

The Use of Trade Credit by Businesses

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Trade credit is an important source of funding for some businesses, particularly those in the unlisted business sector. Nonetheless, little is known about the use of trade credit owing to the paucity of data. This article explores the use of trade credit, as well as the terms and conditions of trade credit contracts. It also examines the relationship between trade and bank credit. Understanding the nature of this relationship provides useful insights into how changes in financial conditions will affect the overall funding of businesses.

Introduction

Trade credit is an agreement in which a supplier allows a business to delay payment for goods and services already delivered. Allowing payment to occur after the receipt of the goods and services helps the business to better manage their short-term cash flows. Trade credit is an alternative source of funding to credit provided by financial institutions, hereafter referred to as bank credit.¹

Trade credit is used as a form of business funding for a number of reasons. First, suppliers may have an advantage over banks in providing credit because they tend to have more information about their customers and their credit history. Second, because suppliers cannot provide certainty about the timing for delivery of their goods, they may extend trade credit to provide buyers with more certainty about the timing of their payments. Third, trade credit can be used as an instrument of price discrimination. Given that trade credit is usually extended to buyers on the same basis regardless of the buyer's underlying credit quality, financially weaker firms typically pay a lower effective price than financially

stronger borrowers. Finally, trade credit can be used by businesses to verify the quality of their purchases before having to pay for them.²

Given the funding that trade credit provides, its use has implications for understanding both the transmission of monetary policy to the business sector and the financial health of businesses over the credit cycle. For example, an increase in interest rates should make bank credit more expensive and result in businesses scaling back their borrowing. However, if businesses have ready access to funds outside of the financial system that do not incur the payment of interest, such as trade credit, the reduction in total funding may be less than it would be otherwise. However, an increase in the interest rate should also increase the opportunity cost of supplying trade credit to customers. As such, suppliers may choose to reduce the amount of trade credit offered or impose less favourable conditions on their customers.

The use of trade credit by businesses might also be an important mechanism for mitigating the effects of an adverse change in the availability of bank credit. A reduction in lending from the financial sector may cause financing problems for some businesses. If these businesses are able to use trade credit as an alternative to bank credit, this may temporarily assist with any cash flow problems and help to sustain the

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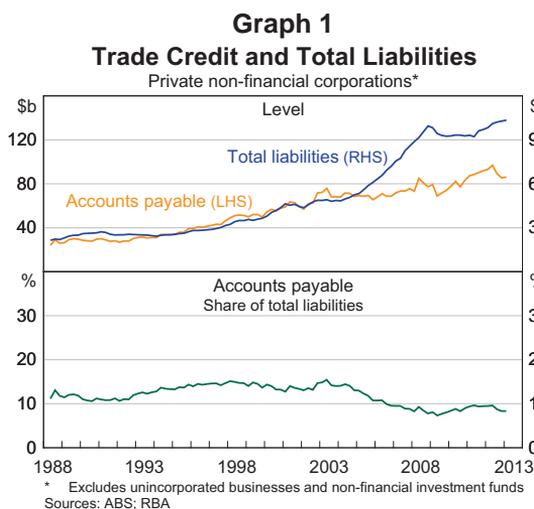
1 Bank credit has an explicit interest charge. For businesses, the majority of bank credit is provided by the banks. Credit unions and building societies do very little business lending. Registered financial corporations account for a small share of bank credit.

2 For further detail on the theories that explain the use and supply of trade credit, see Petersen and Rajan (1997).

financial health of the business sector. At the same time, trade credit increases the interconnectedness of businesses and potentially increases the risk that payment difficulties faced by one firm may spread more broadly throughout the business sector.

The Use and Supply of Trade Credit

In Australia, trade credit owed by Australian businesses (both listed and unlisted corporations) is estimated to have been over \$80 billion in March 2013, which accounted for around 8 per cent of their total liabilities (Graph 1; trade credit is proxied by accounts payable). According to the Dun & Bradstreet financial database, data for unlisted (typically smaller) businesses suggest that trade credit is a particularly important source of debt funding for this segment of the business sector and accounted for around 40 per cent of their total liabilities.³

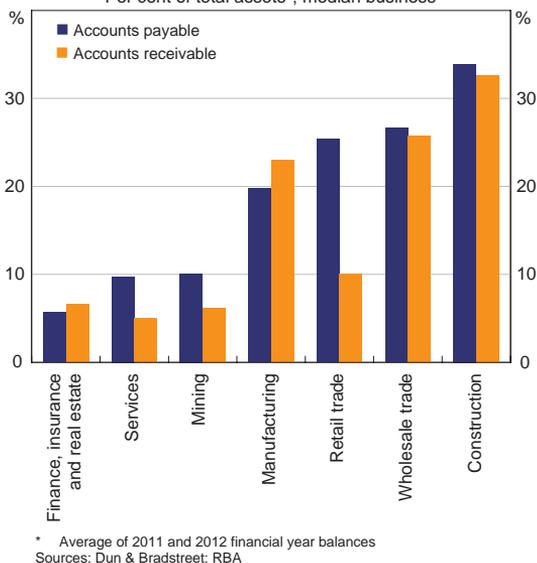


3 The Dun & Bradstreet financial database contains a sample of over 25 000 unlisted businesses of various sizes across a range of industries. Note that survivorship bias and the sample being mostly indebted companies may affect the results of the analysis. Due to data availability, trade credit is proxied by accounts payable; Love, Preve and Sarria-Allende (2007) suggest that accounts payable is a reliable indicator of trade credit.

Trade credit by industry

While trade credit is an important source of external financing for many unlisted businesses, its use differs markedly across industries (Graph 2). Industries that are involved in the production or distribution of goods tend to use trade credit more intensively. These industries include construction, retail trade and wholesale trade, where trade credit received generally exceeds 25 per cent of total assets.⁴ Businesses in these industries typically have to manage their inventories closely and deal with suppliers on a regular basis. By contrast, those industries that have reduced inventory requirements or are less likely to interact with suppliers of goods on a regular basis, such as service industries, are less likely to have their suppliers provide this source of finance.

Graph 2
Trade Credit – Unlisted Businesses
Per cent of total assets*; median business



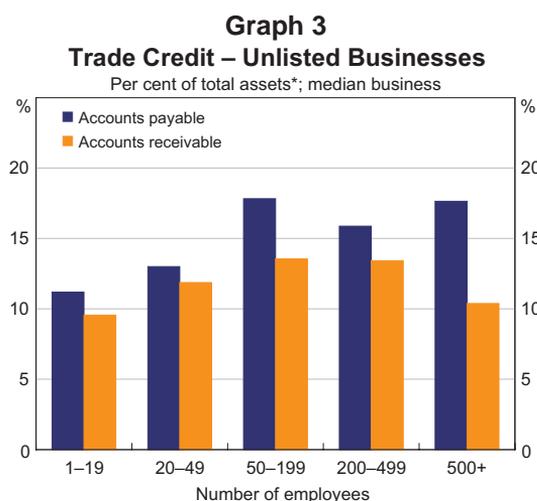
Unlisted businesses that tend to extend more trade credit to their customers (as proxied by a greater share of accounts receivable) predominately operate in upstream goods industries, such as the wholesale

4 The measure of trade credit is standardised by total assets to facilitate comparison across different sized businesses.

trade, manufacturing and construction industries. As a consequence, these industries are at greater risk of loss from the default of trade debtors. A late payment or default from a debtor potentially inhibits the ability of the creditor to service their own debts. In other words, a default by one business may quickly propagate to other businesses in that industry, or related industries. By contrast, industries such as finance and services are less likely to extend trade credit and therefore have lower exposure to the payment risk of their trading partners.

Trade credit by business size

The use of trade credit (as a proportion of total assets) within the unlisted sector increases with business size until the firm reaches a size of 50 to 199 employees (Graph 3). For unlisted businesses larger than this, there is typically little increase in the use of trade credit relative to assets. This may reflect the tendency for unlisted businesses to gain more access to other forms of funding once they reach a certain size. In addition, larger businesses are likely to have more long-term fixed assets such as property, plant and equipment, which are generally funded by long-term liabilities or equity rather than trade credit. These fixed assets may also be pledged as collateral for bank credit.



* Average of 2011 and 2012 financial year balances
Sources: Dun & Bradstreet; RBA

As noted, smaller unlisted businesses (those with 1 to 19 employees) typically use less trade credit than larger unlisted businesses. This possibly reflects the weaker bargaining power of these smaller businesses in comparison with their larger suppliers. Small businesses may also be perceived as being more risky than their larger counterparts. Furthermore, many small businesses, especially younger or unincorporated firms, may lack a sufficient financial history that is often required by trade creditors or credit agencies to assess their creditworthiness.

Similarly, according to these data, small unlisted businesses tend to extend the least amount of trade credit. This could be because small businesses have difficulty in accessing finance (such as bank credit) should their trade creditors default or because they have volatile and non-diversified cash flows, which can inhibit their ability to extend trade credit.

Terms and conditions of trade credit

The terms and conditions under which trade credit is extended play a key role in understanding its attractiveness relative to bank credit, and therefore the extent of its use and supply. The terms and conditions are usually specified by a trade credit contract. While the price of trade credit is typically not correlated with movements in interest rates, an implicit interest rate may be imputed from the terms of the contract. The imputed interest rate depends on whether the business offers either a 'one-part' or 'two-part' contract (Cuñat 2007).

A one-part contract is similar to an interest-free loan; the supplier allows its client to pay within a specified period and provides no incentive or discount for early payment.⁵ By contrast, a two-part contract provides the client with a discount for early payment. As noted by Cuñat (2007) for US businesses, a common two-part contract is one that offers the client a discount of 2 per cent if they pay within 10 days of delivery, otherwise they are expected to pay the full

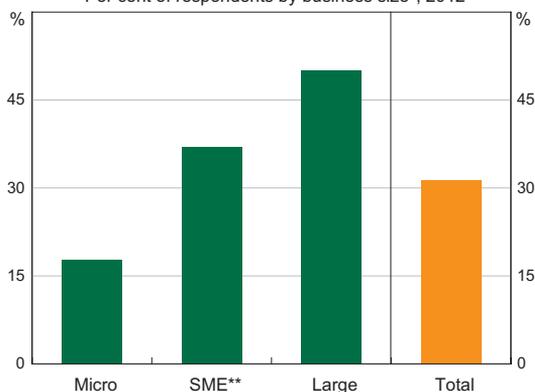
⁵ However, the client may implicitly be charged more for the goods and services they purchase because the supplier is foregoing interest that can be earned if the receipt of funds were not deferred.

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amount due by the 30th day (commonly referred to as '2–10 net 30'). Conceptually, payment made after the discount period ends is more expensive for the client – the customer effectively has to pay 2 per cent for 20 days. This is significantly higher than advertised interest rates on business loans and credit cards.

The Atradius Payment Practices Barometer Survey (Atradius 2012) estimates that around 30 per cent of Australian businesses offer two-part contracts (Graph 4). However, there are differences across business size; for example, larger businesses are more likely to offer two-part contracts than smaller businesses.

Graph 4
Two-part Trade Credit Offered
Per cent of respondents by business size*; 2012

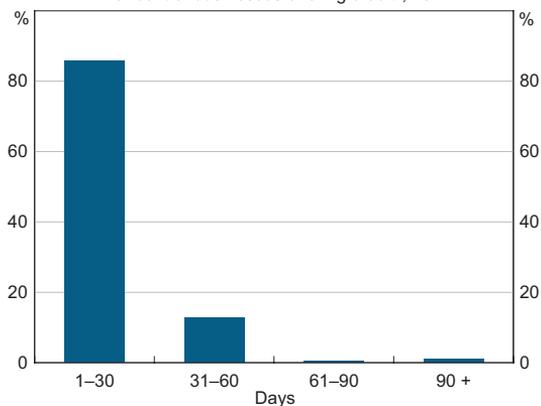


* The Atradius survey includes 197 Australian businesses
** Small and medium enterprises
Sources: Atradius (2012); RBA

The most common payment term offered by businesses is for payment within 30 days. This term is offered by over 80 per cent of businesses surveyed by Atradius (Graph 5). However, there is some evidence that the payment term offered is correlated with the size of the business providing trade credit; larger businesses tend to offer longer payment terms, which are typically around 40 days, while smaller businesses offer shorter payment terms of around 20 days. As previously discussed, this may reflect the fact that smaller businesses have more volatile cash flows and are therefore more financially constrained

Graph 5
Average Payment Terms

Per cent of businesses offering credit*; 2012



* The Atradius survey includes 197 Australian businesses
Sources: Atradius (2012); RBA

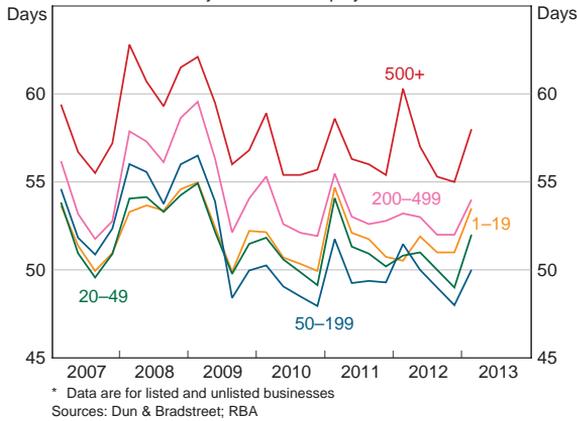
than larger businesses. The longer payment terms offered by larger businesses may also reflect their ability to apply active credit management policies, such as checking a buyer's creditworthiness prior to extending credit or using a collection agency to manage their debtors.

Although payment terms are specified in the trade credit contract, actual payment behaviour suggests that these terms are quite flexible in practice. The average collection period provides an indication of the number of days businesses take to collect payment from their trade debtors.⁶ Data suggest that businesses on average take slightly more than 50 days to receive payment (Graph 6). This is well beyond the payment term of 30 days that is typically offered. In general, larger businesses, particularly those with more than 500 employees, take substantially longer to collect payments than smaller businesses, which may reflect longer credit terms offered by these businesses to their trading partners and customers.

Late payment by businesses is consistent with Cuñat's (2007) suggestion that debtors tend not

⁶ A short collection period might indicate highly efficient credit collection. Alternatively, it may indicate that the company's credit conditions are restrictive.

Graph 6
Average Collection Period*
 By number of employees



to enforce late payment penalties against their trading partners. In the case of one-part contracts, and in the absence of late payment penalties, late payments suggest that businesses attempt to manage their cash flows efficiently by stretching their payments beyond the due date. In the case of two-part contracts, the cost of trade credit increases immediately once the discount period has ended, but businesses may be more willing to face the risk of an interest rate penalty rather than default on other debt obligations, such as bank credit, for which the consequences can be more severe.

The Relationship between Trade Credit and Bank Credit for Business Funding

The above descriptive analysis provides useful insights into the extent to which trade credit is used by different business sizes and industries, and the form that trade credit contracts typically take. To understand the potential financial stability and monetary policy implications of the use of trade credit requires an understanding of the relationship between trade and bank credit.

On the one hand, businesses may use trade and bank credit as substitutes. That is, an increase in the use of trade credit will be associated with a fall in

bank credit, as a share of total debt. This may be the case because businesses that are credit constrained may substitute from bank credit to more costly trade credit (Petersen and Rajan 1997).⁷ This could include businesses without an established relationship with a lender (such as small or new businesses). Alternatively, businesses that have ready access to bank credit may choose to substitute between trade and bank credit depending on the relative costs after taking into account any transaction costs. For example, businesses looking for longer-term funding may substitute towards bank credit, while some businesses will prefer the short-term nature of trade credit and the potential ease of obtaining credit directly from the supplier, particularly if the application process for the extension of bank credit is demanding (Pawlowska and Marzec 2013).

On the other hand, businesses may use trade and bank credit as complementary forms of funding. That is, movements in trade credit will tend to coincide with similar movements in bank credit. The complementarity arises when businesses use their ability to access trade credit to assist them in gaining access to bank credit (Biais and Gollier 1997). Specifically, trade credit suppliers are likely to have an informational advantage over banks in assessing the financial health of trade credit users and better knowledge of the markets in which their customers operate. Thus, a business' ability to access trade credit may send a positive signal to banks about the business' credit quality (Fisman and Love 2003). Burkart and Ellingsen (2004) find that the amount banks are willing to lend a business increases with the business' ability to access trade credit.

Estimating the relationship between trade credit and bank credit

To explore the relationship between trade and bank credit in Australia's unlisted business sector, a

⁷ Trade credit is more expensive than bank credit because it includes costs associated with having a late payment option, greater risk of default and the higher cost of acquiring funds (Cuñat 2007).

model of firm-level use of trade credit is estimated.⁸ The model is used to test whether trade and bank credit are substitutes, under the assumption that bank credit use affects trade credit, but trade credit use does not affect bank credit.⁹ The analysis also accounts for a range of factors related to each firm – such as age, size, liquidity and profitability. Variables for each financial year are included to control for time effects, and fixed effects are included to control for unobservable firm-level characteristics that do not vary with time. Further details on the regression are provided in Appendix A.

The results suggest that firms in the Australian unlisted business sector are likely to be treating trade and bank credit as partial substitutes as evidenced by the negative coefficient estimate on bank credit (Table 1). Specifically, 10 percentage points more

of bank credit (as a proportion of total assets) is associated with 3.7 percentage points less trade credit (as a proportion of total assets). Conversely, if there is a tightening in bank credit supply, then trade credit may act as a partial buffer for business funding. This result is consistent with several studies for other countries. Lundholm, Serafeim and Yu (2012), for example, find evidence of substitution between trade and bank credit across 69 countries.

In terms of the other specific firm-level factors that affect the use of trade credit, businesses with a higher share of short-term assets (asset structure) tend to use more trade credit; this is consistent with the notion that trade credit is itself a form of short-term financing. Although accounts receivable turnover and liquidity are both statistically significant in explaining changes in trade credit, their effect is negligible.

To estimate whether the relationship between trade and bank credit differs across sectors, interaction terms between industry variables and bank credit are used. The results suggest that trade and bank credit are likely to be substitutes across all sectors (Table 2). The degree of substitutability in the construction industry (one of the more intensive users of trade credit) was significantly (and statistically) different from the mining, and transport and utilities sectors (which are some of the less intensive users of trade

Table 1: Regression Results – Key Variables
Dependent variable: Trade credit/total assets

Variable	Estimated effect on trade credit/total assets ^(a) (ppts)
Bank credit/total assets	-0.365***
Accounts receivable turnover ^(b)	-0.000001**
Liquidity ^(c)	-0.00001***
Asset structure	0.121***
Observations	34 421

(a) ***, ** and * denote significance at 1, 5 and 10 per cent, respectively; sample period is 2004/05 to 2011/12

(b) Sales over accounts receivable

(c) Current assets minus inventories over current liabilities

Source: RBA

8 In this analysis, bank credit is estimated as total liabilities excluding accounts payable. This measure may overstate the true value of bank credit due to the inclusion of other liabilities, such as taxes payable. While these items are likely to be small for unlisted businesses, they are unable to be accounted for due to data limitations.

9 The validity of this assumption was tested using an instrumental variables approach, which controls for potential reverse causality between trade and bank credit. Preliminary estimates from this approach also suggest that Australian unlisted businesses tend to treat trade and bank credit as partial substitutes.

Table 2: Estimated Effect of Bank Credit on Trade Credit
Proportion of total assets

Industry	Estimated effect ^(a) (ppts)
Mining	-0.171*
Transport and utilities	-0.218***
Services	-0.370***
Wholesale trade	-0.367***
Manufacturing	-0.413***
Retail trade	-0.464***
Construction	-0.703***

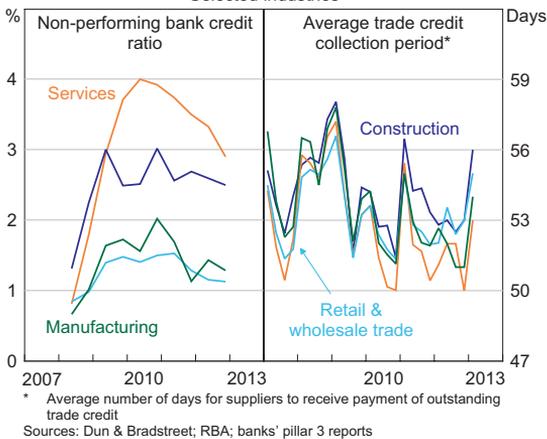
(a) ***, ** and * denote significance at 1, 5 and 10 per cent, respectively; sample period is 2004/05 to 2011/12

Source: RBA

credit). Carbó-Valverde, Rodríguez-Fernández and Udell (2012) suggest that the level of substitution will be greater for firms that are more credit constrained. The RBA's liaison with businesses suggests that this was particularly the case for construction businesses during the period used for the estimation.

As noted above, the evidence that trade and bank credit are substitutes means that trade credit has the potential to mitigate difficulties that might otherwise arise if businesses cannot access alternative sources of funding. However, should there be a prolonged financial or economic shock, the use of trade credit may also provide a mechanism for the propagation of shocks within the business sector; trade debtors defaulting on their payments may lead to trade creditors having problems repaying their own debt. The data suggest that there was not a substantial increase in the use of trade credit in Australia following the global financial crisis. However, it does appear that firms had more difficulty repaying their bank credit, and to a lesser extent their trade credit, as reflected by the higher non-performance rate on bank credit and the increased number of days it took for businesses to receive payment of trade credit in 2008 and 2009 (Graph 7).

Graph 7
Business Payment Behaviour
Selected industries



Conclusion

Trade credit is an important source of funding for businesses in Australia, particularly in the unlisted sector. Although most unlisted businesses use trade credit to some degree, the extent of its use is influenced by both the nature and size of businesses. Industries that carry extensive inventories and are providers of intermediate goods tend to use and supply more trade credit. Likewise, large unlisted businesses typically have a higher proportion of trade credit to total assets than smaller unlisted businesses, possibly because the latter tend to have weaker bargaining power and are perceived to be riskier than larger businesses. Businesses generally appear to be consistently repaying trade credit well beyond the due date, suggesting that trade creditors tend not to enforce late payment penalties against their trading partners.

While it is possible that trade credit can be either a substitute or complement to bank credit, the estimates presented in this article suggest that trade and bank credit are partial substitutes for the typical Australian unlisted business. This means that changes to the cost or availability of bank credit will have somewhat less effect on a business' overall debt funding than would be the case if trade and bank credit were complements. ❖

Appendix A

The relationship between trade and bank credit can be estimated using a model where trade credit is a function of bank credit, controlling for a range of factors related to each firm.¹⁰ The model estimated is specified as:

$$TC_{it} = \beta_1 BC_{it} + \sum_{j=1}^J \gamma_j X_{j,it} + \sum_{k=1}^K \delta_k D_{k,t} + \alpha_i + \varepsilon_{it} \tag{A1}$$

¹⁰ This model is based on Gama and Mateus (2010). The data used in the model include 9 440 non-financial unlisted businesses giving a total of around 34 000 observations. Businesses with under \$4 million in total assets are excluded due to data quality concerns.

where TC is trade credit expressed as the ratio of accounts payable to total assets for firm i in financial year t , BC is the ratio of bank credit to total assets, X are firm-specific characteristics, D are financial year dummy variables, α are the fixed effects to control for the existence of factors that are constant over time but vary across firms and ε is an error term.

Insignificant variables were removed one at a time to arrive at a more parsimonious model specification. These variables were sales growth, age, inventory turnover and profitability. An F -test also suggested the removed variables were jointly (and statistically) insignificant.

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- The model is used to test whether businesses treat trade and bank credit as substitutes, using a one-sided test of significance on the bank credit variable.
- To examine whether the relationship between trade and bank credit is different across industries, the model is modified so that bank credit is interacted with industry variables as follows:
- $$TC_{it} = \beta_1 BC_{it} + \sum_{j=1}^J \gamma_j X_{ijt} + \sum_{k=1}^K \delta_k D_{kt} + \sum_{l=1}^L \rho_l I_{lit} BC_{it} + \alpha_i + \varepsilon_{it} \quad (A2)$$
- where I are firm-level industry dummy variables.
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