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Switching costs in local credit markets ☆

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ABSTRACT

Switching costs are a key determinant of market performance. This paper tests their existence in the corporate loan market in which they are likely to play a central role because of the complexity of contracts and the relevance of informational problems. Using very detailed data at bank–firm level on four Italian local credit markets we empirically show that firms tend to iterate their choice of the main bank over time. This inertia is not related to unobserved and time invariant firms' preferences across banks and can be attributed to the existence of switching costs. Moreover these costs are higher for single-bank firms. We also offer evidence that banks price discriminate between new and old borrowers by charging lower interest rates to the former in order to cover part of the switching costs. The discount amounts to about 44 basis points and is equal to 7% of the average interest rate. These results prove robust to a number of other potential identification drawbacks.

1. Introduction

A buyer faces switching costs if an investment specific to her current seller must be duplicated for a new seller. This creates economies of scope among repeated purchases from the same supplier (Farrell and Klemperer, 2007). Switching costs have far reaching consequences on the standard competitive market equilibrium because they modify entry conditions as well as incumbent pricing strategies. In the case of banking sector switching costs are also relevant from a macroeconomic point of view. They may reduce price elasticity in retail markets so that the transmission of policy rate changes to retail interest rate dynamics may exhibit some form of sluggishness because banks may not find it profitable to adjust their prices frequently (European Central Bank, 2009).

Several arguments suggest that switching costs might be relevant in credit markets. First, there are transaction costs of closing the accounts with the current lender and opening new ones with another bank. Second, there exist learning costs like those generated by switching to a new bank following specific rules and practices in its lending activity after learning different rules adopted by the old lender. Third and more importantly, switching costs are also related to the investment in setting up a close tie with a bank (Boot, 2000). Changing the lender may imply the loss of a number of relationship-based benefits such as inter-temporal smoothing, increased credit availability, enhancement of borrower's project payoffs, and more efficient decisions in case of financial distress.

In this paper we study switching costs in business local credit markets, by focusing on a specific kind of switching behavior that is the change of a firms' main bank. We focus on the main bank because multiple bank financing is a widespread phenomenon, even among small sized firms (Detragiache et al., 2000) and, in this case, it not obvious how to define a switching episode. However, as indicated by Petersen and Rajan (1994), Elsas and Krahnen (1998) and Elsas et al. (2004) multiple banking often coexists with the presence of one bank with a pivotal role, whose presence will reduce coordination costs of the other arm's-length lenders while the latter help mitigating the hold up problem generated by the privileged position enjoyed by the main (and more informed) bank. As a consequence also multiple bank firms are likely to face switching costs when they change their main bank, because at least the relationship lending-based investment is to be duplicated.

We analyze switching costs with two empirical exercises. First, we investigate their existence and estimate their magnitude with a test that follows directly from the definition of switching costs: if they characterize the demand side, then choosing a specific banking partner today reduces the utility from selecting a different main lender tomorrow. Through a standard revealed preferences argument it is possible to show that this is equivalent to say that firms' choices across lenders are persistent over time. However, persistence in lending

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relationships could also be generated by unobserved time invariant bank–firm matches (the so called spurious state dependence). To take account of this, we propose a mixed logit model through which it is possible to measure true persistence in lending relationships by simultaneously controlling for time invariant preferences of borrowers across lenders. As far as we know, the assessment of switching costs through a mixed logit model aimed at detecting true inertia in buyer–seller relationships is new in the context of credit markets.[1] Using very detailed data at bank–firm level on four Italian local credit markets we find that firms changing their main lender incur significant switching costs. According to our estimates, on average being the primary bank in the previous period increases the probability of being the main lender in the current period by about 70%. The estimated effect is larger for single-bank firms (about 80%) but is also significantly sizeable for multiple-lender enterprises (45%).

Second, after showing that switching costs are statistically significant and that they have a very large impact on firms' choices, we test whether banks price discriminate between old and new borrowers offering more favorable conditions to the latter. In fact this is a generally agreed prediction in the Industrial Organization literature that analyzes pricing strategies in industries with heterogeneous switching costs and customer recognition (Chen 1997, Taylor 2003). Our empirical findings, mainly based on an interest rate equation, show that banks actually lure borrowers attached to competing main lenders with attractive entry-level offers. In our preferred specification, switching premium amounts to 44 basis points. This "paying customer to switch" evidence is robust to a number of controls including those for selectivity and firm-level omitted variables. Moreover teasing interest rates are also found in the case of multiple bank firms switching to an already known new main bank.

The existing literature on switching costs is huge and an exhaustive survey may be found in Farrell and Klemperer (2007). However, there are still few empirical contributions explicitly referred to the analysis of switching costs in business lending markets. Kim et al. (2003) infer the existence of switching costs and assess their magnitude in Norwegian credit markets by analyzing aggregate market shares and interest rate dynamics. Gopalan et al. (2007) investigate motivations for firm switching to a new bank by using micro data. They find that firms decide to change their previous banking partner mainly to obtain larger loan amounts and hence to overcome borrowing constraints at their existing bank.

Another recent line of research analyzes whether switchers are offered a discount or alternatively pay a premium on the interest rates offered. Within the theory of insider vs. outsider lending (Sharpe, 1990) and using data drawn from the 1998 Survey of Small Business Finance, Black (2006) finds that outsider rates tend to be higher than insider rates.[2] Ioannidou and Ongena (2010) reach an opposite result: in their data on loans extended by Bolivian banks a firm borrowing from an outside bank is charged an interest rate that is more than 50 basis points lower than that charged on a comparable loan from its current inside bank.

We contribute to these streams of literature in several ways. First, disentangling switching costs from unobserved heterogeneity in explaining the correlation over time of bank–firm matches has important consequences on the understanding of credit market dynamics. Consider, for example, a bank that makes a *transitory* loan interest rate cut. If the true model of firm behavior is characterized by unobserved heterogeneity and switching costs are absent, the price cut will give rise to a *transitory* market share increase for that bank. In markets featuring switching costs, however, the same strategy will generate a *non-transitory* increase in the number of attached borrowers and this, in turn, modifies dynamic pricing strategies, as our evidence on teasing interest rates shows. Second, our findings shed also a new light on the nature of bank–firm relationships in the Italian credit market. The existence of sizeable switching costs and of "paying customer to switch" strategies even in the case of firms selecting a new main lender with which they already had a lending relationship in the past points to the fact that the main lender plays a special role among the firm's creditors. Notably, this holds true even in the case of the Italian credit markets where the fragmentation of credit supply is high and resorting to multiple lending is very common. Finally, our joint evidence on the true persistence in lending relationships and on teasing rates gives some clues on how to disentangle between alternative models of banking competition. While models based on Betrand competition can explain the existence of poaching strategies, they come to terms when they have to explain true persistence in bank–firm relationships. On the other hand, adverse selection models can easily explain borrowers' lock-in but are unable to clearly justify the discounts offered to the firms switching to an already known bank. Models with heterogeneous switching costs and customer recognition can easily accommodate the two pieces of evidence.

The rest of the paper is organized as follows. In Section 2 we briefly recall theoretical contributions dealing with credit markets with switching costs. Section 3 describes the data. Our main results are presented in Section 4 and discussed in Section 5. Concluding remarks are presented in Section 6.

2. Theoretical background

In credit markets banks deliver their services directly to customers and hence they are able to know whether a given borrower is one of its current clients and price discriminate on the basis of this knowledge. Moreover, switching costs are likely to be heterogeneous across firms: for instance switching is expected to be costlier for a small and opaque single-bank firm with a well established relationship with a bank than for a large firm with multiple lenders and characterized by a large amount of hard information. In the Industrial Organization literature the models that best fit these two features are those analyzing markets with heterogeneous switching costs and customer recognition (Chen, 1997; Taylor, 2003). One general conclusion of this literature is that in equilibrium firms offer discounts to their competitors' customers and that clients with "low" switching costs (below a certain threshold) change their supplier.

Beyond customer recognition and switching cost heterogeneity, credit markets exhibit additional peculiarities. First, borrowers may also differ in the quality of their investment projects and therefore in their ability to repay debt obligations. Moreover, there exist relevant asymmetries of information both between lenders and borrowers and, on the supply side, between informed and uninformed banks (Sharpe, 1990; von Thadden, 2004). As explained in the Introduction, the lender–borrower asymmetric information is one of the main sources of switching costs as the change of the banking partner involves on the borrower's side incurring into additional costs to invest into a new relationship. On the other hand, the existing lending relationships generate an information advantage for the inside with respect to outside bank, thereby limiting the ability of the latter to compete for good quality attached borrowers. Likewise switching costs, this asymmetric information on the supply side generate obstacles to borrowers' mobility as well as price discrimination between new and old customers. However, in the latter case these strategies are mainly driven by the threat of the adverse selection faced by competing outside banks. In Section 5, we will discuss some empirical implications of these different kinds of asymmetric information, now we are going to present a model where lender–borrower asymmetric information and the related switching costs play a central role.

[1] Earlier empirical applications mainly regarded the realm of marketing science, health economics, transport economics and mobile telecommunications market. See, for instance, Erdem (1996), Johannesson and Lundin (2000), Brownstone et al. (2000), Lee et al. (2006) and Grzybowski (2008), respectively.

[2] See also Black (2008). In this paper the author shows that theoretical predictions are unclear: the interest rate for firms borrowing from the inside lender may be higher or lower than those for firms that borrow from an outside lender.