-to-securities, on the other, might be expected. First, because these instruments might be the only ones available to keep on covering financing needs. Indeed, investors might be willing to hold short-term debt even in a situation in which they assign a non-zero probability to default as they may expect the sub-central government to repay them before the eventual default takes place. Second, in the case of sub-central governments' debt, investors may expect that the central government bails-out the administration under pressure, thus assigning to the default option a low probability. In the case of Spain some studies suggest that there have been de facto bail-outs of regions by the center over the past decades (see Lago-Peñas, 2005; Sorribas, 2012). Third, as Missale et al. (1997) and Campbell (1995) argue, a government committed to fiscal consolidation and debt stabilization may reduce the cost of debt servicing by issuing short-term debt. This is the case in a framework of asymmetric information in which the government and private investors do not share the same information (or perception) and thus long-term debt instruments pay too high interest rates as a reflection of credibility problems. A government can thus issue short-term debt to signal its resolution to carry out its fiscal consolidation plans.

We focus on the determinants of the structure of sub-national (regional) public debt in Spain over 1995 to 2012 for a number of reasons. First, the use of regional data provides a cross-section data dimension that allows us to have a sufficient sample size for the analysis of the Spanish case. Second, sub-national debt developments in Spain have received recently significant attention (see Hernández de Cos and Pérez, 2013) due to the significant part of the fiscal consolidation that would be assigned to regional governments. In addition, in the course of 2011 and, particularly, 2012, the central government put into operation a number of liquidity-support-funds aimed at relieving liquidity-related pressure on sub-national governments, in part because of de facto exclusion of some regional governments form the public debt markets. Third, Spain is the sixth sub-sovereign bond issuer world-wide, after the US, Germany, Japan, China and Canada (see Canuto and Liu, 2010, Romeu, 2011). In the fourth quarter of 2012 total outstanding regional and local public debt amounted to 18.5 bn euro (17.6% of Spanish GDP), of which some 36% was in the form of securities (other than shares). Finally, in this paper we exploit a newly available quarterly dataset on the structure of regional government's debt.[2]

The paper will be organized as follows. In next section we present some descriptive evidence on the structure of sub-sovereign public debt in Spain and describe the data used in the main body of the analysis. In turn, in the following section we pose the main empirical hypotheses to be tested, in the framework of the stylized theoretical model of Bacchiocchi and Missale (2005). Finally, we will present the empirical models to be estimated, the results and the conclusions and policy messages that can be drawn from the analysis.

[2]Since September 2012 the Bank of Spain disseminates on a regular basis and at the quarterly frequency information on the structure of regional and local governments' debt, for the period starting in 1995Q1.

Figure 1: The breakdown of subnational EDP debt by type of debt (loans vs securities), and by maturity (short-run vs long-run).

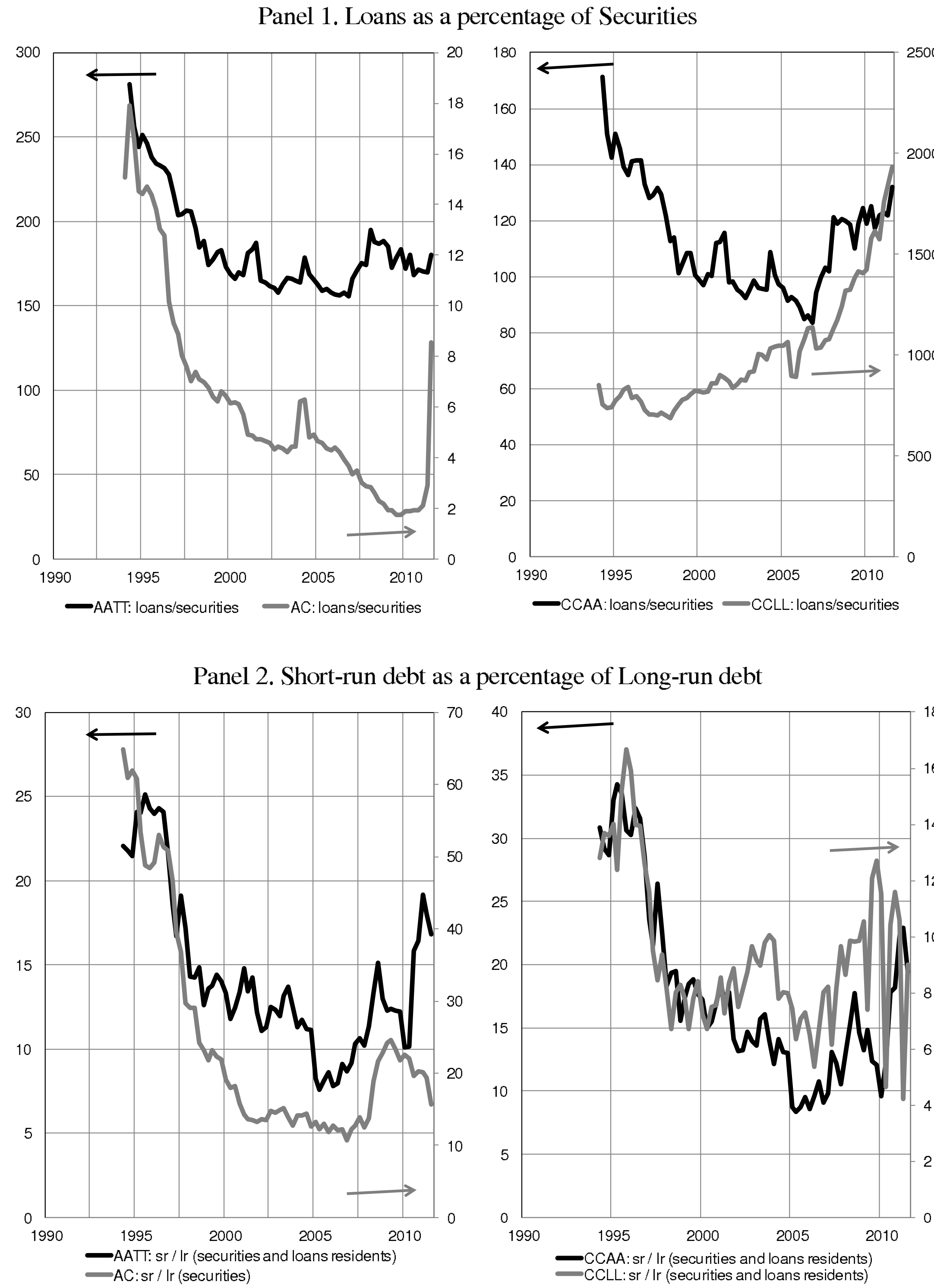

Figure 2: Regional governments' debt: vulnerability indicators.

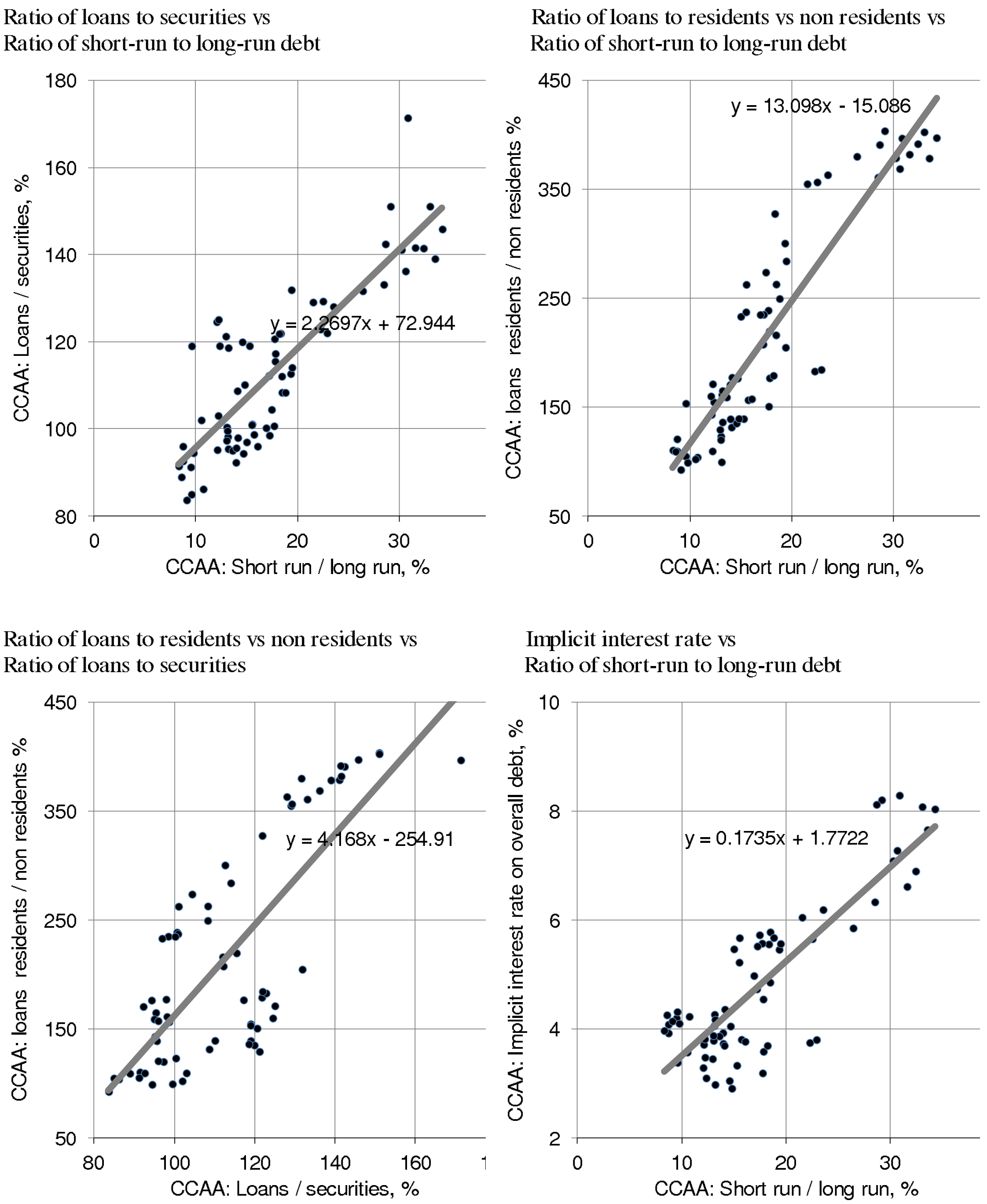

Figure 3: Implicit interest rates on Spanish government debt, by subsectors of the General Government.