CONCENRATION AND BANK COMPETITION: THRESHOLDS ANALISYS WHIT DYNAMIC PANEL

ABSTRACT

This study analyzes the relationship between the degree of banking concentration, as measured by the C5 index, and banking competition, measured by the indicators proposed by Lerner, Boone and Panzar&Rosse. A panel of selected OECD and emerging countries is used, with which a dynamic panel model is estimated to determine the existence of a non-linear relationship between concentration and bank competition. Unlike previous studies, which do not find a significant relationship between concentration and competence, this determines a level of concentration (threshold) from which the relationship is significantly negative. This confirms the intuition that an excessive level of banking concentration harms competition, but also that the threshold that separates the regimes of admissible and harmful concentration is quite high.

Keywords: Competition, concentration, banking.

INTRODUCTION

There are different reasons why there may be little competition in a market or industry. The factors that can explain this situation range from the most extreme, in which the average costs are decreasing for all levels of production, which is the case that is known as "natural monopoly", to situations where this advantageous position results from legal barriers that prevent entry. See, Salanie (2000), Tirole (1989) and Posner (1975).

On the other hand, if it is important to favor competition in any sector of the economy where this is possible, it is even more so if it is the banking system, where efficiency losses and increases in borrowing costs can negatively affect investment and growth. economic, as empirically verified by Collender and Shaffer (2002), for the United States, Levine Loayza and Beck (2000) and Jayakumar et al. (2018) for Europe.

Based on the microeconomic theory, it seems reasonable to expect that greater degrees of banking concentration will result in less banking competition. However, in several studies this negative relationship has not been found, Lavy and Micco (2008), Claessens, and Laeven (2004). Therefore, the main motivation of this study is to solve this puzzle, finding that effectively from certain levels of concentration bank competition is weakened and banks exercise market power.

After this introduction, the relevant literature on banking competition and threshold estimation methods for panel data is reviewed, the dynamic panel model to be estimated is presented, the model data, the results of the estimates and the conclusions are presented.

LITERATURE REVIEW

Panzar and Rosse (1987), hereinafter referred to as P-R, develop a methodology to assess the degree of competition in a market. In this methodology, P-R, based on the reduced form of the income equation of a profit-maximizing firm, define the H statistic as the sum of the elasticities of total income with respect to the price of inputs.

The H statistic is probably one of the main contributions to the measurement of competition since the article by Lerner (1934), which gave rise to the Lerner index that measures the competition based on the markup between the production price of banking services and its marginal costs.

The H test is interpreted as follows. H <0 is considered evidence of monopoly; 0 <H <1 supposes monopolistic competition; and H = 1 would imply perfect competition.

Following this theoretical work of P-R, a series of studies have made contributions to the measurement of competence, either applying the methodology proposed by P-R or proposing extensions and improvements to it, and in some cases proposing another indicator of competence.

Claessens and Laeven (2004), estimate the H statistic for banks in 50 countries. Then, based on these estimates, they study their relationship with indicators of banking structure and regulatory regimes in the countries considered. The main findings are that the banking concentration would not affect the degrees of competition of the banks, and that the reduction of entry barriers would favor it.

Shaffer (2008), performs a review of the literature on banking competition and suggests studying other factors that would affect this competition, beyond what is included in the H index. In particular, it highlights the role of other financial institutions to favor banking competition.

Boone (2008), citing several theoretical and empirical works, questions the robustness of the marginal cost price indicator (MCP), such as the Lerner index, to measure competition. Instead, it proposes a measure of competence based on the benefits of the firm. This measure, which is called relative profit difference (RPD), is obtained by defining three levels of efficiency of a company, $n'' > n' > n$, with which the following indicator is calculated: $[\pi(n'') - \pi(n)]/[\pi(n') - \pi(n)]$, where $\pi(n)$ is the benefit of the firm with efficiency level $n \in \mathbb{R}$. Boone argues that this measure has two properties. First, it has robust theoretical foundations as a measure of competence and is monotonous in relation to competition, and, secondly, the data requirements are the same as for estimating MCP.

Levy and Micco (2008), estimate the H index for all commercial banks in Argentina, Brazil, Chile, Colombia, Costa Rica, El Salvador, Mexico and Peru. In their estimation, they control for specific factors of the banks, such as risk, cost and size; for other income, from activities outside the balance sheets, and for macroeconomic factors, such as the reference interest rate and inflation. Subsequently, Levy and Micco, study the link between concentration and foreign participation with bank competition, reaching conclusions similar to those of Claessens and Laeven in the case of banking concentration. Finally, they study the link between competition

and banking stability, concluding that the lower competition resulting from the increase in foreign banking in the region determines more stable banking systems.

Those who also study the relationship between competition and banking stability are Cihak, Schaeck and Wolfe (2009). In a work for 45 countries and 31 banking crises defined as systemic, using models of duration and logit, they do not find support for the theses that propose that competition favors systemic crises

Carbó, et al. (2009), in a study for 14 European economies between 1995 and 2001, compare the results for five indicators of competition: the ratio of net interest margin to total assets; the Lerner index; the ratio of net income to assets (ROA); the H-statistic of P-R; and the Hirschman-Herfindahl index (IHH). The comparison of the indices gives conflicting results between countries, for banks of the same country and over time. Carbó et al. (2009), explain this result by stating that different indicators of competence measure different things. For example, they argue that competition in the traditional banking market, which is reflected in a fall in the net interest margin, may be accompanied by an increase in the Lerner index or ROA, due to the expansion of fee income or due to the effect of technical progress that reduces operating costs. They suggest that the analysis of bank competition at the transversal level (for different countries) will probably be more precise and consistent when specific factors at the country level are considered. In this sense, given their results, they suggest that controlling for these factors is more appropriate, using the net interest margin, the ROA and the Lerner index as competitive indicators.

Bikker, Shaffer and Spierdijk (2012), state that the price function of P-R or the income function of the same authors, escalated by assets, can not be used to infer the degree of competition. The authors prove that only an unscaled income function provides a valid measure of competitive behavior. They claim that their theoretical finding is confirmed by an empirical analysis of competition in the banking industry, based on a sample of more than 100,000 observations on 17,000 banks from 63 countries in the period 1994-2004. Mustafa and Toçi (2017), use the P-R approach to study the degree of competition in Eastern European countries, and endorse the results of Bikker, Shaffer and Spierdijk.

On the other hand, most of the studies that study the relationship of the competition with its determinants assume a linear relationship between the variables. However, it is possible that this relationship is not linear and changes from a certain threshold. A case where it seems quite likely to observe a non-linear relationship is in the influence of the industrial or productive

structure and the degree of competition. In fact, several studies report a negative relationship between banking concentration and competition, a result that could be masking positive behavior up to a certain degree of banking concentration, but negative from a threshold to be determined.

A relevant reference in this type of studies is the work of Kremer et al (2012), who model the relationship between inflation and economic growth assuming non-linearity in this relation, an extension of Hansen's static model (1999) and the generalized method of moments (GMM) that Caner and Hansen (2004) use, in a cross-sectional study, to control for endogeneity in the initial income variable, a habitual regressor in the estimates of economic growth. The contribution of Kramer et al consists in studying this non-linear relationship using a dynamic panel.

More recently, Ruiz (2018) uses this threshold approach in a dynamic panel to study the relationship between financial development and growth, particularly the role of institutional investors.

METHODOLOGY

The methodology consists of estimating dynamic panel models, using as instrumental variables the lags of the explanatory variables to reduce estimation bias due to endogeneity, measurement errors and omissions in the explanatory variables of the model. The equation to estimate would be of the form:

$$IC_{it} = \mu_i + \beta_1 C5_{it} I(C5_{it} \leq \gamma) + \delta_1 I(C5_{it} \leq \gamma) + \beta_2 C5_{it} I(C5_{it} > \gamma) + \emptyset X_{it} + \varepsilon_{it} \quad (1)$$

Where IC_{it} it is an indicator of the country's competition *i* observed at time *t*, $C5_{it}$ it is the ratio of the assets of the 5 main banks within the total assets of country *i* observed at time *t*, *I* is a variable indicator that takes the value of one if the condition in parentheses is met, $X_{it}$is the vector of control variables whose slope coefficients are assumed to be independent of the regime, and ε_{it} it is the stochastic error term of country *i* observed at time *t*.

Based on equation (1), using OLS, we estimate the parameter γ that defines the threshold between the regimes. Then, the sum of residuals *S(γ)*, associated with this parameter, is estimated. This procedure is repeated for *s* samples of the variable *C5* that defines the threshold, and the γ is chosen for which $\gamma = argmin(\gamma)$.

Calculated γ, the coefficients of the regression (1) are calculated by GMM.

DEFINITION OF VARIABLES AND DATA

Following Classens and Laeven (2004), the control variables can be grouped into other variables of structure, contestability, financial industry, institutional and macroeconomic.

Among the variables that measure the structure of the market are the concentration measures, such as the participation of the assets of the first five banks in the total assets (C5), and the participation of foreign banks. On these factors, previous studies have found that bank concentration does not explain competition (Levy and Micco (2007)), or that its effect is counterintuitive (Claessens and Laeven (2004)), that is, higher concentration it would favor competition. In relation to these findings, a central aspect of this study is to postulate the hypothesis that there is a non-linear relationship between concentration and competence, and therefore, it is sought to determine the threshold where regime change occurs. From a positive effect for low levels of concentration, to a negative effect for high levels.

Among the measures of contestability are restrictions on certain types of operations and barriers to entry. In general, it is expected that lower barriers to entry favor competition. The variable used as a proxy for the absence of such barriers is the Financial Freedom Index, developed by the Heritage Foundation, as part of the Economic Freedom Index.

Among the variables of the financial industry will be the capitalization of the stock market, and in general the competition of other financial services industries, such as the stock market itself and the insurance companies.

The variable used to control by the institutional environment will be the Property Rights Index of the Heritage Foundation.

Finally, it is controlled by macroeconomic variables that can affect the measures of competition, such as the dynamics of GDP and inflation.

The frequency of financial data, taken from the Global Financial Development Database, is annual and although this database has data since 1960, the information has been used since 1996. Data are available from the base of the Economic Freedom Index. annual since 2008. For this reason, the period of the estimates for the different indicators varies depending on the range of data available for the indicator and the control variables considered. For example, for the Lerner index, in practically all the countries considered in the sample, data are available from 1996 to 2015. For the Boone index, there are annual data from 1999 to 2015 and, finally, for the H index of Panzar and Rosse is where there is less data, only from 2010 to 2015.

Table 1 presents descriptive statistics of the variables used in the study.

Table 1 Summary of statistics of the variables considered

Variable	Observations	Average	Stand. desv.	Min	Max
Lerner index	2100	0.227	1.030	-44.635	1.076
Boone index	1946	-0.058	0.256	-3.977	2.178
H index	690	0.561	0.241	-0.500	1.378
Concentration (C5)	2089	78.9%	16.1%	23.1%	100%
Foreign bank participation	2166	36.7%	25.4%	0%	100%
Financial freedom index	2366	55.562	18.390	10	90
Market capitalization	2389	49.9%	81.2%	0.01%	1086.1%
Insurance market	2512	1.6%	2.3%	0%	15.8%
Property rights	2366	52.889	23.572	0	95
GDP growth rate	2432	4.0%	4.2%	-24.8%	34.5%
Inflation	4919	35.4%	332.5%	-100.0%	10155.1%

Nota: Min, Max y Desv. est. son el valor mínimo, máximo y desviación estándar de las variables consideradas.

CONCENTRATION AND BANK COMPETITION

In the first stage of the estimation procedure, the value of the gamma, γ, or threshold parameter that separates the two regimes must be defined. As can be seen in Table 1, the C5 concentration index takes values from 23.1% to 100%. Hansen (1999) suggests excluding extreme values in the optimization process, so values of C5 (to separate the regimes) from 30% to 95% are considered. Then, as between these two extremes there are infinite possible values to consider, Hansen himself has suggested evaluating a limited number of values. In this study increases of 0.1 percentage points are made.

In the first row of Table 2 the main result of this first stage is presented. A gamma of 75% is obtained when the Lerner index is used as an indicator of competence. That is, it is estimated that the bank concentration threshold, measured by the C5 Index, which determines a regime change is 75%. In even more precise terms, it is determined that when the assets of the five main banks exceed 75% of the total assets of the system, there is a change in the effect of the concentration on the competition.

The results are presented in the first place using the Lerner Index, since together with the Boone Index are the indicators for which a larger sample size is available for the regression using all the variables, it is the known and simple to interpret.

In the second row of table 2, the estimated confidence interval for gamma is shown using the methodology proposed by Hansen (1999) and Craner and Hansen (2004), who determine this interval using the following expression:

$$LR_1(\gamma) = (S_1(\gamma) - S_1(\hat{\gamma}))/\hat{\sigma}^2 \quad (2)$$

Where $S_1(\hat{\gamma})$ is the sum of squared residuals of the estimate of equation (1) with the optimal Gamma, and $S_1(\gamma)$ is the sum of these squared residuals with alternative Gamma values. The critical values of the distribution of the statistic defined in (2) are calculated using equation (3) proposed by Hansen (1999).[1]

$$c(\alpha) = -2\log(1 - \sqrt{1-\alpha}) \quad (3)$$

As can be seen in Table 2, the 95% confidence interval for gamma is from 73.5% to 77.2%. The following rows of Table 2 show the results of the estimation of equation (1) with the generalized method of moments (GMM) for a dynamic panel.

In the interpretation of these results, it must be borne in mind that the indicator variable is defined so that it takes the value 1 when C5 of a certain country exceeds the Gamma threshold. Thus, considering that an increase in the Lerner Index implies a reduction in competition, a negative value of $\hat{\beta}_1$ is interpreted in terms of banking concentration positively affecting competition in that regime.

In the last column of table 2, which considers all the control variables, the coefficient $\hat{\beta}_1$ associated with concentration levels below the threshold is negative, indicating that low concentration favors competition, whereas $\hat{\beta}_2$ is positive, reflecting that High levels of banking concentration competition deteriorates and the market power of banking increases. The change of sign and the high levels of significance are, in addition, a corroboration of the hypothesis of non-linearity in the effect of concentration on bank competition.

In relation to the control variables related to financial factors, observing the columns where the different dimensions are studied separately, it is first of all that the participation of foreign banks positively affects competition, unlike, for example, the reported result by Levy and Micco (2008). The competition of other actors, reflected by the size of the capital market and the insurance industry, also exerts a positive and significant effect on bank competition. On the

[1] The critical values at 10%, 5%, and 1%, for α, are 6.53, 7.35 and 10.59, respectively.

other hand, the absence of barriers to entry, which is intended to be reflected through the Financial Freedom Index, has a rather favorable effect on market power, which is contrary to intuition.

Table 2

Thresold of bank concentration and competition according to Lerner's index

	Structure	Contestability	Interindustry	Institutions	All
Thresold estimation for gamma	75,0%	75,0%	75,0%	75,0%	75,0%
Confidence interval (95%)	73,5%-77,2%	73,5%-77,2%	73,5%-77,2%	73,5%-77,2%	73,5%-77,2%
$\hat{\beta}_1$	-0.00125**	0.00174***	-0.00119***	0.00196***	-0.00115***
	(0.00056)	(0.00072)	(0.00041)	(0.00075)	(0.00041)
$\hat{\beta}_2$	0.00078**	-0.00095***	-0.00010	-0.00312***	0.00195***
	(0.00042)	(0.00133)	(0.00044)	(0.00130)	(0.00045)
Part. of foreign banks	-0.00032				0.00037
	(0.00032)				(0.00030)
Financial freedom		0.00070**			0.00117***
		(0.00038)			(0.00025)
Stock market size			-0.00042***		0.00002
			(0.00006)		(0.00005)
Insurance market size			-0.00717**		0.01069***
			(0.00369)		(0.00395)
Property rights				-0.00111***	-0.00074**
				(0.00054)	(0.00035)
GDP growth	0.00159***	0.00813***	0.00209***	0.00828***	0.00144***
	(0.00038)	(0.00098)	(0.00037)	(0.00100)	(0.00033)
Inflation	-0.00045**	0.00881***	-0.00025	0.00860***	-0.00051
	(0.00027)	(0.00168)	(0.00047)	(0.00169)	(0.00045)
N° of countries	116	116	116	116	116
N° of observations	1491	1655	1235	1655	1158

Note: *, **, *** denote levels of significance at 10%, 5% and 1%, respectively.

Regarding the institutional factors, reflected in the property rights variable, the effect is favorable and significant to the competition both in the case that is studied independently, and when it appears in the model that considers all the variables.

Finally, of the two variables that reflect the macroeconomic environment, only GDP growth has a significant effect. On the other hand, although the sign of economic growth indicates that this is unfavorable for competition, this is a common result in other studies, and a possible explanation is that in less mature markets and with higher growth rates there are lower degrees of bank competition.

As can be seen in Table 3, the results for the Boone indicator do not differ much from those reported for the Lerner Index, in particular the threshold obtained in the first stage, of 77.1%,

quite close to the 75% obtained for Lerner However, the 95% confidence interval for the gamma parameter is higher, probably as a result of a slightly smaller sample size.

On the other hand, as can also be seen in Table 3, the results for the coefficients associated with the two regimes are consistent with those obtained with the Lerner Index. In the first place, although there is no sign change in the case of the model with all the variables, for the low concentration levels the low significance of $\hat{\beta}_1$indicates that it can not be ruled out that there is no effect of the concentration in the competition. However, for high levels of concentration, the effect on competition is clearly adverse. The above is to some extent ratified in the models for the individual factors, since in all cases there is a change of sign, going from a negative and significant effect, where low concentration favors competition, to a zero or deterioration of the competition at high levels of banking concentration.

Table 3

Thresold of bank concentration and competition according to Boone's index

	Structure	Contestability	Interindustry	Institutions	All
Thresold estimation for gamma	77,1%	77,1%	77,1%	77,1%	77,1%
Confidence interval (95%)	71,0%-82,8%	71,0%-82,8%	71,0%-82,8%	71,0%-82,8%	71,0%-82,8%
$\hat{\beta}_1$	-0.00090***	-0.00149***	-0.00082***	-0.00157***	0.00040
	(0.00031)	(0.00023)	(0.00027)	(0.00218)	(0.0060)
$\hat{\beta}_2$	0.00035*	0.00056	0.00112***	0.00002	0.00091***
	(0.00023)	(0.00195)	(0.00040)	(0.00022)	(0.00037)
Part. of foreign banks	0.00532***				0.00666***
	(0.00041)				(0.00059)
Financial freedom		0.00049***			0.00210***
		(0.00013)			(0.00034)
Stock market size			-0.00046***		-0.00018**
			(0.00013)		(0.00009)
Insurance market size			0.01389***		0.01045***
			(0.00461)		(0.00413)
Property rights				-0.00187***	-0.00073***
				(0.00030)	(0.00024)
GDP growth	-0.00046*	-0.00039***	0.00126***	-0.00066***	0.00221***
	(0.00029)	(0.00022)	(0.00025)	(0.00024)	(0.00034)
Inflation	0.00008	-0.00008	-0.00424	-0.00005	-0.00368***
	(0.00017)	(0.00009)	(0.00030)	(0.00008)	(0.00036)
N° of countries	116	116	116	116	116
N° of observations	1340	1567	1124	1567	1032

Note: *, **, *** denote levels of significance at 10%, 5% and 1%, respectively.

Regarding the control variables, the results are quite consistent with those obtained with the Lerner indicated. There is additional evidence of an adverse and significant effect on the competition of foreign participation and the Economic Freedom Index, and positive in the cases of stock market capitalization and property rights.

Less consistent are the results for macroeconomic factors, although there is no a priori expectation for these control variables.

As for the estimates with the H index of Panzar and Rosse, unfortunately it is the indicator with the least data available in the Global Financial Development database of the World Bank, since in the temporal dimension there are annual data for only 6 years, from 2010 to 2015 Due to the lower degrees of freedom, these are results that must be analyzed with the utmost caution, but are presented in Annex 2. Additionally, it is important to remember that the reading of this index is different than in the previous cases, since values Negative of it are interpreted as the presence of monopoly; values between zero and one evidence of monopolistic competition; and equal to one as evidence of perfect competence.

However, the significance of the results with this index is low in most cases, and the data are only presented by the relevance of studies with this indicator, and to motivate new estimates at least by increasing the transversal dimension.

CONCLUSIONS

This paper studies the relationship between concentration and bank competition, identifying a regime change at banking concentration levels, measured by the C5 Index, above 75%. This result differs from previous studies, which do not find a significant relationship between the variables of interest, because they assume a linear relationship between them, a restriction that is eliminated in the present study.

The result is robust to changes in two of the three indicators of competition used, and in which it is not, the Panzar and Roose Index is most likely due to the size of the sample available for that index.

The finding of the present study confirms the theoretical hypothesis that at high levels of concentration there would be an adverse effect on competition. However, it is also found that the threshold from which this negative effect occurs is high, which serves as a reference for public policies related to industrial organization.

Finally, it is proposed as a research agenda to apply the methodology used in this study to other indicators of competition such as the net interest margin and the return on assets (ROA), and to redefine some control variables, particularly the one that tries to reflect the barriers entry to the banking market.

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ANNEX 1

Countries included in the panel

1 Algeria	40 Georgia	79 Norway
2 Angola	41 Germany	80 Oman
3 Argentina	42 Ghana	81 Pakistan
4 Armenia	43 Greece	82 Pama
5 Australia	44 Guatemala	83 Paraguay
6 Austria	45 Honduras	84 Peru
7 Azerbaijan	46 Hong Kong SAR, Chi	85 Philippines
8 Bahamas, The	47 Hungary	86 Poland
9 Bahrain	48 India	87 Portugal
10 Bangladesh	49 Indonesia	88 Qatar
11 Belarus	50 Ireland	89 Romania
12 Belgium	51 Israel	90 Russian Federation
13 Bolivia	52 Italy	91 Rwanda
14 Bosnia and Herzegovi	53 Jamaica	92 Saudi Arabia
15 Botswa	54 Japan	93 Senegal
16 Brazil	55 Jordan	94 Sierra Leone
17 Bulgaria	56 Kazakhstan	95 Singapore
18 Burki Faso	57 Kenya	96 Slovak Republic
19 Cambodia	58 Korea, Rep.	97 Slovenia
20 Cameroon	59 Kuwait	98 South Africa
21 Canada	60 Latvia	99 Spain
22 Chile	61 Lebanon	100 Sweden
23 China	62 Lithuania	101 Switzerland
24 Colombia	63 Luxembourg	102 Tanzania
25 Congo, Dem. Rep.	64 Macedonia, FYR	103 Thailand
26 Costa Rica	65 Malawi	104 Trinidad and Tobag
27 Croatia	66 Malaysia	105 Tunisia
28 Cyprus	67 Mali	106 Turkey
29 Czech Republic	68 Mauritania	107 Uganda
30 Côte d'Ivoire	69 Mauritius	108 Ukraine
31 Denmark	70 Mexico	109 United Arab Emirat
32 Dominican Republic	71 Moldova	110 United Kingdom
33 Ecuador	72 Morocco	111 United States
34 Egypt, Arab Rep.	73 Mozambique	112 Uruguay
35 El Salvador	74 mibia	113 Uzbekistan
36 Estonia	75 Nepal	114 Venezuela, RB
37 Ethiopia	76 Netherlands	115 Vietnam
38 Finland	77 New Zealand	116 Zambia
39 France	78 Nigeria	

ANNEX 2

Thresold of bank concentration and competition according to Boone's index

	Structure	Contestability	Interindustry	Institutions	All
Thresold estimation for gamma	71,8%	71,8%	71,8%	71,8%	71,8%
Confidence interval (95%)	69,0%-88,0%	69,0%-88,0%	69,0%-88,0%	69,0%-88,0%	69,0%-88,0%
$\hat{\beta}_1$	-0.00033	0.00100**	0.00029	0.00095**	-0.00062
	(0.00075)	(0.00051)	(0.00041)	(0.00050)	(0.00115)
$\hat{\beta}_2$	0.00133	-0.00051	-0.00007	-0.00043	-0.00094
	(0.00116)	(0.00059)	(0.00044)	(0.00057)	(0.00094)
Part. of foreign banks	0.00031				-0.00219
	(0.00117)				(0.00162)
Financial freedom		-0.00075			-0.00211
		(0.00092)			(0.00455)
Stock market size			0.00234***		-0.00036
			(0.00094)		(0.00117)
Insurance market size			-0.00436		-0.02964***
			(0.01115)		(0.01140)
Property rights				-0.00073	0.00371
				(0.00115)	(0.00416)
GDP growth	0.00129	0.00006	-0.00043	-0.00000	0.00357**
	(0.00150)	(0.00080)	(0.00140)	(0.00077)	(0.00206)
Inflation	0.00241	0.00043	-0.00104	0.00058	-0.00571**
	(0.00163)	(0.00059)	(0.00153)	(0.00058)	(0.00269)
N° of countries	116	116	116	116	116
N° of observations	222	443	235	443	143

Note: *, **, *** denote levels of significance at 10%, 5% and 1%, respectively.