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Uncertainty, Market Power and Credit Rationing[*]

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Abstract — This paper explores the nexus between uncertainty and credit restrictions. A Post Keynesian approach to an explanation of access rationing to credit is developed and contrasted with the dominant relationship lending school. It is argued that access rationing to credit has be understood in terms of uncertainty and power. Differences in systemic uncertainty to which hetrogenous market participants are exposed can explain the reluctance of banks to lend to certain applicants. Monopsonistic power and uncertainty further help to understand why banks of a different size show differences in their lending behavior.

Keywords: Fundamental Uncertainty; Credit Restrictions; Power

JEL-Classification: E12; E51; D81; D89

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Introduction

Fundamental uncertainty and the assumption of an endogenous money supply have become key concepts of Post Keynesian theory. Important aspects of the relationship between uncertainty and endogenous money however still remain unexplored. The relationship between bank behavior under fundamental uncertainty and access restrictions to credit is such an aspect. The nexus between these concepts is the topic of this paper.

Credit restrictions have become an emerging field of research The more recent literature hereby is particularly concerned with the credit access of small and medium sized enterprises (SMEs). Despite substantial research on financial crises (e.g. Grabel 2000) and bank runs (Basu 2003) heterodox authors have left this field of interest largely to the New Institutional relationship lending school. The building blocks of the dominant explanation of access restrictions to credit thus remain bounded rationality, the principal agent problem and the theory of hierarchical control (see Elyasiani and Goldberg 2004 for a survey of this literature).

In contrast to this literature this paper is motivated by the presumption that crucial decisions underlie fundamental uncertainty (Davidson e.g. 1991). Credit decisions are crucial decisions. Thus credit restrictions against specific groups have to be explained in terms of uncertainty-analysis (see e.g. Rochon 1999). The starting point hereby is the observation that firms are a tool to cope with uncertainty (Dunn 2000) and that uncertainty and power are intrinsically linked (Stockhammer 2007). Extending these arguments it is argued that more powerful actors can use their position to pass on adverse impacts of uncertain events to

others. For the relationship between market participants hereby especially monopsonistic and monopolistic power are important. As a result on oligopolistic markets with heterogenous firms uncertainty is structurally concentrated amongst less powerful SMEs. This introduces systemic biases against SMEs with regard to the availability of external funds; including bank credit. Only small banks that have to avoid the monopsonistic power of relatively large debtors still provide external finance to SMEs.

The paper is organized as follows. In order to provide some motivation Section 2 briefly reviews the empirical evidence that exists with regard to access restrictions to credit. Section 3 discusses the relationship lending approach to credit rationing. Section 4 presents a possible Post Keynesian alternative. Section 5 concludes.

Stylized Facts

The number of empirical surveys with a focus on the specific characteristics of SMEs that was published during the last decade is legion. To a large extent these surveys constitute a body of literature that aims at supporting the theory of relationship lending (see below). Their largely unequivocal findings can be summarized as follows:

1. Small and medium sized enterprises (SME) are generally constrained in their access to credit (Waagenvoort 2003, Winker 1999).

2. Small banks lend proportionately more to small enterprises than large banks (e.g. Nakamura 1993, Peek and Rosengreen 1996, Strahan and Weston 1996, 1998). Obviously this also indicates that small banks lend proportionately less to large firms than large banks.

3. Relationships with small firms change when a bank grows in size. Especially after

mergers that result in large post-merger banks lending to SMEs drops significantly (Peek and Rosengreen 1996, Berger et al. 1998, Spaienza 2002).

4. There is *contradicting* evidence whether the length of a relationship increases credit availability (yes: Berger and Udell 1995, Peterson and Rajan 1994, no: Blackwell and Winters 1997, Cole et al. 2004). Especially the younger literature has failed to find empirical support for an impact of the length of a relationship on credit availability.

From this evidence two crucial questions arise. First, why do SMEs generally suffer from a restricted access to credit? A theory that aims at explaining the above mentioned facts requires explaining what is peculiar about SMEs that makes them subject to a restricted access to credit. Second, how can the reluctance of larger banks to lend to SMEs be explained? Or alternatively put why do small banks prefer relationships with small borrowers? The most popular explanation for these findings is the theory of relationship lending (banking). This approach is briefly presented in the following section.

Relationship Lending

The theory of relationship banking gained increasing popularity over the last decade. The starting point of this stream of literature is the theory on information-based banking. Banks here play a pivotal role in the retrieval and interpretation of information, which is their most important function (e.g. Diamond 1984). They can perform these activities more efficiently than a single lender and thus create information-based intangible values. This is the background in which banks have to pursue the sole motive of their actions: profit-maximization.

The pursuit of that goal however is difficult. The environment is complex and it is impossible

for decision makers – even for highly specialized banks – to achieve full information about the objective risk properties. Strict optimization thus is not possible due to a lack of access to and computability of information. However, information appears as strictly additive (e.g. Berger and Udell 1998) and uncertainty is merely an epistemological category. Thus decision makers develop decisional rules that abstract from the complex environment and rely on a reduced subset of information. After an evolutionary process only those rules survive that enable to approximate the prevalent (unalterable) probability distribution accurately. Decision makers apply *bounded rational decision rules* (e.g. Simon 2002).

The information that is required for these risk-evaluation procedures however is not easy to attain. The possibility remains that banks are not able to reveal all the information which their decisional rules require to fully identify the risk-characteristics of a particular borrower. Asymmetric information might exist. As a result it is possible that the risk exposure of a potential borrower can not be fully identified. Consequently, it is not possible to match each borrower with a "fair" loan rate. The pool of applicant might be heterogeneously constituted and modifications in the loan rate can alter its risk structure. An increase in the loan rate might drive the less risky projects at the margin out and increase the average risk (adverse selection). There thus is a ceiling to the loan rate after which banks' profits become depressed. Yet, banks have to obtain funds on the market for loanable funds in order *before* they are able to lend. Given a sufficiently low loan rate this might only allow for a rate paid on deposits that is too small to attract sufficient funds on the markets for loanable funds. Quantitative credit restrictions are the result (Stiglitz and Weiss, 1981; Jaffee and Russell, 1976).[1]

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[1] The theory on quantitative credit restrictions actually belongs to the New Keynesian literature. Though, it forms the motivation and starting point of the New Institutional concept of relationship banking.

These informational problems are influenced by the shape – particularly the size – of an organization. Banks as well as their potential borrowers are exposed to the principal agent problem. The larger an organization becomes the larger the number of hierarchical levels between an operative agent and the ultimate principal becomes (Williamson 1975). Thus the control of agents is ever more difficult the larger an organization is. In order to be able to direct, control and sanction agents in an impersonal environment with many hierarchical levels it is necessary to standardize their tasks and targets. The information that is used in large organizations consequently comes in the disguise of hard facts. As both large banks and large firms thus rely on information of the same type it is easier for them to communicate. In smaller organizations on the other hand monitoring of agents comes in a more direct form. For the case of a small bank this implies that loan officers can be monitored more directly and thus can be granted more (informational) discretion in the lending process. Thus loan officers in smaller banks are able to establish a relationship with a potential borrower and to 'reconstruct' the lacking hard information through relationship-experience (Berger and Udell 1995, Cole et al. 2004). This helps in the communication with smaller firms that – due to more direct supervision – rely on similar information. Consequently, SMEs find it easier to obtain credit by small banks.

For the proponents of relationship lending this explains the above presented stylized facts. As the number of small banks decreases this indicates that the credit availability to SMEs is depressed. Nonetheless, the implications deduced from this are relatively sobering. As only forecast-efficient decisional rules can survive and as profit-maximization is the pivotal target of all actors, institutions will arise that specialize in the particular problems of SMEs. In as much as this is not the case, SMEs must have a disadvantage in terms of efficiency. In the following section it will be argued that a Post Keynesian explanation leads to substantially different results.

A Post Keynesian Explanation

The role of banks

A cornerstone of Post Keynesian theory is the assumption of an endogenous money supply. Hereby, banks are not the sober producers of reliable, additive and correct information as in the New Institutional perception. In the Post Keynesian theory the importance of banks stems from their role in the creation, circulation and credibility-maintenance of money as a capitalist institution. To some extent banks can be regarded as 'producers' of credit money.

This role however has to be performed in an environment of fundamental uncertainty (Davidson 1991). In a situation that underlies fundamental uncertainty a probability distribution about the future course of events can not be given. The future course of future events is ontologically open (Dunn 2001). Though, uncertainty is not necessarily an ontological constant. There may be different 'degrees' of uncertainty that can be compared against each other in an ordinal way. In this paper a higher degree of uncertainty refers to a situation where the amount and potential impact of uncertain events that can affect a participant's economic position is relatively higher than that of another participants.

In such an environment the very function of entrepreneurs is to make crucial (i.e. uncertain) decisions (Davidson 1995). The firm hereby has been identified as an attempt to cope with the unpredictability of the environment and to maintain flexibility (Dunn 2000). Certainly does the conventional notion of profit-maximization as the ultimate goal of all action become impracticable for the analysis under uncertainty. Without the possibility to make correct forecasts an actor would be nothing but an arbitrary random machine helplessly pending on whatever "intuition" her stomach delivers. Under fundamental uncertainty the maximization of power must be regarded as the motive of an enterprise's actions (Lavoie 1992, 99ff.).

Power is the mean by which the multi-dimensional target functions that modern enterprises necessarily entail can be best pursued. Maximizing power enables to pursue a variety of growth, survival and profit targets under a multitude of alternate development paths.

It furthermore has been argued that power and uncertainty are intrinsically linked (Stockhammer 2007, Stockhammer and Ramskogler 2007). Thus to some extent power can be interpreted as a mean to shift uncertainty and maintain flexibility in an unpredictable world. To avoid misunderstanding, it is not implied that uncertainty as such can be shifted around the economy like a chessmen. The assumption is made that power enables to (contractually) force others to carry adverse impacts of uncertain events (e.g. in the course of a market transaction).

In order to maximize power an enterprise has to extend its – direct and indirect – command over capital[2] (Galbraith 1971 Chap. 5, Dixon 1989, p.589) while at the same time minimizing its exposure to uncertainty. In the case of banks this means that they aim at expanding their balance sheet total via the creation of credit (next to other financial activities). This allows for both, the prospect of sustainable capital gains as well as partial control over the fortune of the indebted firms. Certainly banks hereby have to avoid a straightforward loss of their invested capital. They thus are deliberate in the composition of the portfolio of their debtors and try to sort out creditworthy borrowers from those that they believe to be prone to failure. But how do banks decide about the creditworthiness of a particular borrower in an environment in which an objective evaluation is not possible?

The answer is simple. Banks use conventionally derived rules of thumb in order minimize the

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[2] Recently this especially extends to the maximization of power over financial assets which in turn allows for exerting power over other firms.

uncertainty related to their credit granting decisions. Though, the heterogeneity of agents leads to differences in the exposure to uncertainty (Stockhammer and Ramskogler 2007). Thus a bank can and will minimize the uncertainty to which their pool of borrowers is exposed. The confidence of a bank in whatever conventionally derived forecast about the creditworthiness of a borrower consequently is crucially influenced by the general degree of uncertainty to which this borrower is exposed. Banks discriminate against borrowers that face a higher degree of uncertainty.

As however also potential borrowers rely on arbitrarily derived decisional rules there is no guarantee that the decisions of banks are compatible with those of credit applicants. Situations of asymmetric expectations can occur in which borrowers believe their projects to be worthwhile investment while banks do not (Wolfson 1996). Due to expectational mismatches there always will be a 'fringe of unsatisfied borrowers' that constitutes a demand-overhang for credit. Quantitative restrictions are a regular occurrence in a monetary production economy (Wray 1992 p.305, Dow 1996; 1998). Contrary to the traditional view however, these restrictions are not caused by a failure of the price mechanism that is incapable of equilibrating supply and demand. In the Post Keynesian perception quantitative credit restrictions are the result of the discretionary decisions of banks' to discriminate against certain (groups of) borrowers.

Power, uncertainty and size

As the bank's perception determines the constitution of the fringe of 'unsatisfied borrowers there are certain market applicants that are more likely to be refused credit than others found in the 'fringe of unsatisfied borrowers' than others. In order to identify the members of this group it is necessary to leave the world of perfect competition as a first step. Once it is realized that actual markets are far more akin to oligopolies one can identify heterogeneous

agents that perform different roles in the market.[3] In oligopolies there are market leaders and market followers each having a peculiar role and position. In such markets there can exist monopolistic power and an uneven distribution of this power amongst market participants.

Typically hereby (partial) market leadership and size of firms coincide. Larger enterprises often act as market leaders within their sectors and are able to influence prices, qualities and even quantities of the goods traded. The control over substantial amounts of capital leaves them in a position to react more flexibly to an uncertain event than a small enterprise possibly can. They have the potential to threaten off potential market entrants and to control their competitors. Often they enjoy at least some degree of monopsony adverse (some of) their suppliers as well as adverse their workers.[4] Small firms on the other hand often have to accept prices set by market leaders or monopsonistic customers both with regard to input goods as well as with regard to their outputs. They run the danger of a sudden strategic move of a larger enterprise trying to bid competitors out of the market. They have less ability with regard to their control over capital as well as with regard to price tolerance to react on unforeseen events. Put briefly large enterprises typically enjoy a substantial degree of power over small firms. Power thus increases over-proportionately with the size of a firm.

As a result larger enterprises have more ability to pass on uncertainty, i.e. the responsibility to carry an adverse impact of an uncertain event. They can coerce their customers, suppliers and workers to accept contractual terms that leave them with the most disagreeable impacts of uncertain events. Often the flipside of this ability is that small enterprises have to carry

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[3] The effects of the relationship between power and uncertainty in oligopolistic markets with regard to the process of technological innovation have recently been elaborated by Courvisanos (2005).

[4] At least in an environment with persistent unemployment firms can exert "firing threat" against their workers to improve their own bargaining position (see Stockhammer 2007 for a more elaborate argument). Especially with sector-specific human capital monopsonistic aspects increase this power amongst relatively large firms.

this uncertainty. As a result we arrive at the proposition that the exposure to uncertainty is inversely related to the size of a firm. The result with regard to the credit granting process is straightforward. The confidence in expectations about an applicant is influenced by the degree of uncertaitny to which this applicant is exposed. Thus banks hold expectations in small firms with a lower degree of confidence. For firms at the expectational margin size can become the essential element that on which the provision or the refusal of a loan depend. The generally restricted access to credit from which small firms suffer is thus a logical result of the shape of oligopolistic markets.

Heterogenity in the banking sector

Having established that SMEs are credit constrained because an investment in SMEs is goes with a higher degree of uncertainty the question remains why small banks are less reluctant to lend to SMEs than large banks. In order to answer this question it is useful to start with the specific characteristics of a credit contract. A bank hands out a certain amount of money against the promise of the borrower to repay it with interest within the stipulated time. This promise enables a bank to credit the asset side of its balance sheet with the (present discounted value of the) claim against the debtor. The claim then remains as an asset in a banks balance sheet. When a borrower defaults on the loan however a bank has to write it off and the balance sheet is shortened by the outstanding amount. This is lender's risk and can lead to an increasing a bank's leverage ratio (and with it its risk as Kalecki's principle of increasing risk indicates). Lender's risk in combination with the average bank-borrower size ratio can affect a bank's exposure to uncertainty.[5]

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[5] It is not indicated that the bank-borrower size ratio could be used to 'measure uncertainty'. In this paper the bank-borrower size ratio simply serves as a proxy of the ability to shift the impact of uncertain events onto others.

A healthy bank will cope easily with the default of a loan that is small in relation to its own size. The relevant question from a bank's point of view is how large the percentage of its assets at stake is in relation to its overall assets. The absolute value of a potentially lost asset is irrelevant in this respect. The default of a borrower whose loan accounts for a considerable amount of a bank's overall assets can vitally hit a bank. Thus the danger of bankruptcy of a large borrower – usually coinciding with a large firm – can vitally hit a small bank whereas it might only scratch a large bank.

While this first of all seems to be a question of a bank's confidence into a particular borrower its potential impact becomes obvious when the power-relations between the bank and the borrower are considered. A relatively large borrower might be able to gain monopsonistic power and thus weaken the bargaining position of a bank. To improve her conditions a big customer can threaten a bank to look for funds somewhere else and to thereby shorten the bank's balance substantially. She might even threaten to default. These threats that a big borrower is able to apply bestows her with substantial power that she can use to pass on the impact of an uncertain event to her bank (e.g through extending/ increasing credit, debt moratoria etc.). As a result the lending relationship – which originally attributes the more powerful position to the bank – can be inverted. A high 'degree of monopsony' in a bank's balance sheet thus increases the Bank's exposure to uncertainty substantially.

A high 'degree of monopsony' in a bank's balance sheet might even lead to a situation where the discretion of granting (lines of) credit slides (partially) out of the banks' hands. Under the assumption of an endogenous money supply this is not prima facie impossible. However, when a bank expands credit more rapidly than the banking sector it has to take up funds in the inter-bank markets and her leverage ratio begins to rise (Dymski 1988). Alternatively it has to aggressively bid for deposits which erodes the interest differential between the rate

paid for funds and the rate received for credits. Both, increased leverage ratios and decreased interest differentials suppress a bank's liquidity and hence reduce its ability to encounter unexpected events. Larger borrowers however require higher lines of credit that are entirely outside the scope of a bank's discretion and they might exert their monopsonistic power to receive them. Thus the smaller the average bank-borrower ratio is the harder it is for the bank to closely track the expansionary path of the banking sector; again this increases a bank's uncertainty.

Thus, originating out of the management of uncertainty, bargaining relations and balance sheet considerations small banks find it more secure to specialize in small borrowers. This even is the case as this group of borrowers generally signifies a higher degree of uncertainty. As an overall result however we find a general asymmetry of the distribution of uncertainty amongst lenders as well as amongst borrowers. Modern monetary production economies thus are characterized by an uneven size-related distribution of uncertainty amongst market participants. Both small firms and small banks are less powerful and more uncertain. This puts them in a position that makes them more akin to instability and failure than larger enterprises. Over the course of recurrent slumps this will lead to a systemic and structural process of concentration within both the financial and the production sector. The ongoing "consolidation" of the banking sector (Huffschmid 2002, Chap 2) seems to be the most visible augury of this situation.

Conclusions

This paper has dealt with access restrictions to credit. The predominant approach of relationship banking has been sketched. This approach maintains that the difficulties of SMEs to obtain credit problem can be explained through the principal agent problem and the

theory of hierarchical control. This was contrasted with an approach that builds on the Post Keynesian concept of fundamental uncertainty. Hereby, we have started from the observation that the exposure to uncertainty is modifiable and can be distributed through the exercise of power. In oligopolistic markets power and the command over resources, i.e. firm size, is positively related. Consequently, large enterprises have substantial power and thus have a capability to shift their uncertainty. This increases – directly and relatively – the uncertainty associated with small firms. Accordingly, smaller firms are exposed to a higher degree of uncertainty and unattractive investments. Yet, the power-uncertainty-size nexus potentially enables borrowers to exert power over their lenders as well. Thus, a small bank-borrower size ratio potentially attributes monopsonistic power to borrowers. Therefore, small banks try to avoid a high degree of monopsony amongst their borrowers. Consequently, even though small firms are more uncertain investments, small banks remain a potential contact point for SMEs. These findings are consistent with the initially presented evidence.

The implications of the presented Post Keynesian approach differ sharply from the implications of the traditional credit rationing approach. First, we find that credit restrictions are by no means a transitory phenomenon as some proponents of the literature on relationship lending argue (e.g. Cole et. 1999). Rather credit restrictions are an important symptom of the distribution of uncertainty within capitalist economies and contribute to existing power relationships. Second, the distribution of profits matters. It is mainly SMEs whose access to funds is restricted. If the overall profit rate increases and accordingly monopoly power rises, additional profits might be simply absorbed by the larger enterprises whose access to external funds is not restrained. The possibility exists that such profit increases are simply allocated to increased dividend payments (Stockhammer 2005-06). Thus there is no reason to believe that an increase in the profit rates alleviates the impact of credit rationing and leads to increased investment.

The above model of course only offers a hypothesis. Further empirical testing would be desirable. Especially the uncertainty-power nexus might be an interesting field of further research.

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