HOW BANKING MARKET COMPETITION AND BANK RELATIONSHIPS AFFECT SMALL FIRM LIQUIDITY

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This article aims to investigate the effects of relationship banking and banking market rivalry on small firm liquidity. Our major objective is to determine how bank market concentration and relationship banking affect the three crucial acts of small business liquidity (cash funds, line-ups of credit, and employment credit), both separately and collectively. Due to their significance for small firm’s profitability, value, and sustainability, we concentrate on cash assets (Harford et al., 2008; Mach and Wolken, 2011). Despite this, there have been just two prior studies of small firm cash holdings that we are aware of (Garca-Teruel and Martinez-Solano, 2008; Faulkender, 2002). Likewise, even though credit lines remain also a shared source of small firm liquidity (Sufi, 2009), previous findings have normally aimed on credit line practice by large businesses (Acharya et al., 2013). Key words: banking, firm liquidity, credit.

Nevertheless, what is mainly different about this study stands the focus upon how bank focus and connection banking changes all three separate forms of liquidity at the same time. Analyzing these causes together is vital because they stand often used as alternatives. For instance, non-operational cash (unconditional liquidity) is used as a buffer against cash flow shocks while credit lines (conditional liquidity) provide liquidity to support firms seeking to exploit business opportunities (Lins et al., 2010). Sufi (2009) also shows that firms with low (high) cash flows are less (more) likely to have credit lines. Faulkender (2002) identifies that cash holdings are negatively related to the use of trade credit while Acharya et al. (2013) show that firms with higher risk profiles prefer holding cash rather than using credit lines. Moreover, trade credit is used as a substitute of bank credits, especially for less liquid firms (McGuinness and Hogan, 2014). In sum, therefore, the central novelty of this article is that we separately and jointly consider the impacts of bank concentration and relationship banking upon three main sources of small firm liquidity.

Our results show that when all three forms of liquidity are considered together, small firms in a highly concentrated banking market have less access to lines of credit and use more expensive trade credit. In terms of the individual forms of liquidity, we also find that in a concentrated banking market small firms hold less cash, are more likely to be financially and liquidity constrained, have constrained access to lines of credit, use greater amounts of trade credit, and face higher penalties if they pay trade credit late. These findings are consistent with a market power interpretation which suggests that bank concentration has a negative impact on small firm liquidity. Nonetheless, we also find that if small firms have built longer banking relationships in concentrated banking markets, they hold more cash, have better access to lines of credit and greater financial slack, which militates against the adverse effects of banking market concentration. Such results are consistent with the information hypothesis. What therefore emerges from our study is support for both market power and information hypotheses, suggesting that these two approaches are not mutually exclusive.

The relationship between bank competition and banks’ liquidity creation is of great concern to the economic policymakers because of its far-reaching implication on the economy. Regulators may want to increase the consumer’s welfare by increasing the competition, limiting the banks’ incentive to create liquidity in the market. Thus, any result suggesting a liquidity-destroying role of bank competition would indicate the

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existence of a policy trade-off. Thus, we try to enhance our understanding of the consequences of bank competition and liquidity creation.

**Banks competition**

The financial liberalization and deregulation, specifically in the banking sector, have drawn the attention of many policymakers and researchers on the role of competition in the banking sector. Previous studies focus on the impact of competition on access to credit, risk-taking behavior, financial stability, and bank failure. However, little attention has been paid to the role of competition on liquidity creation by the banks.

There are two different schools of thought on banks’ competition. “Competition-stability” and “Competition-Fragility”. According to the competition fragility view, enhances competition in banking sectors erodes banks’ profitability, thus reduces their charter value (character value hypothesis), ultimately reduce liquidity creation by banks. On the other hand, Repullo (2004) said that banks profit margin to act as a safeguard in the wake of financial distress; banks try to recover the profit margin by taking the additional risk and grant funds to the project which is too risky. In a highly concentrated market, banks try to protect their franchise value by taking less risk as high franchise value implies high opportunity costs of bank failure (Hellmann, Murdock, & Stiglitz, 2000).

**Liquidity creation**

Numerous studies in the past literature suggest that the primary reason for banks’ existence is to create liquidity between lenders and borrowers (Diamond and Dybvig, 1983; Kashyap, Rajan, & Stein, 2002; Gatev & Strahan, 2006). Banks create liquidity by issuing long term loans or illiquid loans by using relatively liquid deposits or short-term deposits. Banks can create liquidity in two ways either on-balance sheet by using liquid liabilities and illiquid assets Bryant (1980) and Diamond and Dybvig (1983) or in the form of off-balance sheet activities like loan commitments. At the same time these commitments allow the borrower to draw funds during the contract period, and these withdrawals are uncertain. These commitments by the banks provide liquidity to the customer whenever they need liquidity unexpectedly.

Empirical studies regarding liquidity creation and its implications are scratching the surface because of the absence of a comprehensive measure of liquidity creation. Deep and Schaefer (2004) develop a measure for liquidity creation known as liquidity transmission gap, which is not a comprehensive one. Berger and Bouwman (2009) developed four different comprehensive measures of liquidity creation and argued cat-fat is best of all, including the liquidity transformation gap, which has close resemblance with the matnot-fat measure of Berger and Bouwman (2009). A significant difference between liquidity transformation Gap and Catfat measure of liquidity creation in the classification of the loan, former classifies loan based on maturity. While later categorizes based on category. Catfat measure classifies residential mortgages and loans as semi-liquid assets because they can be sold or securitized to meet the liquidity demand of the bank. Business loans, irrespective of their maturity, are treated as illiquid assets as banks cannot dispose of them to settle their liquidity demands. Catfat includes both on and off-balance sheet items, making it a more advanced and comprehensive measure of liquidity creation.

**Measures of banks’ liquidity creation**

Following Berger and Bouwman (2009), all balance sheet items were classified as liquid, illiquid, or semi-liquid. After classifying items weights are assigned to them as per Berger and Bouwman (2009). Only two proxies are used out of four that were suggested by them because of data limitation. So, catfat and a catnotfat measure of liquidity creation are used for analysis purposes. We label them as broad measure (catfat) and narrow measure (catnotfat). As the name suggests, the broad measure is preferred as it includes both on and off-balance sheet items, while the narrow measure only accounts for on-balance sheet items. The narrow measure is used as a means to test the robustness of the results.

We use three dependent variables. First, to examine cash holdings, we follow Faulkender (2002) and use a cash/sales ratio. We complement this by using – as a robustness check – cash/total assets as an alternative dependent measure of cash holdings (Pinkowitz and Williamson, 2001) (see Table 7). Second, to assess lines of credit, we use total lines of credit/total assets to reflect bank credit line availability (Compello
et al., 2011). We complement this by using unused credit lines as a robustness check. This is valuable because it is a measure of financial slack of the business (Houston and James, 2001). For our final dependent variable, we use account payables/total cost of goods and services (Cuñat, 2007) as a measure of trade credit. Again, this is complemented by using an alternative measure of trade credit – the penalty charges in percentage terms if trade credit is paid late. Moreover, to provide further depth to our analysis of these sources of small firm liquidity, we consider the overall effects of banking market structure and relationship banking by assessing financial (= 1 if a firm’s applications for loan were rejected over the last 3 years and/or they are discouraged borrowers; 0 otherwise) and liquidity constraints (= 1 if a sample firm does not pay back credit cards in full; 0 otherwise). This is valuable because it controls for the variation of banking market and relationship banking effects on different liquidity instruments.

To investigate the impacts on cash holdings, credit lines, and trade credit together, we use our three main dependent measures to consider the substitute effects of cash versus lines of credit; trade credit versus credit lines; and cash versus trade credit by building cash to credit lines ratios, cash to trade credit ratios, and credit lines to trade credit ratios as the dependent variables.

**Analytical strategy**

We analyze our three dependent variables by using Weighted Least Squares (WLS) regressions to limit sample selection biases. The baseline model specification is as follows:

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\text{Liquidity} = \beta_0 + \beta_1 \times \text{banking relation} + \beta_2 \times \text{banking market concentration} + \beta_3 \times \text{control variables} + \epsilon
\]

where liquidity is measured as cash/sales, credit lines/total assets and trade credits/cost of goods sold and \( \epsilon \) is the error term. Equation tests market power hypothesis by examining the effects of individual banking market concentration measures. We also focus on interaction effects (equation ) in terms of the length of time in a banking relationship and bank concentration, as a test for the information hypothesis. We consider relationship duration because this reflects Petersen and Rajan (1994, 1995) who showed the importance of relationship duration in concentrated banking markets.

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\text{Liquidity} = \beta_0 + \beta_1 \times \text{banking relation} + \beta_2 \times \text{banking market concentration} + \beta_3 \times \text{control variables} + \beta_4 \times (\text{banking relation} \times \text{banking market concentration}) + \epsilon
\]

**Conclusion**

The impact of bank market concentration on small firm finance has been a long term issue in the United States; it has remained so because bank concentration levels have been stable since the deregulatory reforms of the 1990s. Bank market concentration rates have also been a concern in other developed economies, particularly as the financial crisis has shown that in markets where bank concentration is high, small firm access to finance is limited (Chong et al., 2013; Ryan et al., 2014). Much of the evidence for these effects investigates small firm lending. Our contribution has been to examine – for the first time to our knowledge – the impact of bank concentration and relationship banking on three key measures of small firm liquidity (cash holdings, lines of credit, and trade credit). Besides investigating these impacts separately, one further novelty has been to consider the joint impacts of these three measures. In doing so, we have provided new insights on the effects of relationship banking and bank market concentration on small firm liquidity. One key result is that in a highly concentrated bank market, small firms hold less cash, and they are more likely to be financially, and liquidity constrained than in a competitive bank market. They also have constrained access to lines of credit, use more expensive trade credit, and face higher penalties if they pay trade credit late. Our findings also show that in concentrated bank markets the availability of credit lines is sensitive than cash holdings and small firms opt for trade credits as a substitute to holding cash and using credit lines.

Our results also give support to the information hypothesis. One key result is that those small firms in longer term banking relationships can gain favorable effects that mitigate against the unfavorable effects of bank concentration. These positive effects include reducing the likelihood of being financially and liquidity constrained, increased cash holdings, and access to more credit lines. These results have implications for both small firms and their banks. For small firms operating where there are highly concentrated bank markets, our findings suggest the need to develop stronger links with their
bank. Moro et al. (2014) identify those Italian small firms that actively and voluntarily disclose information benefit from lower interest rates. Our results support these findings and indicate that there are benefits from small firms developing closer links with their bank. They also suggest that small firms operating in concentrated bank markets may be better placed by adopting a more monogamous relationship with their bank. Equally, one way of promoting better banking relationships is for banks to adopt more relationship orientated rather than transaction-based support to their small firm clients.

The fact that we find support for both the market power and information hypotheses is perhaps not surprising. Each of these theoretical traditions approach small firm liquidity from differing start points and are not mutually exclusive: market power is focused on the efficiency considerations of bank market concentration on the supply of finance while the information hypothesis is focused on the impacts of information asymmetries on small firm liquidity. Our support for both hypotheses implies that unbridled competition may leave banks open to ‘free-rider’ issues that make them less willing to acquire private information from informationally opaque small firms. This implies that policy makers have a difficult juggling act in developing banking markets that allow competition to thrive, while still allowing banks to develop mutually beneficial relationships with their small firm customers.

References
