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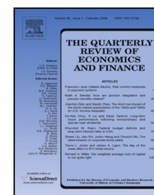

# The role of bank lending tightening on corporate bond issuance in the eurozone☆

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ABSTRACT

The availability of bank lending and corporate bond markets underwent a drastic change in the eurozone with the break out of the financial crisis. To quantify the relation between the two, this paper empirically tests the role of bank lending tightening on non-financial corporate (NFC) bond issuance in the eurozone. By utilizing a unique data set provided by the ECB Bank Lending Survey, we capture the "pure" credit supply effect on corporate external financing in a sample period of 2003–2013. We find that tightened credit standards positively affect the NFC bond issuance: a 1pp increase in banks reporting considerable tightening on loans leads to around a 7% increase in firms' bond issuance in the eurozone. The substitution effect is net of the demand for bank lending and robust to factors such as price differentials. The impact of bank credit tightening on firms' bond issuance is particularly observable in core eurozone countries. This is partially due to the underdeveloped debt capital markets in some countries.
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## 1. Introduction

Corporate bond issuance in Europe became the focus of attention in the aftermath of the financial crisis. Indeed, outstanding volumes of issued corporate bonds peaked in 2009 for all rating classes and remained at high levels afterwards (Kaya & Meyer, 2013). Admittedly, at times when other means of refinancing such as bank lending, dry up, corporations may naturally tap the debt capital markets. However, unlike their transatlantic counterparts – where tapping the bond market is inherent – debt capital market access in the eurozone is underdeveloped and corporations rely heavily on bank loans for financing. In this respect, a reduction in bank loan availability does not necessarily imply a substitution effect in the eurozone and therefore understanding the link between bank loan availability and corporations entering the bond market have a particular relevance.

In this paper, we focus on the relation between non-financial corporations' tapping the bond market and the availability of bank loans in the eurozone on an aggregate level. In doing so, we utilize the bank lending survey (BLS) of the European Central Bank (ECB) which collects answers on broad as well as detailed questions on the availability of bank loans to non-financial corporations. This paper contributes to the literature on corporate funding and capital markets in Europe in three ways. The first contribution of this paper is to present the impact of bank loan tightening on corporate bond issuance in the eurozone by differentiating between two distinct measures: long term loans and loans to large enterprises. We employ these two measures considering that, on the one hand, availability of long term loans is an economically relevant measure as loans are usually supported by a company's collateral in the form of the company's assets and contain restrictive covenants detailing what the company is allowed to do financially during the term of the loan. Consequently, a change in the availability of this measure may create an impetus for bond issuance which also requires long term commitments such as annual coupon payments. On the other hand, there is a fixed cost of entering bond markets which makes it easier for large companies to obtain bond financing than small ones. In this regard, it is relevant to focus on lending to large enterprises

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as a complementary analysis. Utilizing these two distinct measures and controlling for a number of other variables, we analyze if tightening of lending standards leads to higher corporate bond issuance in the eurozone at the aggregate level (see Becker & Ivashina, 2014 for the US at the micro level).

In a sample period of 2003–2013, we document that bank lending tightening has a pivotal role in bond issuance in the eurozone. A 1pp increase in number of banks reporting considerable tightening on long term loans leads to around a 7% increase in bond issuance in the eurozone. Although the figures may seem surprisingly large at first glance, it is important to note that changes in these factors do not usually reach the 1pp level. For instance, of the banks who report considerable tightening during the observation period almost 40% reported a less than a 1pp change indicating that a 1pp increase in tightening is actually a considerable amount in this setting.

The second contribution of this paper is to delve deeper into the magnitude of the relation between tightening in bank lending and test if this is bond issuance is invariant for different levels of tightening. More specifically, we test if our elasticity is constant for different levels of bank lending tightening. We also shed some light on the direction of elasticity and ask whether the same effect is observable in case of an easing in bank lending conditions. Expressing differently, we test if our elasticity is symmetric. We document that impact of tightening is fairly constant along different levels of tightening. Furthermore, we show that the relation between bank lending tightening and bond issuance is not symmetric and an easing in bank lending does not necessarily lower bond issuance. The fixed costs of tapping the debt capital markets and the nature of our tightening measure explain these results by and large.

The third contribution of this paper is to address the cross-country heterogeneity in the bank loan dependence and corporate bond issuance in Europe. Indeed, bond market volumes in eurozone economies such as Spain and Italy are small compared to core countries like Germany and France. Therefore, a tradeoff between bank loans and corporate bond issuance could differ between core countries vis-à-vis Italy and Spain and thus, requires further attention. Our results indicate that substitution effect is observable only in core countries and not in Italy and Spain. This implies that initiatives that aim to develop European capital markets could be necessary. For instance, the discussion of forming a Capital Markets Union in Europe would help to develop a better funding backdrop for companies located in Ital and Spain.

To do the above mentioned analysis this paper is organized as follows. Section 2 develops the research hypotheses and throws a detailed look to corporate funding in the eurozone. Section 3 introduces related literature. Section 4 presents data set, sample construction and summary statistics. Section 5 provides the empirical results on the substitution effect. Section 6 concludes.

## 2. Hypothesis development

### 2.1. Corporate finance structure

In corporate finance, pecking order theory (Myers, 1984) postulates that external debt financing, either in the form of securities or borrowing, ranks after internal financing when available, but before the "last resort" of raising equity. The reasoning behind this hierarchy lies with the fact that the cost of financing increases with asymmetric information where creditors are not able to write complete contracts covering borrowers' actions in every eventuality. Internal funds are generally considered to be less expensive and immediately available, but are not as flexible, without increase of capital and with limitation in volume. Issuing equity is less desirable where new shares mean bringing foreign ownership into the company and investors often interpret new equity issuance as an adverse signal on the firm value.

As to the source of external finance, the concept of "debt pecking order" is mentioned without an absolute definition (see for instance De Haan & Hinloopen, 2003). Debt pecking order stipulates that relationship-based bank loans are favored by companies over publicly-traded bonds in order to minimize adverse selection due to the fact that public investors view bond issuance as a signal for overvaluation. Also, with relationship-based loans companies are able to negotiate or restructure debt in times of distress. Ample studies have analyzed the debt choice of borrowers between intermediated and market funds from both micro and macro perspectives. Factors such as prior capital mix, fixed assets, Tobin's Q and the nature of the industry affect debt financing decisions. Meanwhile, macro analyses have found the switch of a relationship-based to a market-based financial system to be influential.

### 2.2. Corporate funding in the eurozone

With the break-up of the Bretton-Woods system, the policy-induced innovation of the European Monetary Union (EMU) has promoted the integration of a continental financial market which has a similar scale as the one in the US. The introduction of the Euro eliminated exchange-rate risk. Financial claims are no longer issued in different currencies in the eurozone and the pan-European capital markets have started to emerge[1]. One of the most significant integration lies in the private-sector bond market in the EMU where the Euro has been preserved as a leading currency of denomination for international bond issues. Rajan and Zingales (2003) find that after the kickoff of the Euro, the growth of the corporate bond market was stronger inside rather than outside the eurozone. As indicated by the BIS statistics, since the inception of the EMU, the issuance volume of corporate bonds has increased from USD 273 billion in 1999 to USD 657 billion, where exceptional and transitory factors are mirrored[2]. Unlike US, corporate funding in Europe is featured with dominant role of bank lending, to the extent that around 75% of debt financing is funded by banks[3]. Unlike in the US, European banks serve as both underwriters and lenders, making comparisons of institutional markets challenging. We can see from Fig. 1 that both bank loans and the equity market are by far the preferred sources of external refinancing for non-financial corporations in Europe. As shown, for the eurozone non-financial corporations' outstanding bank loans and equity issuance amount to EUR 4,388 billion and EUR 14,579 billion, respectively in Q3-2013 compared with only EUR 1,095 billion of corporate bonds and other outstanding debt instruments.

At first glance the share of different sources may mark a large asymmetry in the eurozone corporate funding landscape in terms of the outstanding levels of different liability items at the balance sheets of non-financial corporations. However, the recent crisis has potentially inspired a change in the trend which deserves a significant attention: non-financial corporations started to use debt capital markets more intensively. One concern might be that the economic downturn induced an expansion in the demand for bonds. Previous frontier literature (Diamond, 1991; Rajan, 1992; Chemmanur & Fulghieri, 1994; Bolton and Freixas, 2000) documents that the preference for bank debt is due to the monitoring advantage of banks, whereas public debt is more readily available

[1] It is argued that multiple-currency issue is one source of market segmentation. Other frictions exist such as differences in tax treatment, business conventions, issuance policy, security trading and settlement systems, and availability of information (Pagano & von Thadden, 2004).

[2] Such as the financial crisis of late 1998.

[3] "European Banking Sector Facts and Figures 2012", European Banking Federation, October 2012.

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