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## Trade credit and bank loan: Evidence from Chinese firms

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#### ABSTRACT

We use quarterly data of 1213 Chinese firms from the first quarter of 2006 to the end of 2012 to examine the relationship between trade credit and bank credit. In particular, we investigate how the relation is affected during the 2008–2009 global financial crises. Several findings are noted. First, there is a significantly positive relationship between the supply of trade credit (i.e., accounts receivable) and bank loans and a significantly negative relationship between the demand of trade credit (i.e., accounts payable) and bank loans, indicating a complementary and substitution effect between trade credit and bank loans. Second, this study shows a significant decrease of the demand/supply-side of trade credit at the peak of financial crisis, followed by a subsequent increase of this source of financing after the crisis events. Third, both large and small firms provide significantly less trade credits (accounts receivable) and receive less trade credits (accounts payable) during financial crisis. After the crisis, large firms still provide significantly less trade credit to their customers but receive more trade credits from the suppliers than smaller firms.

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#### 1. Introduction

Trade credit is a financing instrument offered by suppliers to their customers. The supply of trade credit (i.e., accounts receivable), representing a means to promote firm sales, can be regarded as working capital financing to other firms, which may be small or face credit constrained (Marotta, 2005; McMillan & Woodruff, 1999). On the contrary, the demand of trade credit (i.e., accounts payable) represents the credit that a firm owes its suppliers for goods it has received but for which it has not yet paid. Comparing with the formal financing channels, such as bank loans, trade credit has played a critical role in sustaining firm growth (Garmaise & Moskowitz, 2003). Also, it is an important source of financing for firms, small or large, around the world (Demirgüç-Kunt & Maksimovic, 1999). The cost of trade credit depends on the credit terms. Generally, the implicit interest rate charged in a trade credit contract is expected to be higher than bank credit rates.<sup>2</sup> Despite its high cost, trade credit is widely used because of its convenience and many firms may not have access to bank loans, especially in developing economics where formal finance is inadequate and informal finance is prevalent.

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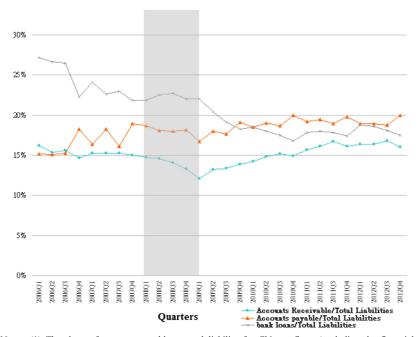
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<sup>&</sup>lt;sup>2</sup> For example, a common contract called "1/10 net 30" means that if customers pay within ten days of the delivery, they are qualified for a 1% discount. Otherwise they can pay up to 30 days after the delivery. The discount for early payment implies an interest rate that the customer pays for the credit received. Effectively, the customer is receiving a credit at a 1% rate for 20 days. Thus the equivalent one year interest rate of this deal is about 18.25%, which is an extremely high rate as compared to the market rate that a bank would charge for a similar loan type.

The 2008–09 global financial crises were characterized by a severe squeeze on credit. During the times of financial crisis, banks become more reluctant to lend to even high creditworthy firms. Petersen and Rajan (1997) find that firms will increase trade credit when they suffer negative cash flows and lose sales. In addition, the supplier can exploit it to obtain better credit terms during a financial restriction when a customer has bargaining advantages. When a firm has higher level of inventories, whether raw materials or finished products, it would use less trade credit because they also buy less and wait for the inventories to be moved out. Ferris (1981) observes that firms could reduce their problems by adjusting maturity between payables and receivables. That is, they may divide the payment cycle from delivery cycle. Moreover, buyers may have more motives than banks to offer firms working capital when they suffer temporary liquidity shocks. For example, Choi and Kim (2005) find that both accounts payable and accounts receivable increase with tighter monetary policy, implying that trade credit helps firms absorb the effect of a credit contraction. Petersen and Rajan (1997) find that firms may use more trade credit with weaker banking relations. Wilner (2000) claims that suppliers tend to support their customers in financial distress to maintain a long-term trade relationship.

From the aforementioned statements, during financial crisis, trade credit should become relatively important as a source of finance and the use of trade credit should increase. Especially, trade credit has a potential to serve as an alternative of finance, provided by suppliers of raw materials, to financially constrained firms because suppliers might be better to overcome information and enforcement problems than financial institutions (Love & Zaidi, 2010). This advantage suggests that there will use more trade credits than bank loans in economic downturns, and policymakers and firms would be well-advised to explore the development of trade credit, which might not be as desirable in normal times, but could prove useful during crises when credit markets become tightened (Coulibaly, Sapriza, & Zlate, 2013).

Developing markets usually lack market-protecting economic conditions, such as adequate property rights protection and effective contract enforcement. As a result, regular formal financing channels such as bank loans are not readily available. In this case, informal financing channels can potentially provide a financing alternative for firms with poor access to formal financing channels to support their growth and expansion. This informal finance should play a crucial role in running a firm and maintaining its growth under weak economic conditions. Recently, the role of trade credit as an informal financial institution in developing and transitional economies with insufficient formal financing channels has received attention (see, for example, Garmaise & Moskowitz, 2003; Love, Preve, & Allende, 2007; Niskanen & Niskanen, 2006). Fisman and Love (2003) indicate that trade credit provides an alternative of funds in countries with undeveloped financial markets, which allows higher growth rates in industries that can be characterized as intense trade credit users.



Notes: (1) The share of accounts payable to total liability for Chinese firms (excluding the financial industry) reached 20 % in 2012 from 15 % in 2006. In contrast, the share of bank loans to total liability has declined from 27 % in 2006 to 17 % in 2012. The share of accounts receivable to total liability remained quite stable from 2006 to 2012. (2) The data source comes from the Taiwan Economic Journal.

**Fig. 1.** Graphical analysis of accounts payable, accounts receivable and bank loans to total liability for Chinese firms. Notes: (1) The share of accounts payable to total liability for Chinese firms (excluding the financial industry) reached 20% in 2012 from 15% in 2006. In contrast, the share of bank loans to total liability has declined from 27% in 2006 to 17% in 2012. The share of accounts receivable to total liability remained quite stable from 2006 to 2012. (2) The data source comes from the Taiwan Economic Journal.

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