

Towards a Role for Regional Banks

Comment on Raab and Welzel

1. Introduction

In its attempts to open up European markets and thus to foster competition, improve consumer welfare, and perhaps also increase growth potentials, the regional demarcation of banking markets has finally come under serious scrutiny by the European Commission (2007).

As Raab and Welzel (2011) demonstrate from a purely industrial economics perspective, the concerns of the Commission are well founded, and from an efficiency – or at least from a consumer surplus perspective – regional demarcation should be broken up. Somewhat surprisingly, their analysis shows that breaking up regional markets will intensify competition not only among regional banks, but especially between regional banks and private banks. In other words, regional demarcation could be interpreted as an instrument to effectively shelter private banks from competition rather than regional banks from competition of their peers. This result seems to suggest that anticompetitive interests are, and have been, the primary driving factor behind regional demarcation.

Despite the elegance of their model, in Raab and Welzel (2011) banks are nothing more than oligopolistic firms playing a Cournot game, or at least a capacity-constrained price setting game under symmetric information. Although certain intermediation functions are kept in the background as motivating the underlying structure, the authors do not make them an explicit part of their model. This feature is also reflected in the way the authors model regional banks: regional banks are

characterized by a different objective function, including some output orientation but without an underlying micro-foundation. Are regional banks merely different in their taste for lending volume, or does lending volume serve as a proxy for some aspects of regional lending? Moreover, will good loans weigh equally in the objective function as straight subsidies in bad projects?

In this comment I follow Gehrig (1998) and introduce the fundamental banking function of lender screening into the framework offered by Raab and Welzel (2011). Doing so enables me to discuss how this function is affected by changes in the competitive environment. By allowing for imperfect screening of lenders, I introduce both a fundamental rationale for the intermediation function of banks and a potential allocative role for regional lending, and thus, another potential *raison d'être* for the demarcation principle in the first place.

As it turns out, introducing the specific banking function makes results less clear-cut but also more exciting. Depending on the underlying pool characteristics and the screening technology, an increase in the intensity of competition may have a stimulating or a dampening effect on borrower screening. Accordingly, competition may identify and fund more or fewer truly good projects and fewer or more truly bad projects. Within this framework, if regional demarcation generates incentives to more intense screening culminating in financing more truly good projects in the region and avoiding bad regional lending at the same time, then from an allocational perspective it is a potentially useful policy. This scenario may actually result in less aggregate lending.

Thus, successful regional policies are characterized by superior lending performance but not necessarily by more aggregate lending. To the extent that competition reduces rents, the incentives to screening are

ambiguous. If competition is largely about increasing market shares for good projects, then lending standards will suffer and the potential role for regional lending is diminished. However, if competitive screening is largely about avoiding bad lending, then competition may increase lending standards, and regional demarcation will be wasteful right from its inception since it counteracts the beneficial effects of competition on screening.

2. Model

Consider the basic model that Raab and Welzel (2011) analyze. This model comprises two separate markets in which one regional bank is active in each market and one private bank is active in both markets. Banks compete in lending volume as in Cournot and prices are set in each regional market such that the markets clear. Competition is two-sided in the sense that banks compete for deposits and loans simultaneously.

I introduce adverse selection and a screening stage to this set-up in the following way. All projects are of unit size. The potential returns cannot be observed at the lending stage. However, it is common knowledge that only a proportion $\lambda > 0$ of projects can repay in full, but the remaining proportion of $1 - \lambda > 0$ will repay only a portion $0 \leq \pi < 1$ units of funds at the final termination stage. I am particularly interested in low levels of π . Banks have access to a costly screening technology that allows to produce imperfect information about the likely borrower type before lending.

After lending markets have cleared, banks perform a creditworthiness test on their potential borrowers. If the test turns out to be positive, then

the bank grants a loan of unit size at the equilibrium lending rate. Otherwise, the bank declines to make the loan and thus the potential borrower is excluded from the market.¹ The test is imperfect and will discover a truly good project with (the conditional) probability $\alpha > 0$ and a truly bad project with (the conditional) probability $\beta > 0$.²

Banks can affect the precision of the creditworthiness test by investing resources $e \geq 0$ such that $\alpha'(e) > 0$ and $\beta'(e) < 0$. The more precise the creditworthiness test, the lower are the type-I errors $1 - \alpha(e)$ of declining loans to truly creditworthy firms and the lower are the type-II errors $\beta(e)$ of erroneously lending to unworthy projects. The banks select the precision of the creditworthiness test and their lending volume to maximize overall expected profits

$$\max_{e_i, q_i} \alpha(e_i) \lambda (r_L - r_D) q_i - \beta(e_i) (1 - \lambda) \pi (1 + r_L) q_i - e_i$$

For the Cournot model with $\sum q_i^A = D^A(r_L)$ in region A and $\sum q_i^B = D^B(r_L)$ in region B, it is straightforward to establish an analogous result of Proposition 3.1 of Gehrig (1998):

¹ This property is the consequence of a highly stylized static model of competition. The model is not explicit about the interaction between screening and price determination but instead relies on the coordinating function of some (unmodeled) auctioneer. In a dynamic model with individual price-setting, one might allow a borrower to apply for a new loan in the next period at another bank (e.g., Gehrig and Stenbacka, 2011)

² See Riordan (1993) for a similar model with a fixed screening technology in an auctioneer-based model.

Proposition 1 (equilibrium screening)

In each regional market, the equilibrium screening intensity of a profit-maximizing bank is determined by

$$\alpha'(e_i)\lambda(r_L - r_D) + \beta'(e_i)(1 - \lambda)(\pi(1 + r_L) - 1 - r_D) = \frac{1}{q_i},$$

where r_L is the equilibrium lending rate, r_D the equilibrium deposit rate and q_i the equilibrium volume in that market.

Analogously, Corollary 3.2 of Gehrig (1998) applies and translates into:

Corollary 2 (Regional Banking Criterion)

$$\frac{de_i^*}{dr_L} \geq 0 \Leftrightarrow \alpha'(e_i)\lambda \geq -\beta'(e_i)(1 - \lambda)\pi$$

Accordingly, the reaction of the equilibrium lending rate to increased competition in a local market depends on conditions of the underlying project pool characteristics and on the properties of the screening technology. Increased competition, as measured by a lower lending rate, increases screening intensity only if the marginal return on avoiding bad lending exceeds the marginal return on truly good projects. Otherwise, it tends to result in laxer lending standards.

One immediate implication of this result is that the relation between the intensity of competition and overall information production, and hence

social welfare, may be ambiguous. Depending on the pool characteristics and properties of the screening function, competition may result in a race to the top (stricter lending standards) or a race to the bottom (laxity in lending).

From a consumer perspective the implications are straightforward. Increased screening will benefit the truly good entrepreneurs, since they will receive funding with a higher probability, while truly lower-quality projects will be rejected with higher probability. However, as I argue in the previous paragraph, the conditions for better information production depend on the economic environment.

Based on this result, the view of the European Commission (2007) towards abolishing regional demarcation implicitly relies on the condition $\alpha'(e)\lambda < -\beta'(e)(1-\lambda)\pi$ being satisfied. Unfortunately, however, so far no empirical evidence on the pool characteristics of the underlying lending markets has been made available, neither by the commission nor by the banking industry or regulators. In the absence of relevant empirical information, the support of the Commission's view either requires a very naive view about the banking industry or a strong, if not ideological, belief in the industry being characterized by a race to the top rather than to the bottom.

3. Towards a Role for Regional Banks

In my second major comment I take issues with the objective function of regional banks. Raab and Welzel (2011) assume some output

orientation, but the present set-up allows for modeling real policy issues. To the extent that for political reasons regional banks should want larger output, presumably they should seek worthwhile projects rather than unprofitable lending. This issue is precisely what my model can address.

To the extent that regional expertise is immobile, regional development policies might be concerned with improving lending conditions, particularly to truly good local projects, even at the cost of screening investments that might be considered excessive by private banks. Hence, limiting the operational basis for regional banks might direct their screening incentives in a better direction. Under the condition in Corollary 2, limiting competition among regional banks will raise equilibrium lending rates, and thus, equilibrium screening intensity in both regional markets. In fact, under the condition in Corollary 2, both regional banks and private banks will increase screening.

In addition to this competitive effect, regional policy might place a higher weight on regional loans relative to global loans in other markets. Such policies would affect the screening intensity of regional banks on regional lending even in the absence of an explicit demarcation policy. Hence, $\delta^A > 1$ and $\delta^B > 1$ denotes the weights for regional lending in the respective objective functions of regional banks A and B. In the absence of regional demarcation, the objective function of regional bank A reads

$$\delta^A \alpha(e_i) \lambda (r_L^A - r_D^A) q_i^A + \alpha(e_i) \lambda (r_L^B - r_D^B) q_i^B - \beta(e_i) (1 - \lambda) \pi \left((1 + r_L^A) q_i^A + (1 + r_L^B) q_i^B \right) - e_i$$

and likewise for bank B.

Putting a higher weight on regional loans would generally strengthen screening incentives for regional banks. This effect would hold even if there were no discrimination in screening across borrowers from different

regions. As follows readily from the appropriate generalization of Corollary 2, the conditions needed for regional banking to be desirable increase in the political weights δ^A and δ^B .

Although the above formulation assumes that screening cannot be targeted to local borrowers, the result is even stronger when regional targeting of screening is possible. Moreover, when banks are allowed to target their screening activities and discriminate across borrowers from different regions, a policy of regional demarcation may not be necessary to induce better regional screening.

This example shows that regional demarcation may not even be necessary to induce political incentives in lending. Regional political goals may be achieved by offering appropriate management incentives. For example, to stimulate a high screening intensity, management could be given extra ex-post rewards for successful regional lending. The precise weights of the rewards should depend on the political evaluation of development goals, potential employment effects and possible spillovers to the regional economy.

4. Conclusion

In this comment I show that when costly information productions is introduced as a fundamental banking function, the allocative effects of regional demarcation are less clear cut. Increased competition in the banking sector may or may not stimulate information production, depending on whether the competition induces a race to stricter lending standards or a race to more lenient standards. Hence, an overall

assessment should also take into account the implications for societal information production.

Moreover, I show that a potential role for regional banks consists in stimulating regional information production. Especially in markets in which competition fosters a race to laxity, and if viewed from a societal perspective, type-I errors that occur when banks erroneously decline truly good projects may happen too frequently. In such economies, properly incentivized regional banks are able to "correct" market information production. This effect is especially true when regional development is a political priority.

Finally, my analysis suggests that the appraisal of regional lending policies should take into account the performance of regional lending portfolios. If regional demarcation policies are viewed as being economically successful, then this success should be reflected in a better performance of the regional loan portfolios. If, on the other hand, those loan portfolios perform worse, then the position of the European Commission would be more understandable. In that case, regional lending would tend to be more related to state aid and subsidies rather than to improving lending conditions.

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