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Does Banking System Transparency Enhance Bank Competition? Cross-Country Evidence

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DOES BANKING SYSTEM TRANSPARENCY ENHANCE BANK COMPETITION? CROSS-COUNTRY EVIDENCE[3,4,5]

There seems to be a consensus among regulators and scholars that in order to improve the functioning of a banking system and to stimulate bank competition, it is necessary to raise the level of bank information transparency. However, empirical studies which examine the determinants of competition in the financial sector, the effect of competition on financial stability, or the relationship between transparency and bank stability, leave aside the link between transparency and competition. The aim of this paper is to fill this gap in the literature. To test the hypothesis that greater bank information disclosure is associated with lower market power and lower concentration in the banking system, we use country-level data covering 213 countries. The years under consideration are 1998, 2001, 2005 and 2010, which correspond to the years of the World Bank's Banking Regulation and Supervision Survey rounds. Our findings do not always support the conventional wisdom: countries with higher levels of transparency have lower levels of bank concentration, while the link between transparency and competition is less pronounced. The effect from information disclosure grows – for both concentration and market power – with an increase of bank credit risks.

JEL Classification: F01, G21, G28

Keywords: Banking system, transparency, competition, concentration.

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1. Introduction

Competition plays an important role for the efficient functioning of a market. It fosters innovation activity, leads to lower prices, better product quality and less moral hazard by market participants. Financial markets are not an exception. Moreover, competition in banking systems affects the household and company access to the financial services (Petersen, Rajan, 1994; Boot, Thakor, 2000). Some studies also confirm the positive link between competition and financial stability (Boyd, De Nicolo, 2005; Schaeck et al., 2009; Allen et al., 2011; Schaeck, Cihak, 2013)[6]. Though, other papers show a negative effect from higher competition on the stability of a banking system[7] (Hellmann et al., 2000; OECD, 2010; Berger et al., 2009).

Therefore, competition definitely matters – positively or negatively – for the efficient functioning of a financial market and its regulation has become one of the key objectives of the financial policy (Claessens, 2009).

Regulators often assume that in order to influence the level of competition greater banking system transparency should be put into practice. This is emphasized, for example, by Randall Kroszner (a member of the Board of Governors of the US Federal Reserve System)[8]: "In a nutshell, effective disclosure empowers consumers to choose wisely and enhances competition. … The Federal Reserve is working diligently to best use its authorities to provide both creditors and consumers with rules that strike the right balance between ensuring that consumers receive useful information at an appropriate time and restricting certain practices …." Moreover, the necessity of greater transparency is explicitly assumed as an important factor for improving the competitive environment in a banking sector in the financial regulation strategy in some countries. As follows from the OECD report, such an idea is present in the Australian banking sector regulation approaches: "regulation of all markets for goods and services (*including the financial market – authors' comment*) can be categorized according to three broad purposes: (1) to ensure that markets work efficiently and competitively. Regulation for this purpose includes rules designed to promote adequate disclosure, prevent fraud or other unfair practices and prohibit anti-competitive behaviour such as collusion or monopolization" (OECD, 1998. P. 23).

However, the effect of information disclosure on competition in the banking sector is not unambiguous. According to the theory of industrial organizations (Claessens, 2009) greater transparency can impair competition by revealing some strategic information and, thus, reducing the

[6] A more detailed literature review is presented in (Gomez, Ponce, 2013).
[7] This could happen due to the fact that in competitive environment banks try to increase their earnings taking more risks, which ultimately could destroy the well-functioning of the whole financial system.
[8] Speech by Governor Randall S. Kroszner at the Federal Reserve Bank of Cleveland Community Development Policy Summit, Cleveland, Ohio, June 11, 2008 http://www.federalreserve.gov/newsevents/speech/kroszner20080611a.htm

competitive advantage of the disclosing organization (Darrough, 1993). Furthermore, Leuz and Wysocki (2008) argue that disclosure costs can impede the functioning of smaller institutions as compared to the larger ones due to economies of scale effect. At the same time mandatory disclosure requirements can make it easier for new entrants to operate in the market, which raises the level of competition. This happens when mandatory disclosure reduces the costs of raising capital, which, in turn, can occur because new entrants are able to credibly commit to information disclosure (Ferrell, 2004).

The specificity of the banking sector (at least compared to the non-financial firms) makes the effect of greater transparency even more complicated and ambiguous because of the high degree of information asymmetry associated with the banking business. Some studies show that greater disclosure of information tightens oligopoly (as opposed to monopoly, cf. (Bikker, Spierdijk, 2009)), improves social welfare and increases market discipline on banks (cf. (Boot, Schmeits, 2000), (Hyytinen, Takalo, 2003), (Baumann, Nier, 2003)) while enhancing financial stability (cf. (Nier, 2005)) and decreasing lending corruption (cf. (Barth et al., 2009)). Though, there are some theoretical studies that show the opposite effect from information disclosure. First of all, higher transparency can cause the overreaction to potentially noisy public signals ((Morris, Shin, 2002), (Chen, Hasan, 2005)). Secondly, as Moreno and Takalo (2012) show, there is an optimal level of transparency after which the total welfare (which is the creditors' ex-ante expected payoffs in their model) starts to decrease. Higher transparency may lower the willingness of creditors to roll over their funds (if they get a negative information signal) and, therefore, banks have to compensate this by raising their risk-taking appetite. In (Landier, Thesmar, 2011) it is argued that higher transparency reduces social welfare because complex financial information could be analysed mainly by some advanced agents. Furthermore, as shown in (Chen, Hasan, 2005), an increase in the level of transparency in the banking system can lead to a higher probability of bank runs.

A direct link between mandatory disclosure and banking competition is discussed in a theoretical work (Cordella, Levy Yeyati, 2002). Considering a model of spatial competition (based on the Salop model (Salop, 1979)), the authors demonstrate that mandatory information disclosure to depositors or to a deposit insurance agency forces banks to switch from price competition to asset quality competition. This, in turn, leads to higher profits in the short term and to a greater number of players in the long term. Such a situation can be explained by the fact that risk is a cost in a bank's profit maximization problem. When a bank improves the quality of its assets, the deposit rate (or insurance contributions) is reduced, which in the short term leads to higher expected profits of the bank. In addition, the costs of entry are reduced, since investors do not require compensation for the

risk of misconduct relating to the disclosure. Expected profits, in turn, attract new players, and this results into an increase of the number of participants in the long term.

Despite the fact that information disclosure is one of the key aspects of banking regulation,[9] the empirical analysis of these theoretical conclusions has not been conducted.[10]

The aim of this paper is, therefore, to fill this gap related to the link between bank information disclosure and bank market power and concentration. It should be noted, that we consider *mandatory* disclosure (as opposed to the *voluntary* disclosure) for we are interested in the effect of regulation on bank competition.

The hypothesis we test is that higher transparency is associated with lower concentration and lower market power in the banking system. Thus, we also contribute to the strand of the literature that studies the link between competition and concentration. Moreover, we analyse the link between transparency, competition and concentration, and bank asset quality.

We use the data covering 213 countries from all over the world. The period under consideration includes the years 1998, 2001, 2005 and 2010. The data is taken from the World Bank (WB) databases and the World Bank's Banking Regulation and Supervision Surveys (which limit us to the mentioned years).

Our results confirm the existence of a negative link between concentration and transparency, while the link between market power and transparency is less evident. This result indirectly confirms that concentration does not reflect the level of competition in a market. Furthermore, the effect from information disclosure grows – for both concentration and market power – with an increase of bank credit risks.

The paper is organized as follows. In section 2 we describe our methodology and data. In section 3 the major findings are discussed. A robustness check is presented in section 4. Section 5 concludes.

[9] In particular, The Basel Committee on Banking Supervision emphasizes the importance of bank risk and capital information disclosure (Pillar 3 of Basel II).

[10] Within empirical research there are several studies that examine determinants of competition in the banking system. Claessens and Laeven (2004), for instance, find that competition is affected by bank concentration (positive relationship), activity restrictions (reduce competition) and foreign ownership (increases competition). In (Bikker et al., 2007), in turn, the significant determinants include the real GDP growth rate (negatively affects banking competition), investment climate (expressed by economic freedom indices, better investment climate corresponds to the higher level of competition), banking regulation (expressed by economic freedom regulation index, more extensive regulation leads to the higher level of competition) and the history of the countries' economic systems (in countries with socialist history competition is lower). While Delis (2012) particularly emphasizes the importance of institutional environment as a factor increasing bank competition.

2. Data and Methodology

In order to examine the link between the level of competition and concentration and the level of information disclosure in the banking system, we use the following econometric model:

$$Y_{it} = \beta_i + \gamma_1 Transp_{it} + \gamma_2 Transp_{it} \times Npl_{it} + \gamma_3 Transp_{it} \times Npl_{it}^2 + \alpha z_{it} + \varepsilon_{it}$$

Dependent variables (Y_{it}) include the average banking sector Lerner index as a proxy for the level of *bank competition* in a country and the share of three largest banks' assets in total banking system assets as a proxy for the level of *bank concentration*[11]. We separately estimate the model for each of these banking sector characteristics.

Lerner index is a standard measure of the market power in the banking system (as well as in any other market) (Berger et al., 2008). The idea behind it is to compare prices of output (P_i) and its marginal costs (C_i) of bank *i*. The index is expressed as the following (Lerner, 1934):

$$LernerIndex_i = \frac{P_i - MC_i}{P_i}$$

In application to the banking system, it is calculated following the methodology proposed in (Demirgüç-Kunt, Martínez Pería, 2010) and implemented by the World Bank ((Anzoategui et al., 2010; Anginer et al., 2012) and others). The price is expressed as the ratio of total bank revenues to total bank assets, while marginal costs are calculated by taking the derivative from the translog cost function with respect to the output (which is represented, within this framework, by total bank assets). A higher Lerner index reflects greater market power. This index is calculated separately for each country. Therefore, it takes into account different technologies and other factors in countries (Berger et al., 2008).

In addition to the Lerner index we use the interest margin as a measure for bank market power. A higher loan-deposit spread implies that a bank has better opportunity for profit.

The explanatory variable of the largest interest for us is the proxy for the banking system transparency ($Transp_{it}$), constructed following an approach proposed in (Semenova, 2012).

This *transparency index* is based on survey questions related to bank disclosure and transparency:

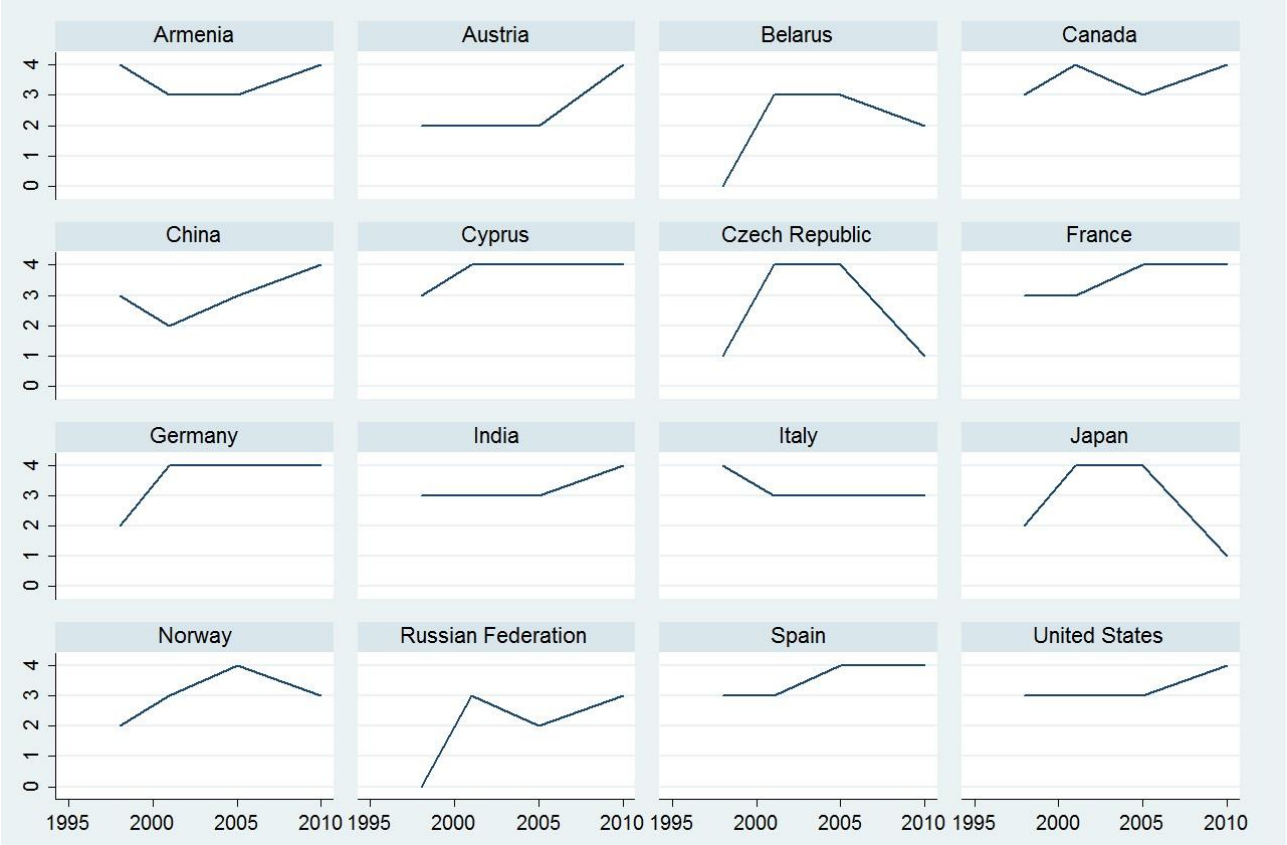
- *Are off-balance sheet items disclosed to the public?*

[11] We use this simple measure of concentration as, according to (Bikker, Haaf, 2002), different concentration indices result in similar rankings of countries. Moreover, rankings of countries based on HHI and the share of the largest 3 banks are the closest (with correlation 0.98).

- *Must banks disclose their risk management procedures to the public?*
- *Are bank directors legally liable if information disclosed is erroneous or misleading?*
- *Is an outside licensed audit obligatory for a bank?*

A positive answer for each question receives 1 point and a negative one receives 0 points. The maximum level of the index is, therefore, equal to 4. Figure 1 shows that over the last decades countries demonstrate certain volatility of the transparency index, meaning that disclosure regulation is not stuck to the same set of requirements over time.

Figure 1. Transparency Index (selected countries)



As we describe in Section 1, the theory predicts a negative relationship between transparency and concentration and a positive link between transparency and competition. We call this *the effect of the market*. Furthermore, we test the hypothesis that bank asset quality affects the relationship between transparency and concentration and market power. As an indicator of the asset quality we use the share of non-performing loans of the total loan portfolio of the banks in a country. Market discipline principles suggest that the effect of additional disclosure requirements depends nonlinearly on the reliability of banks: more transparency strengthens the position of a few

reliable banks, while if the number of banks with low-quality assets is larger more transparency can increase bank concentration and market power. We call this *the effect of market discipline*.

Furthermore, as shown in a theoretical work (Gomez, Ponce, 2013), the relationship between competition and bank asset quality is U-shaped, which confirms the appropriateness of our empiric model.

To capture cross-country macroeconomic and banking system differences we introduce a number of control variables (Z_{it}). First of all, we control for the size of a banking system (using the ratio of total banking system deposits over country's GDP). Secondly some studies (cf. (Claessens, Laeven, 2004), (Bikker et al., 2007)) show that competition can be impeded by high entry barriers. Therefore, we include a proxy for entry restrictions expressed as the share of bank licenses denied in total number of licenses applied for.[12] We also control for activity restrictions implemented by the regulator, using the index of the overall restrictions on banking activities produced by the World Bank. It covers several types of activities, which are not purely banking – like insurance, securities and real estate – and implies 4 degrees of restriction from 1, no restrictions, to 4, prohibition.[13]

We control for the existence of a deposit insurance scheme using the corresponding dummy variable. The deposit insurance system is designed, among other things, to encourage competition in a banking sector. It provides the same guarantees for all banks, which reduces the role of informal guarantees (such as state ownership). In order to consider the impact of such informal safeguards, we include as control variables the ratios of the state-owned bank assets and foreign-owned bank assets over the banking system total assets respectively.

Finally, in the model that describes the relationship between transparency and competition, we include concentration as an explanatory variable following the theory of industrial organizations (Bain 1956; Hannan, 1991). Instruments for the concentration index include macroeconomic indicators – GDP per capita and inflation. The results of the Sargan-Hansen test confirm the appropriateness of these instruments.[14]

The Bank Regulation and Supervision Survey covers only the years 1998, 2001, 2005 and 2010. Therefore, we limit our period to these years. Countries under consideration include 213 developed and developing economies all over the world. The panel is unbalanced.

The descriptive statistics of the variables are presented in Table 1.

Table 1. Descriptive statistics

[12] Data is taken from the WB Bank Regulation and Supervision Survey.
[13] Data is taken from the WB Bank Regulation and Supervision Survey.
[14] P-values are included in the tables with regression estimation results.

Variable	Variable description	Observations	Mean	Std. Dev.	Min	Max
bc3	The share of the largest 3 banks' assets in system total assets, %	525	69.953	20.300	22.700	100.000
ler	Lerner index, %	438	24.788	11.305	2.000	69.000
lds	Interest margin, %	493	8.721	7.388	0.130	58.360
transparency	Transparency index	720	2.689	1.158	0.000	4.000
npl	Non-performing loans to total loans ratio, %	344	8.081	8.678	0.200	74.100
bd	The share of banking system total deposits in GDP	589	47.533	44.403	2.820	333.860
entry	Entry barriers (the share of bank licenses that were denied in the total number of licenses that have been applied for)	274	0.167	0.257	0.000	1.000
ar	Index of overall restrictions on banking activities	580	7.557	2.100	3.000	12.000
gb	The share of state-owned banks' assets in system total assets, %	469	16.657	21.897	0.000	97.100
fb	The share of foreign-owned banks' assets in system total assets, %	462	41.396	33.577	0.000	100.000
dep	Dummy variable for deposit insurance scheme (1 corresponds to the existence of the scheme. o – otherwise)	604	0.535	0.499	0.000	1.000
gdpc	Real GDP per capita	652	10409.120	15626.810	127.740	104820.100
ccp	Average consumer price index, annual percentage change	620	97.304	31.218	0.120	236.770

We estimate the model using the panel data random effect model. The choice among pooled OLS, fixed effect and random effect models is based on a set of appropriate tests (the Hausman test, the Breusch-Pagan test and the test for differing group intercepts).

3. Results

The results of the estimations for both concentration and competition are presented in Table 2. Our findings contradict the common view of policy-makers that greater information disclosure is necessary for better functioning of the financial system in terms of competition. The results support some theoretical illustrations that excess information disclosure could even have an adverse effect on social welfare.

Table 2. Effect of Transparency Index (robust s.e. in brackets)

Variables	Concentration		Market power			
	y=bc3		y=ler		y=lds	
transparency	-3.575*	-0.428	2.088*	3.493***	-0.808	0.021
	(1.973)	(2.391)	(1.217)	(1.266)	(0.886)	(1.381)
transparency*npl		-0.293**		-0.126		-0.141*
		(0.114)		(0.103)		(0.085)
transparency*npl^2		0.007***		0.005		0.002
		(0.002)		(0.003)		(0.002)
bd	-0.019	0.005	-0.020	-0.002	-0.073***	-0.054**
	(0.047)	(0.058)	(0.022)	(0.022)	(0.022)	(0.026)
ent_int	3.959	14.040*	1.953	7.619	-0.852	6.260
	(6.288)	(8.018)	(3.807)	(4.960)	(2.542)	(4.456)
ar	-0.558	-1.144	1.118**	0.619	0.410	-0.973
	(0.636)	(0.739)	(0.517)	(0.496)	(0.345)	(0.616)
gb	-0.024	-0.057	0.021	-0.023	0.009	0.092*
	(0.070)	(0.113)	(0.050)	(0.062)	(0.037)	(0.050)
fb	0.028	-0.025	0.009	0.002	0.001	-0.005
	(0.060)	(0.075)	(0.037)	(0.039)	(0.027)	(0.037)
dep	7.684**	4.305	-2.679	-1.155	1.865	-1.356
	(3.048)	(3.284)	(2.089)	(2.008)	(1.541)	(2.142)
Year=2001	3.836	2.569	-1.667	-2.448	-0.900	2.263
	(3.033)	(3.808)	(2.398)	(2.175)	(1.754)	(2.993)
Year=2005	5.270*	6.337	2.123	3.539	0.154	2.460
	(2.985)	(3.941)	(2.353)	(2.258)	(1.745)	(3.041)
Year=2010	1.290	1.447	5.800***	3.797*	-1.249	0.102
	(3.550)	(4.205)	(2.239)	(2.009)	(1.667)	(2.712)
bc3			0.207	0.036	-0.146	-0.262**
			(0.133)	(0.150)	(0.091)	(0.111)
Constant	78.310***	73.925***	-6.333	3.154	21.497**	34.598***
	(8.176)	(9.833)	(11.312)	(11.961)	(8.406)	(10.842)
N	179	132	149	118	136	95
N, countries	103	78	84	70	85	63
chi2	26.49	31.07	27.69	38.92	25.85	21.48
R-sq (within)	0.121	0.151	0.378	0.469	0.110	0.0160
Sargan-Hansen statistics, P-value			0.0451	0.0100	0.1976	0.5220

*** p<0.01, ** p<0.05, * p<0.1

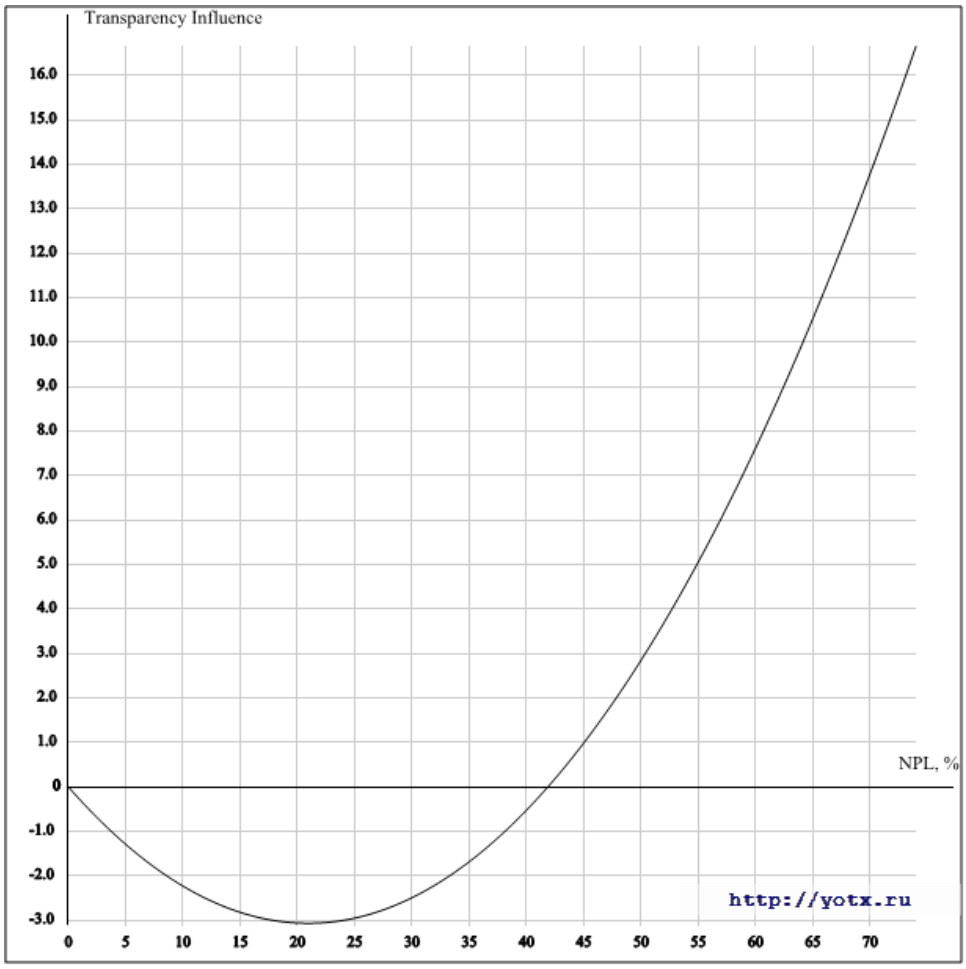
A higher level of banking system transparency is associated with a lower level of bank concentration (*the effect of the market*). Therefore, in countries with more stringent information disclosure requirements, banking sectors are less concentrated. The conclusion with respect to the relationship between transparency and market power, though, is less obvious: the results demonstrate a positive link between transparency and Lerner index and no relationship with the interest margin. The latter, however, indirectly indicates that competition and concentration are different characteristics of the market. The market may be highly concentrated, but at the same time sufficiently competitive under low disclosure requirements.

The effect of market discipline is evident both for bank concentration and competition, measured by the interest margin. The positive link between competition and transparency and the negative link between concentration and transparency weakens with a decrease in bank credit risks,

meaning that stricter disclosure requirements stimulate competition in banking systems with poor credit quality, which is in line with market discipline theory.

The latter is evident for interest margins, but for bank concentration the effect is non-linear and U-shaped. Figure 2 shows that the effect is negative for economies with a share of nonperforming loans lower than 40 per cent, and increases in absolute value for those up to 20 per cent. The latter group accounts for 92 per cent of the sample, so for most banking systems higher credit risks are associated with higher differences in concentration accompanied by differences in transparency. In these economies additional disclosure seems to reduce concentration more.

Figure 2. Disclosure requirement effect and credit risks (for concentration)



Considering the control variables, the significant effects correspond with the predicted ones. Higher concentration and market power are observed in banking systems with higher entry barriers, lower diversification opportunities and lower banking sector size compared to the county's GDP.

4. Alternative measures for transparency

To check the robustness of our results we use alternative measures for banking system transparency, calculated by the World Bank, basing on the Bank Regulation and Supervision Survey. Basically they measure slightly different aspects of banking system transparency.

The first index – *financial statement transparency index* – measures the degree to which the regulator is strict with respect to the number of details the financial statements should include. It is close to our index, but it is less focused on the availability of this information to the general public. It ranges from 0 to 6 and is based on the following questions:

- *Does accrued, though unpaid, interest/principal enter the income statement while the loan is still performing?*
- *Are banks required to prepare consolidated accounts for accounting purposes?*
- *Do banks disclose to the public off-balance sheet items, full audited financial statements, regulatory capital and capital adequacy ratio, transactions with related parties, any other material information, scope of consolidation?*
- *Do banks disclose to the public governance and risk management framework?*
- *Are bank directors legally liable if information disclosed is erroneous or misleading?*
- *Does accrued, though unpaid, interest/principal enter the income statement while the loan is non-performing?*

The second one - *private monitoring index* - is introduced in (Barth et al., 2002), it is also mentioned in the literature, but less directly measuring the disclosure itself. It varies from 0 to 12 and includes the following aspects:

- *The need of an outside licensed audit*
- *Disclosure to the public of off-balance sheet items, audited financial statements, the degree of consolidation, etc.*
- *The percentage of 10 biggest banks rated by international rating agencies (1 if 100%, 0 otherwise)*
- *A requirement to prepare consolidated accounts for accounting purposes*
- *The absence of an explicit deposit insurance scheme*
- *A requirement to include accrued or unpaid interest or principal on nonperforming loans in financial statements and to produce consolidated financial statements.*
- *The possibility to include certain items (like hybrid capital instruments or subordinated debt) into Tier 1or Tier 2 capital*

- *A requirement for bank regulators/supervisors to make public formal enforcement actions, which include cease and desist orders and written agreements between a bank regulatory/supervisory body and a banking organization*

The descriptive statistics of the variables are presented in Table 3.

Table 3. Descriptive statistics of alternative measure of transparency

Variable	Variable description	Observations	Mean	Std. Dev.	Min	Max
fst	Financial statements transparency index	642	4.789	1.052	1.000	6.000
pm	Private monitoring index	528	7.783	1.414	3.330	11.000

The robustness checks (see Table 4) do not provide unambiguous evidence for *the effect of the market*. We observe that transparency was only measured very broadly by the private monitoring index being associated with lower concentration, not competition. That confirms, however, that the reporting requirements, related to more items included in the financial statement, should be accompanied by the public disclosure measures.

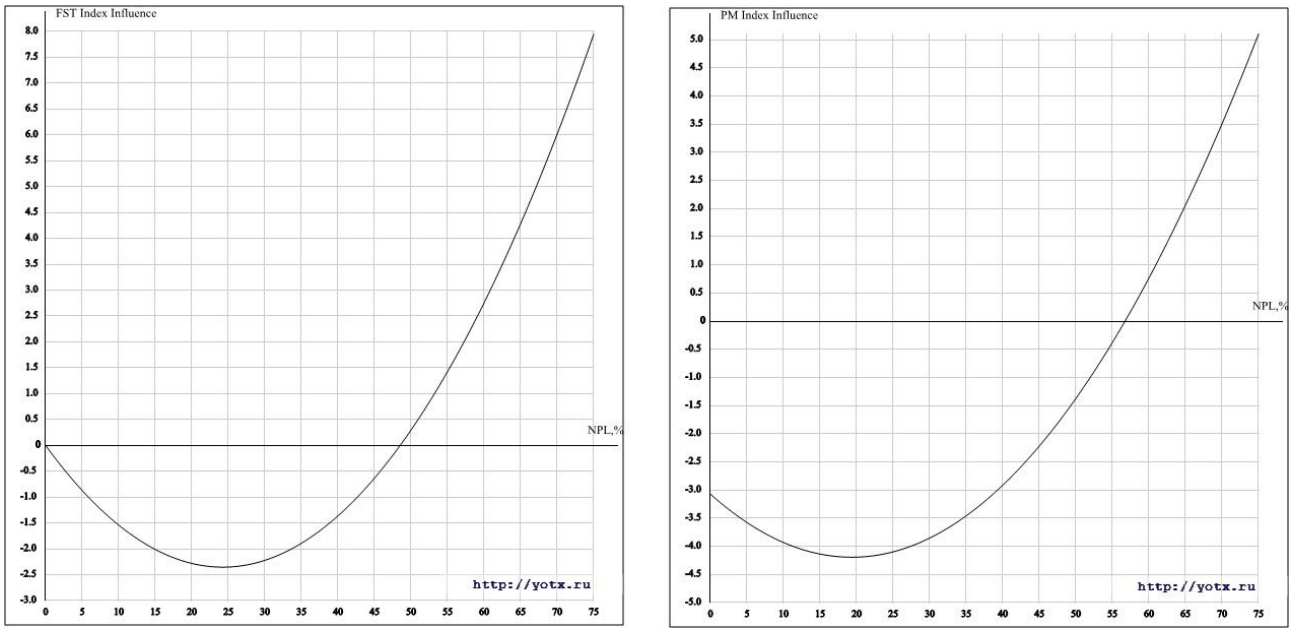
The results confirm the existence of *the market discipline effect* for concentration: in both models the effect of increased transparency slows down with an increase in bank loan quality. Figure 3 shows that for the majority of the countries – for which the share of bad loans in the total bank loans does not exceed 20-25% – higher loan quality is associated with a lower difference in concentration for the countries with different disclosure requirements. Higher transparency is associated with lower concentration in the banking systems with high credit risks. However, the link between bank competition and alternative transparency indices is not detected at all.

Table 4. The effect of private monitoring index, robustness check (robust s.e. in brackets)

Variables	Concentration				Market power							
	y=bc3		y=bc3		y=ler		y=lds		y=ler		y=lds	
fst	-2.811	-2.398			0.834	2.009**	-0.398	-0.294				
	(1.809)	(1.965)			(1.010)	(0.980)	(0.634)	(0.911)				
fst*npl		-0.194**				-0.027		-0.079				
		(0.081)				(0.076)		(0.049)				
fst*npl^2		0.004***				0.001		0.001				
		(0.001)				(0.002)		(0.001)				
pm			-2.858***	-3.071***					0.239	0.682	-0.621	-0.551
			(1.058)	(0.829)					(0.685)	(0.735)	(0.539)	(0.590)
pm*npl				-0.116**						-0.025		0.016
				(0.046)						(0.050)		(0.029)
pm*npl^2				0.003***						0.001		-0.000
				(0.001)						(0.001)		(0.000)
bd	-0.020	0.014	-0.000	0.038	-0.016	0.003	-0.070***	-0.050**	-0.011	0.005	-0.064***	-0.041
	(0.048)	(0.058)	(0.055)	(0.064)	(0.021)	(0.023)	(0.023)	(0.024)	(0.021)	(0.023)	(0.024)	(0.026)
ent_int	4.112	13.578*	4.142	13.650*	1.407	5.139	1.055	6.049	1.130	4.972	0.824	5.508**
	(6.084)	(7.713)	(5.994)	(7.017)	(3.846)	(5.054)	(2.154)	(3.796)	(3.908)	(5.248)	(2.283)	(2.394)
ar	-0.537	-1.166	-0.122	-0.294	1.102**	0.703	0.549*	-0.524	0.977*	0.543	0.602**	0.417
	(0.654)	(0.751)	(0.633)	(0.741)	(0.535)	(0.526)	(0.285)	(0.510)	(0.526)	(0.495)	(0.306)	(0.322)
gb	-0.021	-0.037	0.001	0.025	0.015	-0.013	0.021	0.080*	0.010	-0.031	0.020	0.048
	(0.071)	(0.114)	(0.073)	(0.117)	(0.050)	(0.064)	(0.034)	(0.045)	(0.050)	(0.064)	(0.036)	(0.046)
fb	0.036	-0.028	0.044	-0.029	-0.001	0.000	0.011	0.001	-0.008	-0.006	0.017	0.014
	(0.062)	(0.074)	(0.064)	(0.075)	(0.037)	(0.041)	(0.026)	(0.033)	(0.036)	(0.041)	(0.029)	(0.031)
dep	7.336**	3.887			-2.365	-0.452	1.661	-0.938				
	(3.033)	(3.303)			(2.126)	(2.039)	(1.367)	(1.824)				
Year=2001	3.788	3.578	3.836	4.183	-1.140	-2.811	-1.032	0.814	-0.878	-2.132	-0.865	-1.645
	(3.045)	(3.749)	(2.848)	(3.287)	(2.471)	(2.345)	(1.283)	(2.389)	(2.562)	(2.443)	(1.406)	(1.424)
Year=2005	4.875*	6.789*	3.716	5.621	2.551	3.358	-0.837	1.037	2.988	3.930	-0.817	-1.649
	(2.863)	(3.691)	(2.806)	(3.421)	(2.432)	(2.414)	(1.285)	(2.461)	(2.503)	(2.424)	(1.381)	(1.543)
Year=2010	0.542	2.305	-2.110	0.351	6.670***	4.589**	-1.232	-0.656	7.153***	5.608***	-2.179	-2.689*
	(3.685)	(4.080)	(3.651)	(3.866)	(2.198)	(2.043)	(1.274)	(2.190)	(2.175)	(1.978)	(1.391)	(1.426)
bc3					0.195	0.114	-0.115	-0.211**	0.187	0.087	-0.167	-0.073
					(0.138)	(0.168)	(0.090)	(0.099)	(0.161)	(0.185)	(0.116)	(0.120)
Constant	80.808***	83.892***	88.637***	89.590***	-3.104	-2.596	16.965**	29.505***	-0.686	4.772	23.539**	14.431
	(9.596)	(11.959)	(8.656)	(7.849)	(12.820)	(15.753)	(7.762)	(9.970)	(15.210)	(18.115)	(10.910)	(12.237)
N	179	132	175	132	149	118	136	95	148	118	132	95
N, countries	103	78	101	78	84	70	85	63	84	70	83	63
chi^2	25.25	32.46	17.54	42.21	23.28	31.68	29.82	17.94	20.24	28.28	26.32	34.62
R-sq (within)	0.133	0.227	0.195	0.412	0.364	0.455	0.237	0.102	0.340	0.428	0.203	0.620
Sargan-Hansen, p-value					0.0366	0.0491	0.3551	0.6126	0.0425	0.0620	0.4214	0.0767

*** p<0.01, ** p<0.05, * p<0.1

Figure 3. FST and PM indices effect and credit risks (for concentration)



5. Conclusion

There is an implicit assumption among policy-makers that one of the main impediments to the efficient and stable functioning of the banking system is the lack of sufficient information disclosure by the market participants. Therefore, several policy initiatives have been proposed in order to raise the level of transparency in the market. However, the consequences of such policies are not unambiguous. There are quite a few theoretical studies showing a negative effect of greater transparency on social welfare and on stability in the financial system.

Our results confirm the existence of a link between bank concentration and transparency. The banking sectors are less concentrated in the countries with stricter disclosure requirements. However this effect is economically significant only if the banking sector is characterised by high credit risks, implying that uncovering low bank reliability stimulates even tighter competition in the market.

The relationship between competition and transparency is less obvious. Moreover, our findings contradict the regulator expectations: in countries with higher disclosure standards market power – at least measured by the Lerner index – is higher. Market participants seem to be able to adjust their behaviour to retain market power. However, the more straightforward measure of the market power – the ability of earning profits proxied by the interest margin – is in line with the market discipline theory threatened by the disclosure requirements. In banking systems with poor credit quality stricter requirements are associated with lower interest margins.

Our results suggest that being one of the most important factors for banking system stability, transparency is also a useful tool in stimulating bank competition. The economies where regulators are stricter in terms of bank public disclosure requirements usually have less concentrated banking sectors with lower average market power of individual banks. This is particularly true if the banks are less reliable in terms of credit risks.

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