Is There a Cooperative Bank Difference?

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October , 2014

Road Plan

Paper Rationale & Contribution

The paper compares the performance and characteristics (i.e. specialization) of banks across countries during the period 1998-2010.

The positive nexus between finance and growth that has been observed in recent years, seems to have weakened in the last two decades. One possible explanation is that banks have progressively departed from their traditional lending activity towards purely financial business.

The objective of the paper is twofold:

- To analyze the effect of banks' specialization and other characteristics (such as their amount of traditional banking activities) on their performance in terms of credit provision proxied by the ratio between net loans and total assets;
- To asses the observed differences between cooperative and non-cooperative banks have an influence on the real economy and the value added growth of different industrial sectors.

We contribute to the existing literature presenting an innovative research framework that combines micro and macro level approaches to the study of the characteristics of credit rationing and their impact on economic growth.

Main Results

Our results include:

1. Cooperative bank specialization positively affects bank's performance in terms of credit provision in the overall period as well as in the post financial crisis breakdown;

2. Derivatives have a strong and negative effect on bank's performance during both time spells;

3. In a conditional convergence specification, bank's performance in terms of credit provision is positively correlated with the value added growth of the manufacturing sector

   ⇒ however, this is not the case of specific industrial sectors (i) in high need of external finance, and (ii) self-financing.

The finance-growth nexus

- The role of banks in the financial systems (Bhattacharya and Thakor, 1993; Merton and Bodie, 2005);

- The role of derivatives in the financial systems (Merton and Bodie, 2005; Haiss and Sammer, 2010);

- The positive nexus between finance and growth (King and Levine, 1993; Rousseau and Wachtel, 1998);

- The positive nexus in question (Wachtel and Rousseau, 2007; 2011; Arcand *et al.*, 2012; Easterly, Islam and Stiglitz, 2000).

Characteristics of Cooperative Banks

- Cooperative bank specialization is defined by the *International Cooperative Alliance (ICA)*.

- Characterized by **customer surplus maximization** rather than profit maximization strategies (Canning *et al.*, 2003; Hesse and Cihák, 2007).

- Non negligible role in terms of:
  ⇒ **share of traditional intermediation activity**: 621M people reached, US$3.6T in loans, US$4.4T in savings, US$7.6T in total assets at world level;
  ⇒ **market shares**: cooperative banks in Italy account for about 34% of the deposits and 29% of loans of the banking industry (Bongini and Ferri, 2007), cooperative branch shares account for 60% France, %50 in Austria, about 40% in Germany and the Netherlands with their market share rising from 9 to 15% from mid 1990s to 2004 in terms of total assets in the EU (Hesse and Cihák, 2007).

- Include **large sized** banks (e.g. *Crédit Agricole, Rabobank, Caisse d'Espagne, Banque Populaire, Crédit Mutuel* ranked within the top 50 banks in terms of shareholder equity in 2008)

Although all of the above, cooperative banks are far under-represented in terms of investigation: only 0.1% of *Econlit* entries (Hesse and Cihák, 2007).

The attention to cooperative banks has risen after the beginning of the global financial crisis: **did their specific characteristics provide them with a safer shelter against the crisis, and avoid them to propagate it?**

Characteristics of Cooperative Banks (cont'd)

From a theoretical point of view:

- being smaller in size and with a stronger focus on local business, may produce "arm length relationships" that reduce informational asymmetries and improve the quality of credit (Petersen and Rajan, 1994; Berger and Udell, 1995; Elsas, 2005);
- ...however, local banks might be more at risk of local political capture and higher indulgence towards local business if the relationship between lenders and borrowers is non anonymous and "warmer".

⇒ These two effects may conversely reduce the quality of credit.

From an empirical point of view:

- Altunbas *et al.* (2001) find no evidence of differences in efficiency related to the different forms of bank ownership;
- Hansmann (1996) and Chaddad and Cook (2004) find that mutual financial institutions in the United States tend to adopt less risky strategies than demutualized ones;
- Hesse and Cihák (2007) find that cooperative banks return, profitability and capitalisation are relatively less volatile and relate these characteristics to their ability to use customer surplus as a cushion in weaker periods;
- Brunetti *et al.* (2014) find that during the global financial crisis households using cooperative banks switch to commercial banks 9% less than those using commercial banks and moving to coopervative institutions.

Conceptual Framework

- A main proposition of our paper is that traditional credit activity occurs in a **very competitive environment with tiny profit margins**.

- As a consequence, profit maximizing banks will find **relatively less convenient** than cooperative non profit maximizing companies **to dedicate their activity to traditional intermediation** and will commit a relatively higher share of their total assets to proprietary trading and derivative trading.

- Since the decision to be a cooperative or commercial bank often dates back in the past and may well be considered as exogenous, **differences in intensity of traditional intermediation activity may be reasonably attributed to causal effects generated by the two organizational forms**, and not affected by endogeneity or reverse causality.

- In the final part of our work we also wonder whether the observed differences between cooperative and non cooperative banks have an **influence on the real economy** and, more specifically, on the value added growth of different industrial sectors defined in terms of **high/low technology** or **high/low dependence from external finance**.

Data and Sources

- **Time span:** annual data over the period 1998-2010

- **Geographical coverage:** 32 countries (Europe, Asia, Africa, South-America)

  $\Rightarrow$ unbalanced panel of 140,660 bank-year observations

- **Sources:**

    - **Bankscope**: net loans to total assets ratio, derivatives to total assets ratio, income share from traditional and non traditional activities, Tier 1 capital ratio, impaired loans to gross loans ratio, loan loss reserves to impaired loans ratio, number of employees, cooperative bank specialization;
    - **INDSTAT4**: total value added of the manufacturing sectors, general government final consumption expenditure, gross secondary school enrolment, gross fixed capital formation;
    - Indicators used to classify industries based on their need for external finance as (i) self-financing, (ii) high financially dependent, and (iii) low financially dependent from **Rajan and Zingales (1998)**;
    - Indicators used to classify industries based on their technological intensity as (i) high-tech (including high and medium high-tech sectors), and (ii) low-tech (including low and medium low-tech sectors) from **OECD (2011) classification of ISIC (Revision 3)**.

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Descriptive Statistics

Table 1: **Country breakdown, frequency and percentage for banks**

Country	Freq.	Percent	Country	Freq.	Percent
Austria	5,226	3.72	Japan	13,468	9.57
Belgium	2,236	1.59	Republic of Korea	1,664	1.18
Brazil	3,653	2.6	Luxembourg	2,535	1.8
Canada	1,989	1.41	Malaysia	1,885	1.34
Czech Republic	806	0.57	Mexico	2,132	1.52
Denmark	2,223	1.58	Netherlands	1,989	1.41
Finland	507	0.36	Poland	1,183	0.84
France	10,062	7.15	Portugal	1,001	0.71
Germany	36,270	25.79	Saudi Arabia	273	0.19
Greece	533	0.38	Singapore	1,456	1.04
Hong Kong	2,587	1.84	South Africa	1,404	1
Hungary	884	0.63	Spain	4,108	2.92
India	1,781	1.27	Sweden	2,132	1.52
Indonesia	1,846	1.31	Switzerland	9,386	6.67
Ireland	1,339	0.95	Thailand	988	0.7
Italy	13,884	9.87	United Kingdom	9,230	6.56

The share of cooperative banks in our sample is quite uneven in the 32 countries covered by the Bankscope database.

$\Rightarrow$ The distribution of banks across countries does not play a role in our econometric model since standard errors are clustered at bank/country level.

Descriptive Statistics (cont'd)

Table 2:   **Descriptive statistics for cooperative and commercial banks**

	Cooperative					
	Obs	**Mean**	**Std. Dev.**	**Median**	**Min**	**Max**
NetLoan/TotAss	25,493	58.763	14.304	60.2	0.01	98.02
Deriv/TotAss	3,070	0.003	0.011	0.0005	-0.0005	0.241
ShareTrad	25,418	0.837	0.112	0.823	0	1
ShareNonTrad	25,418	0.006	0.025	0	0	0.584
Tier1Ratio	3,681	16.737	14.328	13.93	0.09	505
ImpLoan/GrossLoan	8,177	8.568	5.620	7.58	0	55.28
LoanRes/ImpLoan	8,133	42.362	49.392	32.14	0	979.39
Size	20,417	318	2,402	113	0	127,402

	Commercial					
	Obs	**Mean**	**Std. Dev.**	**Median**	**Min**	**Max**
NetLoan/TotAss	43,405	53.616	27.890	58.89	-20.75	100
Deriv/TotAss	7,765	0.032	0.083	0.006	-0.003	0.944
ShareTrad	45,686	0.729	0.274	0.815	0	1
ShareNonTrad	45,686	0.064	0.164	0	0	1
Tier1Ratio	11,119	18.615	39.766	11.04	-176.1	962.18
ImpLoan/GrossLoan	13,867	6.080	15.920	3.15	-178.3	814.55
LoanRes/ImpLoan	13,581	92.741	111.316	62.11	-753.7	998.7
Size	29,214	1,734	9,723	179	0	331,458

Descriptive Statistics (cont'd)

**Significance of the difference in means (mean value for comm banks - mean value for coop banks)**

t-stat (p-value)
-27.421
(0.000)
19.439
(0.000)
-60.442
(0.000)
56.043
(0.000)
2.806
(0.005)
-13.643
(0.000)
38.602
(0.000)
20.369
(0.000)

Descriptive evidence for cooperative banks:

- stronger focus on traditional intermediation activity (net loans/total assets ratio of 58.8% compared to 53.6% of non cooperative banks);

- smaller share of derivatives over total assets (0.003 against 0.03) and far smaller in mean than commercial (318 against 1,734 employees)...however, the difference in size is driven by a few large banks since the distance in median is much less pronounced (113 against 179);

- slightly lower Tier 1 ratio than commercial banks (16.7% against 18.6%) and higher share of impaired loans over gross loans (8.6% against 6% for non cooperative banks).

Descriptive Statistics (cont'd)

Figure 1: **Time dynamics of the net loans/total assets ratio for cooperative and commercial banks**
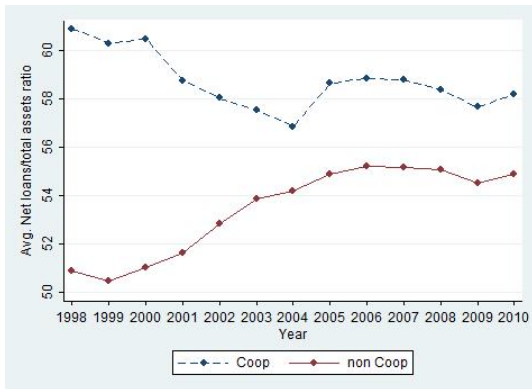
In terms of time dynamics we start with a 10 points difference in 1998 between cooperative and commercial banks and end up with a narrower 3.3 points difference in 2010.

Estimation Strategy

In order to check whether the difference in intensity of traditional intermediation activity is robust when controlling for concurring factors, we estimate the following panel specification:

$$
\begin{aligned}
NetLoan/TotAss_{ijt} = {} & \alpha_0 + \alpha_1 DCoop_{ijt} + \alpha_2 ln(Size)_{ijt} + \alpha_3 ShareTrad_{ijt} + \\
& + \alpha_4 ShareNonTrad_{ijt} + \alpha_5 Deriv/TotAss_{ijt} + \\
& + \sum_j \beta_j DCountry_j + \sum_t \gamma_t DYear_t + \epsilon_{ijt}
\end{aligned}
\tag{1}
$$

where:

→ $NetLoan/TotAss_{ijt}$: net loans to total assets ratio for the i-th bank of the j-th country measured at year t;

→ $DCoop$: takes value 1 if the bank specialization is cooperative, 0 otherwise;

→ $ln(Size)$, $ShareTrad$, $ShareNonTrad$, $Deriv/TotAss$: control variables for bank size, share of income from traditional and non traditional activities, and share of derivatives to total assets respectively;

→ $DCountry$, $DYear$: country and year dummies respectively.

All estimates are **clustered at bank/country level** to take into account that between variance is larger than within variance.

Estimation Strategy (cont'd)

In order to test whether a higher net loans to total assets ratio has a positive impact on growth, we use a conditional convergence model and add to standard conditional convergence factors the net loans to total assets ratio as follows:

$$ln(Y)_{jit} - ln(Y)_{jit-k} = \alpha_0 + \alpha_1 ln(Y)_{jit-k} + \alpha_2 ln(HumanCap)_{ijt-k} + \alpha_3 ln(Inv)_{ijt-k} +$$
$$+ \alpha_4 ln(GovExp)_{ijt-k} + \alpha_5 ln(NetLoan/TotAss)_{ijt-k} + \qquad (2)$$
$$+ \sum_j \beta_j DCountry_j + \sum_t \gamma_t DYear_t + \epsilon_{ijt}$$

where:

→ $ln(Y)_{jit} - ln(Y)_{jit-k}$: two-year rate of growth of average value added of selected industries;

→ $ln(Y)_{jit-k}$: log of initial period value of average value added of industries;

→ $ln(HumanCap))$, $ln(Inv)$, $ln(GovExp)$: standard conditional convergence factors (*i.e.* log of initial level of human capital, physical capital investment, government expenditure);

→ $ln(NetLoan/TotAss)$: log of initial value of net loans to total assets ratio for the *i*-th bank of the *j*-th country;

→ $DCountry$, $DYear$: country and year dummies respectively.

The equation is estimated **separately** and, in a later step, **simultaneously** within a two-equations system which includes the augmented version of (1) using country time averages of time varying variables (Mundlak, 1978).

Banks' performance and cooperative specialization

Table 3: **The determinants of net loans/total assets ratio**

	(1)	(2)	(3)	(1a)	(2a)	(3a)
Dcoop	7.687***	6.361***	7.855***	5.144***	3.878***	8.693***
	(0.684)	(0.634)	(1.413)	(0.783)	(0.733)	(1.481)
ln(Size)	2.091***	2.077***	1.688***	1.426***	1.419***	1.925***
	(0.271)	(0.235)	(0.326)	(0.26)	(0.225)	(0.354)
ShareTrad		13.619***	16.697***		10.695***	14.340***
		(1.255)	(2.125)		(1.363)	(2.509)
ShareNonTrad		-1.322	1.311		-4.130**	1.978
		(1.958)	(2.734)		(1.888)	(3.356)
Deriv/TotAss			-46.744***			-39.661***
			(6.422)			(5.837)
Constant	36.832***	27.343***	27.998***	0.000	31.755***	25.931***
	(2.117)	(2.25)	(5.015)	(0.000)	(2.393)	(3.955)
Country Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Observations	47,988	47,843	6,798	18,647	18,611	4,893
Number of index	7,654	7,631	2,003	5,637	5,623	1,856

*** $p<0.01$, ** $p<0.05$, * $p<0.1$; (Robust Standard Errors)

Banks' performance and cooperative specialization (cont'd)

- Column 1:
    - Cooperative banks have a 7.7 difference in the loans to total asset ratio *vis-a'-vis* non cooperative banks on about 48,000 observations;
    - Log of bank's size has a positive and significant effect on the dependent variable, which is nonlinear and concave;
    - Year dummies show a downward trend in the dependent variable confirming that a disintermediation process is at work, while country dummies highlight that sample countries where the net loans/total assets ratio is above the omitted benchmark (*i.e.* UK) are Switzerland, the Netherlands, Germany, France, Denmark, Hungary, Greece, Portugal, Sweden and Spain.

- Column 2:
    - When adding the share of income from traditional and non traditional activities, the cooperative dummy effect remains significant while its magnitude falls to 6.4;
    - The share of income from traditional activities is highly significant and positive: a 1% higher share of income from loans produces a 0.1% change in the net loans/total assets ratio;
    - Cooperative banks have a higher share of traditional activities, but their positive impact on the dependent variable remains significant net of that factor.

- Column 3:
    - When adding the derivatives/total assets ratio variable we find that its effect is strongly negative and significant: a 1% increase in the derivatives/total assets ratio reduces by 0.5% percent the net loans/total assets ratio;
    - The significance of all other variables remains robust.

Banks' performance and cooperative specialization (cont'd)

- In columns 1a, 2a and 3a we repeat the three specifications limiting our time period to the post financial crisis spell and find that:
    - The cooperative effect remains strongly robust and all other variables keep their sign and significance;
    - In terms of magnitude, the cooperative effect is slightly smaller in the crisis period (5.1 in the first and 3.9 in the second estimate) if we do not include the control for derivatives activity, while it becomes much higher when accounting for this factor (8.7).
    $\rightarrow$ This suggests that the higher intensity of cooperative traditional intermediation activity is not countercyclical, at least if we do not control for derivatives activity.

    What measured in columns 1-3a is a mix of between and within effects.

    $\Rightarrow$ In order to check for the existence of a separate within effect of cooperative banks on the dependent variable we introduce between effects via time average of the time varying regressors in the estimates (Mundlak, 1978).

Banks' performance and cooperative specialization (cont'd)

Table 4: **The determinants of net loans/total assets ratio controlling for Mundlak between effects**

	(1)	(2)	(3)	(1a)	(2a)	(3a)
Dcoop	6.492***	1.937***	2.869**	4.590***	-0.715	3.094**
	(0.646)	(0.545)	(1.287)	(0.771)	(0.647)	(1.320)
ln(Size)	2.788***	2.803***	1.714*	2.326***	2.119***	2.738*
	(0.468)	(0.453)	(0.996)	(0.675)	(0.620)	(1.460)
ShareTrad		8.529***	8.709***		2.283	3.369
		(1.388)	(2.466)		(1.556)	(2.753)
ShareNonTrad		1.932	0.176		-0.684	-0.581
		(2.032)	(2.958)		(1.892)	(3.466)
Deriv/TotAss			-36.175***			-22.849***
			(7.536)			(6.646)
Et[ln(Size)]	-1.610***	-0.979**	0.190	-1.325*	-0.404	-0.709
	(0.495)	(0.474)	(1.015)	(0.706)	(0.643)	(1.471)
Et[ShareTrad]		37.609***	39.818***		46.753***	45.215***
		(2.352)	(4.634)		(2.795)	(4.967)
Et[ShareNonTrad]		-38.534***	0.827		-34.317***	3.748
		(4.550)	(7.197)		(5.011)	(7.693)
Et[Deriv/TotAss]			-25.849*			-39.677***
			(15.458)			(15.186)
Constant	41.574***	9.582***	5.688	40.907***	5.891**	2.092
	(1.833)	(2.417)	(5.918)	(2.098)	(2.928)	(4.912)
Country Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Observations	*47,988*	*47,843*	*6,798*	*18,647*	*18,611*	*4,893*
Number of index	*7,654*	*7,631*	*2,003*	*5,637*	*5,623*	*1,856*

*** $p<0.01$, ** $p<0.05$, * $p<0.1$; (Robust Standard Errors)

Intro   Lit. Review & Framework   Data & Desc. Stats   Estimation Strategy   **Results**   Conclusions
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Banks' performance and cooperative specialization (cont'd)

Controlling for Mundlak between effects we find that:

- All signs and significance are generally robust, and in the same direction of what previously found. This occurs both in the overall sample period (columns 1-3) and in the post crisis subperiod (columns 1a-3a).

- The cooperative effect is high in the first specification, when just controlling for bank size (between 6 and 5 points in the overall and breakdown period, respectively), it falls abruptly when the share of income from traditional and non traditional activity is introduced (about 2% in the overall period, while negative and not significant in the financial crisis), while finally jumps up again when controlling for derivatives activity (2.7 in the overall period, and 3.1 in the post crisis period).

The role of the net loans/assets ratio on value added growth

We analyse the effect of the net loans/total assets ratio variable on the value added growth of countries' manufacturing sector

In addition to that, using OECD (2011) classification of ISIC (Revision 3) manufacturing industries based on R&D intensities, we focus on the impact of net loans/total assets ratio on the value added growth of:

- manufacturing industries with low technological intensity;
- manufacturing industries with high technological intensity;

Finally, following Rajan and Zingales (1998), we define the need for external finance of the manufacturing industries as the difference between investment and cash generated from operations and study the effect of net loans/total assets ratio on the value added growth of:

- manufacturing industries in low need of external finance;
- manufacturing industries in high need of external finance;
- self-financing manufacturing industries.

The role of the net loans/assets ratio on value added growth (cont'd)

Table 5:   **The determinants of value added growth controlling for Mundlak between effects**

	(1) ΔY(TotMan)	(2) ΔY(LowTech)	(3) ΔY(HigTech)	(4) ΔY(LowExtFin)	(5) ΔY(HigExtFin)	(6) ΔY(SelfFin)
ln(Humancap)t-2	0.552***	0.482***	0.702***	0.639***	0.527***	-1.301***
	(0.020)	(0.021)	(0.020)	(0.024)	(0.029)	(0.057)
ln(Inv)t-2	0.314***	0.516***	0.289***	0.410***	0.205***	0.820***
	(0.017)	(0.020)	(0.016)	(0.021)	(0.023)	(0.045)
ln(Govexp)t-2	-1.501***	-1.695***	-1.428***	-1.865***	-2.542***	-2.564***
	(0.026)	(0.027)	(0.026)	(0.031)	(0.036)	(0.072)
ln(NetLoan/TotAss)t-2	0.001***	0.000***	0.001***	0.001***	0.000	-0.000
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Et[(Humancap)]	-0.086***	-0.137***	-0.058***	-0.102***	-0.156***	-0.242***
	(0.002)	(0.002)	(0.001)	(0.002)	(0.003)	(0.005)
Et[(Inv)]	0.101***	0.182***	0.042***	0.126***	0.259***	0.422***
	(0.003)	(0.003)	(0.002)	(0.003)	(0.004)	(0.009)
Et[(Govexp)]	0.252***	0.379***	0.176***	0.296***	0.532***	0.669***
	(0.005)	(0.005)	(0.004)	(0.005)	(0.007)	(0.012)
Et[(NetLoan/TotAss)]	-0.001***	-0.000***	-0.001***	-0.001***	-0.000**	0.000
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
ln(Y(TotMan))t-2	-0.441***					
	(0.008)					
ln(Y(LowTech))t-2		-0.558***				
		(0.008)				
ln(Y(HigTech))t-2			-0.402***			
			(0.007)			
ln(Y(LowExtFin))t-2				-0.481***		
				(0.008)		
ln(Y(HigExtFin))t-2					-0.496***	
					(0.008)	
ln(Y(SelfFin))t-2						-0.947***
						(0.011)
Constant	16.824***	21.868***	14.010***	18.518***	19.929***	41.226***
	(0.323)	(0.315)	(0.311)	(0.312)	(0.371)	(0.529)
Country dummies	Yes	Yes	Yes	Yes	Yes	Yes
Year dummies	Yes	Yes	Yes	Yes	Yes	Yes
Observations	23,365	23,365	23,365	23,365	23,329	23,190
Number of index	8,075	8,075	8,075	8,075	8,069	8,006

*** $p<0.01$, ** $p<0.05$, * $p<0.1$; (Robust Standard Errors)

The role of the net loans/assets ratio on value added growth (cont'd)

Table 6: **The determinants of value added growth controlling for Mundlak between effects - two equations system**

	(1a) NetLoan/ TotAss$_{t-2}$	(2a) NetLoan/ TotAss$_{t-2}$	(3a) NetLoan/ TotAss$_{t-2}$	(4a) NetLoan/ TotAss$_{t-2}$	(5a) NetLoan/ TotAss$_{t-2}$	(6a) NetLoan/ TotAss$_{t-2}$
Dcoop	2.981***	2.981***	2.981***	2.981***	2.986***	2.942***
	-0.368	-0.368	-0.368	-0.368	-0.368	-0.368
ln(Size)t-2	2.172***	2.172***	2.172***	2.172***	2.182***	2.154***
	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1
ShareTradt-2	40.351***	40.354***	40.352***	40.352***	40.406***	40.538***
	-0.936	-0.936	-0.936	-0.936	-0.937	-0.945
ShareNonTradt-2	-23.469***	-23.462***	-23.473***	-23.467***	-23.477***	-23.230***
	-1.824	-1.824	-1.824	-1.824	-1.825	-1.827
Constant	6.916	6.914	6.919	6.915	16.995**	17.058**
	-8.07	-8.07	-8.07	-8.07	-8.007	-8.001
Country Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Observations	15,641	15,641	15,641	15,641	15,635	15,566
R-squared	0.289	0.289	0.289	0.289	0.289	0.287

*** $p<0.01$, ** $p<0.05$, * $p<0.1$; (Robust Standard Errors)

The role of the net loans/assets ratio on value added growth (cont'd)

Table 6 (continued): **The determinants of value added growth controlling for Mundlak between effects - two equations system**

	(1b) ΔY(TotMan)	(2b) ΔY(LowTech)	(3b) ΔY(HigTech)	(4b) ΔY(LowExtFin)	(5b) ΔY(HigExtFin)	(6b) ΔY(SelfFin)
ln(Humancap)t-2	0.499***	0.394***	0.637***	0.661***	0.442***	-2.508***
	(0.019)	(0.020)	(0.020)	(0.025)	(0.036)	(0.072)
ln(Inv)t-2	0.492***	0.618***	0.538***	0.622***	0.425***	1.044***
	(0.020)	(0.022)	(0.020)	(0.027)	(0.035)	(0.068)
ln(Govexp)t-2	-1.659***	-1.751***	-1.678***	-2.122***	-2.759***	-2.490***
	(0.028)	(0.028)	(0.029)	(0.035)	(0.049)	(0.096)
ln(NetLoan/TotAss)t-2	0.001***	0.001***	0.001***	0.001***	0.000	-0.000
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Et[(Humancap)]	0.055***	0.067***	0.042***	0.056***	-0.036***	0.204***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.002)	(0.004)
Et[(Inv)]	0.234***	0.271***	0.174***	0.230***	0.269***	0.652***
	(0.004)	(0.004)	(0.004)	(0.005)	(0.006)	(0.012)
Et[(Govexp)]	0.250***	0.260***	0.278***	0.277***	0.949***	0.416***
	(0.006)	(0.006)	(0.006)	(0.007)	(0.021)	(0.016)
Et[(NetLoan/TotAss)]	-0.001***	-0.001***	-0.001***	-0.001***	-0.000*	0.000
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
ln(Y(TotMan))t-2	-0.543***					
	(0.008)					
ln(Y(LowTech))t-2		-0.622***				
		(0.008)				
ln(Y(HigTech))t-2			-0.506***			
			(0.008)			
ln(Y(LowExtFin))t-2				-0.567***		
				(0.009)		
ln(Y(HigExtFin))t-2					-0.519***	
					(0.010)	
ln(Y(SelfFin))t-2						-0.880***
						(0.014)
Country dummies	Yes	Yes	Yes	Yes	Yes	Yes
Year dummies	Yes	Yes	Yes	Yes	Yes	Yes
Observations	15,641	15,641	15,641	15,641	15,635	15,566
R-squared	0.875	0.852	0.883	0.821	0.741	0.462

*** $p<0.01$, ** $p<0.05$, * $p<0.1$; (Robust Standard Errors)

The role of the net loans/assets ratio on value added growth (cont'd)

- In the **single equation estimate**, loan intensity has a significant and positive within effect on the value added growth of the manufacturing sector as a whole, with the exception of self-financing industries and industries in high need of external finance;

- This last finding is confirmed in the **two-equation system** suggesting that, in the case of industries in high need of external finance, bank financing is not sufficient and other sources become important (e.g. equity financing, corporate bond issues, venture capital).

- Among other controls the two main factors of conditional convergence (*i.e.* physical and human capital) are significant with the expected positive sign, while the initial period level of the dependent variable is negative and significant documenting that the hypothesis of conditional convergence within each group is not rejected.

Intro   Lit. Review & Framework   Data & Desc. Stats   Estimation Strategy   Results   **Conclusions**
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Conclusions

- The nexus between finance and growth is one of the oldest and most explored in the economic literature, however, the recent transformations of the global economy and the occurrence of the global financial crisis seem to have caused an important discontinuity in the empirical evidence on this relationship.

- One of the main problems is that the growing opportunities of purely financial activities and the increasing competition and falling profit margins in the traditional segment of credit, led profit maximizing banks to reduce their exposure in the first field of activity and to increase it in the second.

- This should not be the case for cooperative banks which are much more oriented towards traditional credit if they stick to their multistakeholder principles and statutory rules. Given the above, we try to empirically test whether the widespread opinion that more loans may support real economy growth finds confirmation in the reality.

Conclusions (cont'd)

- Our findings show that cooperative bank specialization displays, as expected, higher loans to total assets ratios than non-cooperative banks throughout the whole analysed period.

- Cooperative banks also have higher share of income from lending activity *vis-a'-vis* services and derivative trading. However, their difference in terms of loan intensity does not increase (actually tightens a bit) during the global financial crisis.

- In addition to that we find that a higher net loans/total assets ratio (which is a characteristic of cooperative banks) is positively correlated with the value added growth of the manufacturing sector with the exception of the two extremes of self-financing industries and industries in high need of external finance.

- From a more general perspective we conclude that "biodiversity" in the financial system is important and must be carefully taken into account by regulators. Different types of banks exist and the specificity of cooperative banks has important distinctive features and helps value added growth of specific sectors of the economy.