Appendix

In this Appendix, we first discuss the Finnish banking market environment. We then discuss the issue of our sample consisting only of cooperative banks. Third, we present the year-wise descriptive statistics and check them for any anomalies and/or outliers. We also present data on the branch networks of different banking groups. We then present selected conditional distributions to evaluate in a preliminary fashion our hypotheses. Fifth, we discuss our estimator, and our strategy in choosing moment conditions. Finally, we consider the robustness of our proxies and econometric results.

A. The Finnish Banking Market Environment

Currently, partly as a result of the severe economic crisis in Finland in the early 90's, the Finnish banking market is dominated by a few bank(ing group)s, one of which consists of over 250 local cooperative banks. Our sample consists of 250 of these banks. Each of these banks is an independent bank, and they operate in separate, non-overlapping, geographical markets. The other traditional group of local banks, the savings banks, were the most prominent victim of the banking crisis. They have dramatically reduced in number as a consequence of a) a large merger involving most of them and b) a splitting of the merged bank between the remaining banking groups (in 1993). As a result of mergers, the three main banking groups in Finland consist of the group of cooperative banks on which we here concentrate, and two commercial banks operating on the national level (i.e., that have a nationwide branch network). Several studies (e.g. Koskenkylä and Vesala, 1994, Nyberg and Vihriälä, 1994, Davis, 1995) describe the events before and during the crisis, so we will offer only a synopsis here. The volume of lending grew very rapidly (at times by over 30% p.a.) in the late 80's, partly due to financial market liberalization that took place in the mid-80's, partly due to an economic boom and lax monetary policy. The boom ended in a collapse of asset values including real estate (a prime source of collateral), and the economy shrank by 8% in 1992-1994. The economy has been growing since then. The government bailout of banks has been estimated to cost 50 billion Finnish markka (FIM).[1] Importantly for us, not a single bank was allowed to fail.

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[1] Note that 1 FIM ≈ 1/6 EUR and that 1 USD varied between 3.56 and 5.83 FIM during our observation period (using monthly exchange rate data).

B. Cooperative Banks: Profit Maximization, and Managerial Rent-seeking?

A special issue relating to our data that needs to be discussed is the ownership form of the banks. One can plausibly argue that a cooperative bank's objective isn't (necessarily) to maximize profits, and most theories assume just that. The danger would then be that we observe a spurious correlation between our dependent variables and measures of fixed investment that is similar to one or the other predicted by theory, but is caused by non-profit maximizing behavior. However, we would argue that conditional on a break-even assumption, our hypotheses hold even if managers are rent-seekers. Additionally, there are several empirical reasons why the assumption of profit maximization seems to be a valid approach here.

Without attempting to model managerial rent-seeking formally, it seems plausible to assume that even a rent-seeking manager has to break even. This argument leaves scope for non-optimal (non-profit maximizing) behavior at the margin: however, our hypotheses (and data) are concerned with average interest rates, and average credit loss levels, and the argument therefore applies. If rent-seeking leads to higher fixed investments ('empire building'), such managers have to cover those by earning a positive price-cost margin. This can happen in two ways: either the manager offers higher quality products for depositors and/or lenders, or she is able to attract lenders of lower than average risk. If she provides higher quality products to depositors only, there is no correlation between our measures of fixed investment and loan interest rates or credit losses. If she offers higher quality products to lenders, she is observationally indistinguishable from a profit maximizing bank that uses fixed investments to improve the quality of its products. Finally, she may be able to attract low-risk customers. One then has to explain how she is able to do this. If all banks identify the customers' type, they face Bertrand competition with homogenous goods, and the rent-seeking manager will not break even. If she is better at identifying low-risk customers than the rivals, and makes fixed investments, she is observationally equivalent to a profit maximizing bank that invests in monitoring. We would argue that if the only factors differentiating a rent-seeking manager's bank from other banks are fixed investments and either higher lending margins, or lower credit losses and lower interest rates, then she is actually using fixed investments to generate one or the other of the two, i.e., behaving in accordance with our hypotheses.

Empirically, only a relatively small portion of these banks' customers are actually members of the cooperative, i.e., owners of the bank.[2] Treating non-member customers as if the bank was profit-maximizing seems a good first approximation. Secondly, these banks seem to behave no differently towards business customers than other banks, other than being more oriented towards small businesses. Finally, to the extent that managerial rent-seeking at bank level is constant through our relatively short observation period, we control for it in our econometric specification by controlling for bank specific unobservables.

One could also claim that cooperative banks differ in other respects from other banks. However, as long as such unobserved differences are not correlated with the fixed investments, *conditional on a bank being a cooperative bank*, this is not a problem. The reason for this is our sample selection strategy: by only including cooperative banks into the sample, we condition out any permanent differences due to organizational form that do not vary between cooperative banks.

A final question relating to the use of cooperative bank data is that they are not necessarily making efficient use of their investments, and that this might create a spurious negative correlation between fixed investments and either interest rates and/or credit losses. We have four responses to this. First, to the extent that cooperative banks are uniformly inefficient, we control for this by only looking at such banks; secondly, if such inefficiencies vary over banks but are time-invariant, we control for them through bank-specific effects. Thirdly, in an unpublished study on the cost-efficiency of Finnish cooperative banks (Linnosmaa, 1993), the results indicate inefficiencies (which were on average 20%) that are close to international estimates using data on *profit-maximizing* banks (e.g. Allen and Anoop, 1997). Fourthly, although Berger et al. (1993) find that X-efficiency of banks is size related, with small firms being less efficient, the banks in our sample are all small banks in Berger et al.'s categorization. Finally, we explicitly control for inefficiency using the standard measure of non-interest expenses to non-interest income.

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[2] In 1998, less than 1/3 (less than 700 000 out of 2.1 million) of all 'active' customers were members, despite strong growth in the 90's (because of active recruiting: the cooperative banks' target is 1 million members by 2002). Some 5% of members are firms or societies (e.g. sports clubs). The one-time membership fee was no less than 500 FIM (circa 100 USD) in 15% of the banks in 1992; currently, it is more than 500 FIM for 40% of the banks. We have been told that there is strong variation between banks. Members have received miscellaneous benefits, the economically most important probably being the possibility buy a 'membership credit insurance policy' to be used as collateral. No clear policies have existed in terms of giving members loans on more beneficial terms.

C. Descriptive Statistics

In Table A.1. (all the tables are at the end of the Appendix) we report the mean, median, standard deviation, minimum and maximum value for each year and variable. All figures are in FIM and in nominal terms.

The mean amount of loans extended was the lowest in 1992, and increased thereafter. The same applies for deposits. All four interest rates (loan, inter-bank loan, deposit, and inter-bank deposit) decrease every year. The mean loan interest rate goes from 12.03% in 1992 to 7.39% in 1996. The interbank market deposit interest rate decreases from 7.43% to 2.49%. The ratio of deposits from customer to total deposits increases over time. In 1992, the mean of this ratio is 82.56%, and peaks in 1996 at 88.26%. Interestingly, and contradicting industry figures, credit losses were at their lowest in 1992; the credit losses of the whole banking industry peaked that year. At their highest (in 1994), the mean credit losses were 1.77% of loans extended. This masks wide bank-level variation however. Each year, some banks report zero credit losses. At the same time, the maximum credit losses vary between 8.65% (in 1996) and 17.05% (in 1993) of loans extended.

During the observation period, banks were changing their branch networks, and adjusting the number of employees. The cooperative banks are generally held to have been the slowest to make such adjustments, and our numbers bear that out. The mean number of branches decreases from 3.6 in 1992 to 2.9 in 1996, but increases first in between. Personnel costs are very stable, with the mean at around 5.5 Million FIM. Unsurprisingly, therefore, personnel costs per branch exhibit an increasing trend.

Checking the year-wise minima and maxima for each bank-level variable revealed no outliers in the sense that the year-to-year changes in these were roughly proportional to the changes in sample first moments. The only extreme value that changes markedly is that of the ratio of non-interest expenses to non-interest revenues: whereas the sample moments are stable, the maximum decreases from 3.09 in 1993 to 1.52 in 1994. Sample second moments of all bank-level variables are remarkably stable over the observation period, especially in light of the changing macroeconomic conditions.

In Table A.2 we present data on the branch networks of different banking groups in Finland. [3] As is clear from the table, the cooperative banks as a group have by far the largest branch network.

D. Conditional Distributions

Hypotheses 1 and 2 propose a relationship between bank level investments, and the average loan interest rate and credit losses respectively. For brevity, we look here only at the distribution of credit losses conditional on the level of investments in local presence and human capital, respectively.[4] For these, we use the measures described in the main text of the paper. For presentational purposes we have pooled all the observations (over banks and over years) and divided them into 12 categories. This pooling allows us to present the distributions using histograms.

In Figures A.1 and A.2 we display the histograms for credit losses as functions of personnel costs per branch and branch density, respectively. For the latter, we present two bars for each branch density category. One bar represents the whole pooled data set whereas the other represents all those observations with more than one branch. The reason for this comparison is that the first branch cannot necessarily be considered as an investment in increasing local presence.

It is hard to detect any relationship between personnel costs per branch and credit losses. Credit losses first rise, then fall, and ultimately again rise as a function of personnel costs. But the story is very different regarding local presence. As can be seen from Figure A.2, there is a clear negative relationship between credit losses and branch density both when we use the whole sample and when we exclude observations with one branch only. Credit losses reach their maximum at the lowest or second lowest branch density category depending on the sample, and decrease thereafter. There is a notable rise at above median branch densities, but towards the right tail of the branch density distribution the credit losses again decrease.

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[3] The second remaining nation-widely operating bank (besides Merita) is excluded from the table. The reason for this is that it is the government owned former postal savings bank. It has clearly the smallest number of own branches, but does provide (some) services through post offices.

[4] The conditional interest rate distributions were essentially flat, i.e., suggested essentially no relationship between fixed investments and loan interest rates. In order to save space, we do not present those histograms here.

Taken together, the data suggests that there is some, but no overwhelming evidence, for our hypothesis 2a (credit losses negatively related to investments) and some evidence against hypothesis 2b.

E. Estimators and Instruments

Based on the standard assumptions on the covariance structure of error components and on the initial conditions, the GMM-DIF estimator one uses the twice and more lagged levels of endogenous explanatory variables as instruments in first-differenced equations. For predetermined variables, the once lagged levels of variables are also valid instruments. The GMM-SYS estimator utilizes the assumption that the differences of the explanatory variables are uncorrelated with the firm-specific effect (and a further initial condition assumption). This allows the use of suitable lagged first differences as instruments for the equations in levels. It has been shown (Blundell and Bond, 1998, 1999) both in Monte Carlo studies and empirically, that especially when the levels are weak instruments for the first differenced variables, considerable efficiency gains and avoidance of finite sample bias can be achieved by adding these extra moment conditions. Such a situation may arise especially when the time series are persistent. This is the case for a number of variables in our data, particularly for $PERS_{it}$, BRA_{it} and $LOAN_{it}$.

In the GMM-DIF estimations of the credit loss and loan interest rate equations, we have i) allowed for the fact that the lagged dependent variable is necessarily correlated with the bank-specific effects and ii) assumed that the levels of any other explanatory variable are potentially correlated with the bank-specific effects. In the credit loss equation, the lagged dependent variable and $LOAN_{it}$ are potentially correlated with v_{Dit}, i.e., endogenous. The other remaining explanatory variables in this equation are assumed to be predetermined w.r.t. v_{Dit}. For the loan interest rate equation, a more conservative approach was adopted; there, all the explanatory variables are treated as endogenous. Based on this classification, the instruments used for GMM-DIF are thus the observations on explanatory variables dated $t-2$ and earlier if the variable is endogenous, and $t-1$ and earlier if it is predetermined.

In the GMM-SYS estimations, we initially assumed that the differences of all explanatory variables in both interest rate and credit loss equations are uncorrelated with the bank-specific effects and specifically, that the deviations of the initial conditions from the (long-run) mean of the process are uncorrelated with the mean itself (Blundell and Bond 1998, 1999). The instruments used in the levels equations are the observations on the differenced explanatory variables dated t–1 (e.g. Δx_{t-1}) if the variable is endogenous and t if it is predetermined.

The first observation of our sample is however special; on the one hand, in 1992 the banking crisis hit its deepest point, and for instance credit losss for the whole Finnish banking sector reached their peak (during that year, 4,8% of loans were written off; see Davis, 1995); on the other, the process of dismantling of the Savings Bank Finland (SBF) took place in 1992 and 1993. Interestingly, the credit losses for our sample were at their lowest in 1992, relative to loans extended (which also were at their minimum). These observations cast doubts on the validity of the initial conditions restrictions, at least for the DEF_{it} and $LOANS_{it}$ variables. Indeed, when we tested for all the additional moment conditions used in the levels equations, a difference-Sargan statistic rejected their validity at 1% level (p-value .0083) in the interest rate equation and yielded a p-value of .105 in the credit loss equation. There are reasons to suspect that $\Delta LOAN_{i,t-1}$ and $\Delta DEF_{i,t-1}$ are the driving forces behind the rejection (and the marginality of validity). As a matter of fact, the validity of the additional moment conditions used in the levels equations is not rejected when both $\Delta LOAN_{i,t-1}$ and $\Delta DEF_{i,t-1}$ are dropped from the instrument set (the p-values for difference-Sargan tests are .211 and .239 in the credit loss and interest rate equations, respectively). We therefore decided to err on the conservative side and excluded them from the instrument set of both equations in the estimations.

F. Robustness tests

In this Section we contemplate the measurement of bank service accessibility/quality and monitoring ability, from the viewpoint of both the monitoring and the market power hypotheses. In addition, we report a set of estimation results demonstrating the robustness of our empirical findings to changes in the definition and functional form of BRA and PERS -variables.

Measuring Service Accessibility and Monitoring Ability: When attempting to draw an empirical distinction between information acquisition and market power motives, we need personnel and branch measures that are simultaneously capable of capturing banking service accessibility/quality and monitoring capability of banks.[5] Otherwise, the testing set-up would favor

[5] Recall also that our empirical identification strategy rests on the homogeneity of conduct of co-operative banks. Therefore, having similar banks that operate in different markets (in time and place) enables us to identify empirically the role of branches and personnel. Identification thus stems from the (optimal) investment being different for each bank and year.

one of the hypotheses over the other. Moreover, we need to incorporate the chosen set of measures simultaneously into the econometric equations, since if there is a role for branches, for example, in banking service accessibility, then one cannot test for the similar role of personnel without having the branch variable in the equations. Such an omission would imply mis-specified regression equations and an improper testing situation. It then follows that the branch variable, however defined, needs to be valid, given that the economic functions of personnel are controlled for in the equation. The same applies vice versa to the personnel variable. A degree of mutual compatibility is therefore imposed on the definitions of *BRA* and *PERS*.

Geographical proximity and the definition of *BRA*-variable: Evanoff (1988) argues that service accessibility and customer convenience are mainly a function of the time, distance and cost required to obtaining banking services.[6] As direct measures for these are not available, a measure of average distance traveled might well serve as a proxy. Time spent and cost incurred should correlate positively with the distance. Then, if it is assumed that banks' branches and customer base (population) are uniformly distributed, the average distance traveled would correlate negatively with the number of branches per unit of area (*BRA*). Accessibility could therefore be measured using *BRA*.

The very same argumentation applies when attempting to capture banks' ability to gather local information. Monitoring requires the acquisition and verification of information and therefore geographical proximity. The shorter the distance between a bank and its borrowers, the more effectively the bank can obtain and authenticate information about the payoff relevant attributes of them. Assuming again a uniform distribution of customers and branches, *BRA* as defined should capture these considerations.

Of course, if either branches or population, or both, are not evenly distributed within the relevant geographical area, *BRA* as the measure of service accessibility and monitoring ability becomes weaker. Evanoff (1988) points out, however, that such distribution problems can be alleviated if one can control for spatially concentrated population, or branching. As the spatial concentration, and other regional features, are likely to be persistent features of the banking market, the bank-specific (market area -specific) effects in our empirical specifications account for

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[6] Evanoff's study is about branch banking and the determinants of banking service accessibility in the U.S. He discusses in detail empirical measurement of service accessibility and reviews briefly the related literature.

these deficiencies.[7] Moreover, a measure of population density is another way to control for the distribution of customers; such a measure is used in the empirical analysis. To sum up, there are several reasons to think that geographical proximity, as measured via *BRA*, is capable of capturing and proxying bank service accessibility and monitoring ability, once the type of region where the bank is active is controlled for.

Additional Robustness Tests (BRA): It is clear that even though we think that we have good reasons to use *BRA* as we have now defined it, a case can be made for other variable definitions. We therefore consider an alternative branch variable, BRA_P, defined as the number of branches per population.[8] We have re-estimated base equations using BRA_P (using 1992-1995 data, as population variable is not available to us for 1996). The tenor of our qualitative results remains unchanged: BRA_P and *PERS* are negative and jointly significant in both *INTL* and *DEF* equations (for more precise the estimation results, please see Table A.3).

Branch-level service / monitoring ability and the definition of *PERS*-variable: *PERS*-variable is defined as personnel expenses divided by the number of branches. The aim of this variable is to capture the role of personnel in either banking service quality or information acquisition, given the definition of *BRA*. It is designed therefore to proxy the quality (and amount) of personnel at the branch-level. Given that banks' geographical proximity is accounted for, it is the organization and function of individual branches that is relevant from the viewpoint of service quality and monitoring ability. A more qualified and trained personnel at the branch level should correlated positively with these, and the current *PERS*-variable is an average measure of them. It obviously reflects also the average size of the personnel per branch. The role of bank-specific

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[7] As the size of area is time-invariant, it is potentially fully controlled by the bank-specific (market area -specific) effects in the regression specifications. Besides the size of the area, *the relative position of each bank in its home market* is controlled for in the estimations to the extent that these features, such as the number of local competitors and their competitive strategies, are time-invariant. The effects of these are to be captured by the bank-specific effect of the empirical specification. As there potentially is a set of other unobservables too that the bank-specific effects in the empirical specifications might reflect, the bank-specific effects are subject to a variety of interpretations.

[8] Notice however that though BRA_P has been used in some studies examining bank service accessibility (see e.g. the references in Evanoff, 1988), it is precisely (the inverse of) the measure that Evanoff has criticized for being an inadequate measure of service accessibility. The criticism stems from the view that urban areas are likely to have a low BRA_P; it is however difficult to argue that in these areas service accessibility is low. That would occur only if congestion becomes an issue. The reverse argument applies to rural areas. Whether BRA_P is a good proxy for monitoring ability is more difficult to evaluate. In any case, it is less proper measure for service accessibility than *BRA* and it is therefore somewhat questionable already at the outset whether it can be used to distinguish between service quality and monitoring hypotheses.

effects in the empirical equations is to account for heterogeneity in, e.g., how many of the personnel are at the headquarters.

Additional Robustness Tests (*PERS*): Activities unrelated lending might increase the level of *PERS* variable. To account for these effects, we included $(PERS)^2$ into the regression equations. They obtained negative but insignificant coefficients in both *INTL* and *DEF* equations (for results see the attached table). The linear *PERS* variable obtained in these estimations negative and significant coefficients; thus our results hold e.g. in the presence of fixed personnel costs.

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Table A.1
Yearly Descriptive Statistics of Bank Variables

year	Mean	Med.	S.d.	Min.	Max.
Deposits, 1000 000 FIM					
1992	241.5775	123.641	384.2059	11.0846	2969.309
1993	258.4518	131.3481	416.6836	12.6948	3244.395
1994	314.6419	159.4877	524.9837	13.6927	4194.973
1995	324.3661	162.7845	535.9779	13.8813	4226.674
1996	328.7691	160.7896	544.3834	14.1277	4285.681
Loans, 1000 000 FIM					
year	Mean	Med.	S.d.	Min.	Max.
1992	242.4031	108.1146	439.4923	6.3583	3296.819
1993	247.7302	111.2777	451.8151	7.0851	3358.258
1994	275.5024	122.9388	515.3931	7.8430	3875.546
1995	264.1695	119.7953	485.1355	7.7068	3734.778
1996	262.5445	119.4842	481.9306	7.2394	3800.051
Deposit interest rate (from customers only)					
year	Mean	Med.	S.d.	Min.	Max.
1992	0.070867	0.0707	0.004618	0.0565	0.0831
1993	0.047007	0.0463	0.004034	0.0365	0.0611
1994	0.028483	0.0284	0.002412	0.0225	0.0364
1995	0.027876	0.0277	0.002588	0.0210	0.0377
1996	0.020888	0.0207	0.001649	0.0178	0.0288
Loan interest rate (to customers only)					
year	Mean	Med.	S.d.	Min.	Max.
1992	0.1203	0.1207	0.005476	0.1011	0.1344
1993	0.0996	0.1004	0.007272	0.0558	0.1164
1994	0.0853	0.0852	0.004791	0.0708	0.1059
1995	0.0874	0.0873	0.004120	0.0742	0.1005
1996	0.0739	0.0736	0.004211	0.0636	0.0990
Inter-bank lending interest rate					
year	Mean	Med.	S.d.	Min.	Max.
1992	0.0818	0.0789	0.025919	0.0297	0.1333
1993	0.0716	0.0721	0.018423	0.0254	0.1163
1994	0.0581	0.0580	0.011537	0.0294	0.0912
1995	0.0573	0.0571	0.011230	0.0319	0.0970
1996	0.0559	0.0561	0.009925	0.0277	0.0885

Table A.1 continued…

Interbank market deposit interest rate					
year	Mean	Med.	S.d.	Min.	Max.
1992	0.0743	0.0732	0.0081	0.0559	0.0967
1993	0.0518	0.0509	0.0064	0.0383	0.0777
1994	0.0329	0.0323	0.0041	0.0240	0.0473
1995	0.0318	0.0313	0.0038	0.0238	0.0446
1996	0.0249	0.0248	0.0025	0.0197	0.0321
Ratio of deposits to total funding					
year	Mean	Med.	S.d.	Min.	Max.
1992	0.8256	0.8392	0.0944	0.5314	0.9625
1993	0.8390	0.8579	0.0932	0.5422	0.9705
1994	0.8574	0.8760	0.0810	0.5912	0.9843
1995	0.8709	0.8874	0.0737	0.6083	0.9847
1996	0.8826	0.8983	0.0674	0.6063	0.9859
Net charge-offs/amount of outstanding loans					
year	Mean	Med.	S.d.	Min.	Max.
1992	0.0076	0.0033	0.0134	0	0.1063
1993	0.0168	0.0089	0.0246	0	0.1706
1994	0.0177	0.0087	0.0248	0	0.1646
1995	0.0170	0.0108	0.0181	0	0.0870
1996	0.0113	0.0060	0.0148	0	0.0865
Number of branches per sq. km.					
year	Mean	Med.	S.d.	Min.	Max.
1992	0.0082	0.0038	0.0155	1.22E-05	0.1148
1993	0.0077	0.0034	0.0156	1.22E-05	0.1148
1994	0.0094	0.0039	0.0191	1.22E-05	0.1543
1995	0.0078	0.0033	0.0156	1.22E-05	0.1108
1996	0.0066	0.0032	0.0120	1.22E-05	0.1047
The amount of personnel expenses in year t divided by the number of branches					
year	Mean	Med.	S.d.	Min.	Max.
1992	2.9745	1.1732	5.3055	0.0309	45.578
1993	2.9476	1.2909	4.9627	0.0301	36.5921
1994	3.2946	1.2699	6.4811	0.0189	46.0681
1995	3.5208	1.3505	7.0704	0.0406	61.01389
1996	3.5731	1.5239	6.9082	0.0421	55.6781

Table A.1 continued.

Ratio of non-interest expenses to non-interest revenues					
year	Mean	Med.	S.d.	Min.	Max.
1992	0.7452	0.6415	0.4473	0.2840	4.1592
1993	0.7751	0.6836	0.3664	0.3508	3.0860
1994	0.7108	0.6699	0.1850	0.3443	1.5211
1995	0.6573	0.6106	0.2039	0.3095	1.5969
1996	0.6747	0.6361	0.1883	0.3293	1.4376
SBFD-dummy taking value of 1 for 1993-1995 if the bank bought a part of the dismantled SBF-bank in 1993					
year	Mean	Med.	S.d.	Min.	Max.
1992	0	0	0	0	0
1993	0.388	0	0.4883	0	1
1994	0.388	0	0.4883	0	1
1995	0.388	0	0.4883	0	1
1996	0.388	0	0.4883	0	1
Number of Branches					
year	Mean	Med.	S.d.	Min.	Max.
1992	3.636	2	5.1147	1	38
1993	3.388	2	5.0972	1	37
1994	4.064	2	6.2892	1	46
1995	3.372	2	5.1921	1	37
1996	2.900	2	3.9375	1	33
Personnel costs, 1000 000 FIM					
year	Mean	Med.	S.d.	Min.	Max.
1992	5.6492	2.6783	9.5244	0.2162	68.8400
1993	5.2941	2.4804	9.0717	0.2109	70.4652
1994	5.9629	2.6868	10.5379	0.1509	80.4398
1995	5.5731	2.5042	9.9618	0.2032	78.8335
1996	5.4511	2.4113	9.7166	0.2107	77.6408

Note: The numbers reported are mean, median, standard deviation, minimum and maximum value. All figures in Finnish markka are in nominal terms.

Table A.2.

Nationwide Branch Networks of Finnish Banks/Banking Groups

Year	Cooperative banks	Merita	Savings banks
1993	977	673	859
1994	993	776	248
1995	960	619	250
1996	893	479	242

Note: The figure of Savings banks in 1993 includes Savings Bank of Finland that was dismantled by the end of 1993. Figures provided by the Finnish Bankers' Association.

Figure A.1.

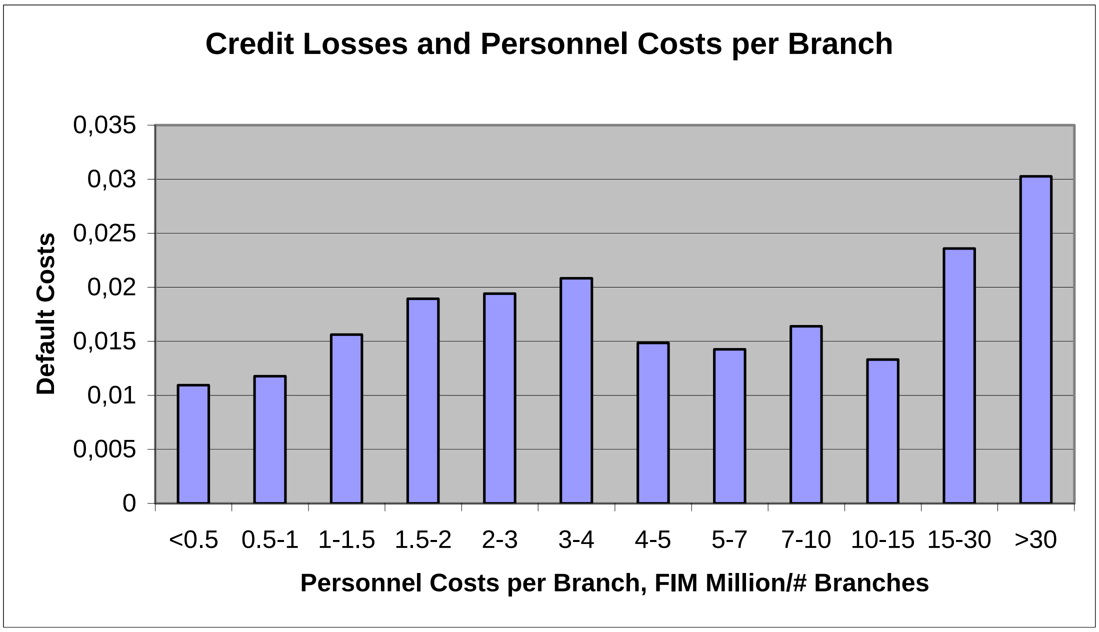

Figure A.2.

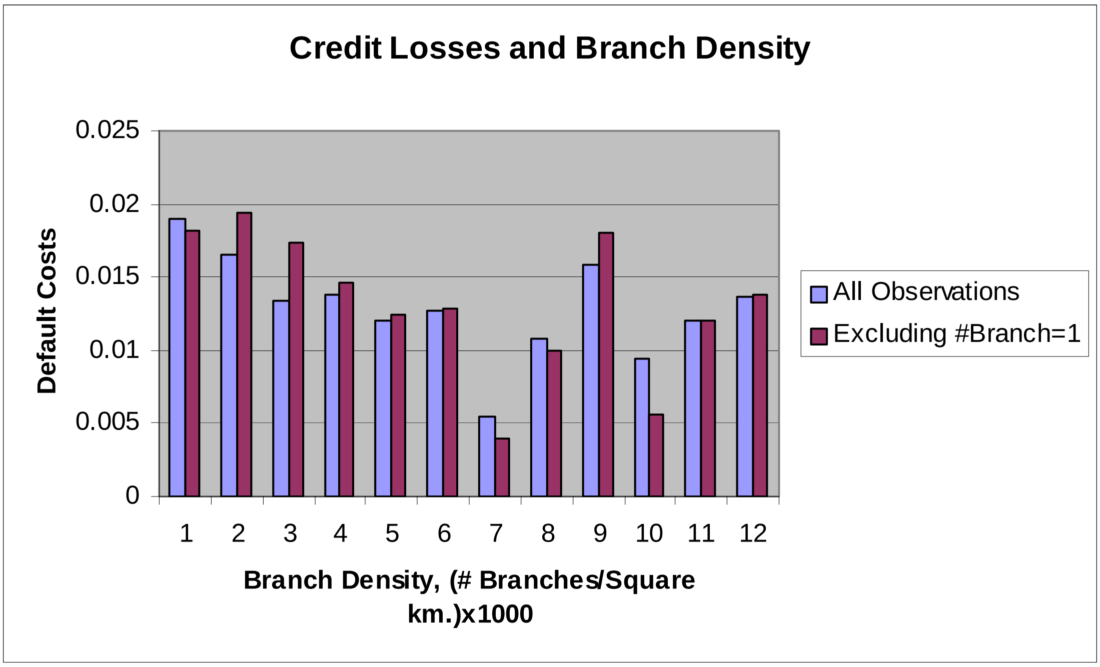

Table A.3

Estimations using BRA_P and Squared *PERS*

Variable	(1a) INTL (GMM-SYS)	Variable	(1b) INTL (GMM-SYS)	Variable	(2a) DEF (GMM–SYS)	Variable	(2b) DEF (GMM–SYS)
$INTL_{t-1}$	.2797	$INTL_{t-1}$	.2543	DEF_{t-1}	.1514	DEF_{t-1}	0.1525
	(.0789)		(.0551)		(.0783)		(0.0595)
LOAN	-.0017	LOAN	.0212	LOAN	2.6229	LOAN	2.6522
	(.0188)		(.0195)		(0.6890)		(0.5329)
DEF	.0052	DEF	.0024	INTL	4.8652	INTL	4.2871
	(.0028)		(.0025)		(2.8393)		(2.7183)
INTD	.2281	INTD	.1086	INEFF	-.9188	INEFF	-0.8624
	(.0713)		(.0274)		(.0775)		(1.1252)
INEFF	-.1255	INEFF	-.0807	BRA_P	-.8548	BRA	-1.1110
	(.0304)		(0.0274)		(.8037)		(.4448)
BRA_P	-.0591	BRA	-.0273	PERS	-2.5749	PERS	-2.0466
	(.0260)		(.0098)		(1.073)		(.5418)
PERS	-.0558	PERS	-.0261	RDEP	-9.2156	RDEP	-6.9254
	(.0297)		(.0148)		(3.9710)		(3.0993)
		$PERS^2$	-.0029			$PERS^2$	-0.1420
			(.0032)				(.1153)
Nobs.	750		1000		750		1000
Sargan	.343		.361		.622		0.117
m1	-5.395		-5.424		-3.861		-5.114
	(.000)		(.000)		(.000)		(.000)
m2	-		.422		-		0.233
			(.673)				(.816)
Wald1	50.312		44.337		77.865		91.681
	(.000)		(.000)		(.000)		(.000)
Wald2	18.691		444.874		13.810		9.874
	(.000)		(.000)		(.001)		(.020)
Wald3	5.250		8.004		8.648		14.552
	(.072)		(.018)		(.013)		(.001)

Notes: see Tables in the main text of the paper.