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## Spanish Treasury bond market liquidity and volatility pre- and post-European Monetary Union <sup>☆</sup>

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### Abstract

Spain enacted a number of important debt management initiatives in 1997 to prepare its Treasury bond market for European Monetary Union. We interpret the impacts of these changes through shifts in a bond liquidity “life cycle” function. Furthermore, we highlight the importance of expected average future liquidity in explaining Spanish bond liquidity premiums. We also uncover pricing biases that support the Spanish Treasury’s tactical decision to target high-coupon, premium bonds in its pre-EMU debt exchanges. Finally, we show that EMU has been associated with both a decrease in bond yield volatility and an increase in pricing efficiency.

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## 1. Introduction

This paper examines liquidity and volatility in the Spanish Treasury bond market within the context of debt policy shifts engineered by the Spanish government in preparation for entrance into European Monetary Union.<sup>1</sup> The Treasury's mid-1997 debt management innovations were designed to make Spanish debt more attractive to the new class of Pan-European government bond investors created under European Monetary Union. These measures included (1) increases in the size of new issues, (2) increases in the time between bond issuance tranches, (3) development of a strips market and (4) institution of a new aggressive exchange policy to replace certain seasoned issues. A key purpose of this paper is to investigate the impact of Spain's debt management initiatives on both trading activity and valuation in its debt market. As it happens, Spain's concerns over properly preparing its markets for dramatic shifts in the relevant investor class under EMU turned out to be quite prescient. The share of Spanish government debt held by non-resident investors climbed from 25% in 1996 to 47% by February 2003.<sup>2</sup>

Analysis of Spain's actions and experiences during these special circumstances provides a number of specific insights on market structure and policy impacts of interest to both policymakers and academic researchers. To facilitate these insights, we estimate a model that relates individual Treasury issue market share of overall trading volume to a bond's age (the time since its initial auction) in a fashion best described as a liquidity life cycle. We then test for shifts in this liquidity life cycle function as a result of the Treasury's debt policy innovations. We also estimate the structure of liquidity premiums in the different maturity sectors within the Spanish bond market and quantify the impacts of Spain's EMU-related debt management policy shifts on Spanish Treasury bond valuation. We conclude by examining the impacts of European Monetary Union on volatility and pricing efficiency in the Spanish Treasury market.

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<sup>1</sup> In general, prudent debt management by any sovereign requires attention to market structure and trading costs. Indeed, one of the three debt management goals espoused by the US Treasury is to "promote efficient markets" (see the US Treasury website). Likewise, the joint International Monetary Fund-World Bank guidelines for developing country debt management list an entire menu of regulatory and market infrastructure conditions designed to enhance debt market efficiency (see Box 5, "Relevant Conditions for Developing an Efficient Government Securities Market", in [International Monetary Fund/World Bank \(2001\)](#)).

<sup>2</sup> Source: Spanish Treasury (*Tesoro Público*). In contrast, during the transition to EMU, trading volume in the MEF's (Mercado Español de Futuros Financieros) Spanish 10-year government bond future contract withered away.

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