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Banking Sector Resilience and the Global Financial Crisis: Mexico in Cross-National Perspective

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Abstract

Generally the global financial crisis had relatively limited impact on Latin American financial systems. The effect of the crisis on the real economy in Latin America traveled through trade rather than finance. This paper examines explanations for the comparatively modest impact of the global crisis on the Mexican financial system. It explores two different hypotheses. One is that the Mexican financial system did not suffer contagion because it was not very sophisticated or globally integrated. The other hypothesis is that the history of financial crisis encouraged effective regulations that mitigated the global charge toward market-based banking in the Mexico case and explains why the financial system was relatively unscathed by the crisis.

Resumen

Generalmente la crisis global financiera ha tendido relativamente un impacto limitado en los sistemas financieros en Latinoamérica. Este documento examina las explicaciones del comparativamente modesto impacto de la crisis global financiera en el sistema financiero mexicano. Una de ella es que el sistema financiero mexicano no sufrió de contagio porque este no era muy sofisticado ni tampoco lo global y suficientemente integrado. La otra hipótesis es que la historia de la crisis financiera fomentó regulaciones efectivas que mitigaron la carga global hacia el sector bancario basado en el mercado en el caso de México y explica porqué el sistema financiero fue relativamente indemne.

Introduction

"[Mexican financial regulations] proved to be more than adequate to face the serious turmoil in international financial markets in 2008-2009 without any significant consequences. Most of the criteria to ensure that the banking system properly functions are already in place and running in Mexico."

-Nicole Riche de Polognac, President & CEO, Grupo Financiero Scotiabank[1]

A common view of Mexico's financial system and the impact of the global financial crisis beginning in 2007 is that good regulation helped shield Mexico from the kind of turmoil experienced in other countries around the world. The contention is that prior banking crises motivated regulatory reforms, in turn preventing Mexican financial institutions from engaging in risky activities to the extent that caused such high vulnerability elsewhere. This view of Mexico's experience of the financial crisis puts it in the company of countries, such as Thailand (Nidhiprabha, 2011) and other Asian nations including Japan (Figueira *et al.*, 2010), that suffered banking crises and subsequent banking reform in the decades prior to the global financial meltdown but exhibited resilience during and after the 2007-2008 crisis. Scholars cite "good regulation" as an explanation for banking sector resilience in other country cases such as India (Ranganath and Rao, 2010), Egypt (Abdel-Baki, 2011) and Islamic countries generally (Hasan and Dridi, 2011).

A burgeoning literature on cross-national incidence of the global financial crisis explores explanations for the pattern of variation in the impact of the crisis across different countries. This research includes important differences in the definition of impact. Ultimately most scholars are interested in impact on the real economy or, the "output" impact (Berkman *et al.*, 2009). But the contingencies/ intermediating variables/causal models researchers specify vary considerably. For example, Berkman *et al.*, (2009), test the relative importance of the trade versus the financial channels of impact. They find that, for developing countries, the nature of trade and dominant export categories explains impact variation although, in an emerging market subset of developing countries, "finance trumps trade" in explaining cross-national variation. For a larger set of countries, not just developing countries, several researchers (Lane and Milesi-Ferretti, 2010; Claessens *et al.*, 2010) find evidence that both pre-crisis domestic financial sector circumstances and condition of the trade account explain variation in crisis impact. These are broadly the same two sets of variables uncovered by scholars examining the

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[1] http://www.gfmag.com/archives/136-march-2011/11104-mexicos-uphill-struggle.html#ixzz1nPk9bT00.   Retrieved February 26, 2012.

pattern of developing country financial crises in the second half of the 20th century.

Scholars are still trying to unpack the relative weight and interaction of the domestic financial circumstances, specifically pre-crisis leverage/credit growth (Rose and Spiegel, 2012; Giannone *et al.,* 2010), international financial vulnerabilities including the flexibility of exchange rate regime and/or international reserves (Frankel and Saravelos, 2010; Blanchard *et al.,* 2010; Obstfeld and Rogoff, 2009) and trade patterns. Comparative work on banking and financial crises (Reinhart and Rogoff, 2010) suggests that banking sector resilience may be an important intermediating variable in the complex explanation for cross-national variation in the magnitude and duration of the 2007-2008 crisis' impact. One result is that as long as local banking systems remained relatively stable, the trade shock had delayed but relatively short-term impact (Blanchard *et al.,* 2010).

As a particular aspect of the crisis impact story, banking sector resilience itself can be defined in different ways. Consider the relatively nuanced assessment of the Financial Stability Board *Country Review of Mexico: Peer Report* from 2010 that the Mexican financial system "did experience a material worsening in asset quality and some pressures on bank funding and market liquidity, but these pressures were overall manageable with comparatively modest public support." Financial economics literature on what the 2007-2008 financial crisis revealed about the nature and role of national financial systems focuses mostly on leverage and risk profiles (Ivashina and Scharfstein, 2010). But recent political economy literature on the crisis impact suggests the importance of evaluating cross-national variation in the extent to which bank business, as expected in the traditional depiction of credit-based financial systems (Zysman, 1983), hinges on intermediating between savers and private sector borrowers or, rather, involves shifting resources within the financial sector itself (Hardie and Howarth, 2009).

Following recent scholarship in the political economy of finance we see two different conceptualizations of impact on banking sector resilience. The first is the impact of the crisis on bank credit provision to non-financial entities and the second is the impact on bank profitability. It is conceivable that the impact of the crisis would vary across national financial systems depending on the extent to which, prior to the crisis, banks were providing credit to non-financial sector entities, either because the banking system had shifted away from the traditional model, or because the banking system had never attained the robust intermediation role indicative of the traditional model. The crisis could have undermined bank profitability even when it had relatively little impact on the extent of bank credit provision to non-financial entities.

Different definitions of banking sector resilience in existing reports including the extent of headline government support for banks and changes in

credit provision may partly explain why scholarship exploring the consequences of cross-national variation in financial sector regulatory institutions and supervisory policies finds relatively little evidence to support the contention, implicit in commentary on the Mexican case, that good or bad regulation is responsible for more or less severe impact of the crisis. Contrasting results in quantitative studies are cause for skepticism about any generic specification of causal factors and early warning indicators. In the specific case of regulation, the few extant studies find that the tighter regulation (Giannone *et al.,* 2010) or the better the 'quality' of public sector governance (Masciandaro *et al.,* 2011), the worse the impact of the financial crisis. Other research, focusing particularly on the impact of financial regulations that impose 'restriction' and incent 'private monitoring' yield contradictory results for the impact of these aspects of regulation on bank stability (Caprio *et al.,* 2007, 2010). Several studies find that financial deepening is an attribute of the financial system that accentuated crisis impact (Claessens *et al.,* 2010; Giannone *et al.,* 2010; Lane and Milesi-Ferretti, 2010) while other elements of banking business prior to the crisis, such as the extent of wholesale funding or foreign bank exposure, do not clearly predict the extent of financial stress countries experienced as a consequence of the crisis (Claessens *et al.,* 2010).

Contradictory evidence in the existing scholarship on the impact of the global financial crisis on banking sector resilience motivates our interest in understanding the interaction of financial regulation, banking sector development and in the impact of the crisis on banking sector resilience. Our research was originally motivated by the commonly-held view of the Mexican banks experience of the financial crisis represented in the opening quote and questions about how to define banking sector resilience and the extent to which "good regulation" or "progressive banking" would account for the relatively fair skies over Mexico's banking system as the 2007-2008 global financial crisis evolved. Yet assessing impact and its causes requires understanding the full extent of global variation. Using headline government support, for example, we can identify Mexico as one of only five in the group of 34 OECD countries where, in the aftermath of the crisis, the government provided banks no special guarantees (OECD, 2010). To better frame our investigation of the Mexican case, we identified the task of creating credible measures and reviewing the cross-national variation in as large a set of countries as possible. This is an important preliminary exercise in pursuing research evaluating different possible explanations for the impact of the global financial crisis on the Mexican banking sector.

The paper is organized as follows. Section two reviews empirical results of our exercise to measure the extent of good regulation and good banking in different countries around the globe prior to the 2007-2008 crisis and refines our research questions. Section three adds to our description of how we

conceptualize and measure good regulation and good banking an explanation of how we measure banking sector resilience. It also describes the models we estimate to evaluate the impact of regulation quality and financial deepening on the extent to which the crisis affected the banking system. Section four presents the empirical results and outlines follow-on research.

1. Impact of the Global Financial Crisis on Banking System Resilience Good Regulation and Progressive Banking

1.1. Empirical Evidence of Cross-National Variation

We have constructed indices (described in detail below) to measure good regulation and progressive banking. If we combine the two indices in one graph, it is possible to identify four ideal-types of good regulation and progressive banking and distribute the 129 countries of our sample along this typology. Moreover, we can easily visualize where Mexico falls in comparison to other countries (see the red square in Figure 1). Although Mexico presents somewhat good regulation, it is weakly placed along the good banking dimension.

The distribution of countries across these four quadrants helps highlight questions underpinning our investigation. Can we observe significant differences in the impact of the crisis across the ideal-types represented by the four quadrants? Did good regulation mitigate such an impact? Did progressive banking play a role in determining the extent of the crisis in these different countries? Most countries fall (see Table 1) within the bad banking/bad regulation quadrant, followed by the good banking/good regulation and the good banking/bad regulation ideal-types suggesting that banking development and good regulation co-vary to some extent. Still there are a significant number of countries in the bank banking/good regulation and good banking/bad regulation quadrants. The quadrant with the fewest countries is bad banking/good regulation, yet it includes not only Mexico but two other important countries in Latin America: Brazil and Argentina. What is the interaction of good regulation and bad banking or vice-versa? 14 of the 16 countries in this category had systemic crises in the fifteen years prior to the crisis. Does the history of bank crisis shape the interaction of banking and regulatory quality? The quantitative exercises described in section three form a preliminary step in attempting to answer these questions. First, we describe how we derived the indices and measurements of good banking and good regulation, which yield the distribution evident in Figure 1 and Table 1.

1.2. Concept and Measurement of "Good" Regulation

In our survey of the literature on lessons for good regulation in light of the financial crisis we identify six clusters of recommendations covering improved mechanisms: to recognize need for and enforce prompt corrective action; require countercyclical dynamic provisioning of capital; limit opportunities for regulatory arbitrage by extending authority to off-balance sheet operations and new products; provide for alignment and coordination of macro-prudential supervision with micro-level supervision; adopt a gross leverage ratio as a capital adequacy backstop; and revise provisions for actors such as third-party verifiers or bank Boards with responsibility for assessing information critical to risk assessment.

Dynamic Provisioning. One of the most widely endorsed lessons for future financial supervision and regulation is to impose upon banks some form of countercyclical loan- loss (capital) provisioning (Goodhart, 2008; Blundell-Wignall and Atkinson, 2010; FSA, 2009; IMF, 2009). Also known as dynamic provisioning, the motive with this recommendation is to counter the inherent pro-cyclicality of credit activity. Banks are more likely to mistakes, lend to weaker borrowers, when the macro-economy is expanding. The way this works in the most prominent contemporary case of Spain is that the central bank provides a formula for calculating latent loan-loss, subject to a maximum, against which banks must provision (Saurina, 2009). In the pre-crisis era, Spain was virtually alone globally in its use of dynamic provisioning although adoption is rising post-crisis (Fernandez de Lis and Garcia Herrero, 2010).

Insolvency Discipline/Exit. A second area of consideration about financial regulation in the aftermath of the crisis is the need to improve rules and effective implementation for bank insolvency. One mechanism, prompt corrective action (PCA) (Goodhart, 2008; FSA, 2009) rules have been in place in many countries including the US where they were introduced in 1991. PCA rules usually identify levels of capital adequacy and require banks to increase provisioning against loan-losses as they fall down into lower categories. In light of the crisis experts recommend strengthening PCA and going beyond it; one headline recommendation is to force banks to adopt living wills that spell out the trigger and process for bank closure under insolvency.

Macro-Prudential (Systemic) Oversight. Aligning macro-prudential oversight with micro-level institution-by-institution supervision is another element of good regulation in the recipe emerging from post-crisis evaluation (FSA, 2009; IMF, 2009). System-wide bank stress tests are an innovative mechanism partially designed to help integrate macro and micro perspectives on financial stability (Hirtle *et al.,* 2009). The formation of the European Systemic Risk Board (ESRB) is an example of this new approach. Although the (legal) power to enforce and to amend regulation remains with the individual nation state within the EU, the ability of the ESRB to issue warnings and to propose

regulatory changes, and to require the relevant national authorities to comply with such proposals or to explain why not.

Information Disclosure and Information Quality. A prominent feature of the Turner Report on financial reform (FSA, 2009) is to require, in addition to dynamic capital provisioning, a gross leverage ratio as a backstop measure. This is recommended because in the aftermath of the crisis experts recognize the herculean information requirements assumed for effective risk-weighting of capital adequacy and dynamic provisioning. Risk-weighting, the mode adopted by the Basle Committee, requires approving and monitoring empirical validity of mathematical models used to evaluate risk. Another category of reform proposals calls for increasing the legal responsibility of market actors to evaluate sufficiency and quality of information necessary for accurate risk assessment. Two specific proposals relate to requirements for third-party verification of disclosed information and legal responsibility of financial business Boards of Directors for risk management (Lynch, 2010; Murphy, 2010).

Regulatory Reach to Prevent Arbitrage – Institutions and Products. Another consensus recommendation reflects the age-old reality that financial market innovators live to outrun financial market regulators. The "quiet era" of banking in the 1950s-1970s even saw this propensity at work in the US with banks finding new ways, in what was called a "cat and mouse" game between banks and regulators, to evade Regulation Q interest rate ceilings with new mechanisms and products. Post-hoc assessment of financial innovation in the decade leading into the 2007-2008 crisis points squarely at this pattern. Experts note the importance for reform efforts of trying to limit opportunities for regulatory arbitrage by extending regulation to all institutions, whether formally banks or not, that engage in bank-like activity and to all financial products (Goodhart, 2008; Lynch, 2010; IMF, 2009).

We use the World Bank's Database on Bank Regulation and Supervision (Barth *et al.,* 2006), which covers country regulations for a decade prior to the crisis and includes the following major categories of regulations: sector entry, ownership, capital requirements, permitted activities span (lending, securities, real estate), external audit, liquidity and diversification, deposit insurance, provisioning requirements, accounting/financial information disclosure and insolvency discipline/exit.[2] As we have synthesized them, contemporary regulatory reform proposals focus attention on four components of the database: capital, provisioning, disclosure and insolvency discipline/exit. As indicated in Table 2, of over 100 variables, these are the data series in the World Bank database with root numbers three (capital),

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[2] Available at:
http://econ.worldbank.org/WBSITE/EXTERNAL/EXTDEC/EXTRESEARCH/0,,contentMDK:20345037~pagePK:6421
4825~piPK:64214943~theSitePK:469382,00.html

nine (provisioning), ten (information disclosure) and eleven (insolvency discipline/exit).

We reviewed data for the year 2005 (the most recent wave prior to the crisis) in these series for completeness (missing observations) and sufficient variation. After that screen we identified particular indicators that represent the best proxies for concepts of good quality regulation in the literature on lessons from the crisis. Our goal was to identify, from the variables reported sufficiently and evidencing reasonable variation, those that best captured the spirit of contemporary views about the kind of regulation that should have mitigated the impact of the crisis.

1.3. Concept and Measurement of "Progressive" Banking

In most ways the impact of the 2007-2008 financial crisis was greater for wealthier countries. This should not be surprising because research suggests that financial development and economic growth are correlated (De Gregorio and Guidotti, 1995; Levine, 1997; Demtriades and Hussein, 1996; Luintel and Khan, 1999; Apergis *et al.,* 2007). Post-mortem of the crisis, however, yields the interesting idea that the relationship between financial development and growth is not curvilinear. For now, research on crisis incidence indicates that countries with deeper, more evolved, financial systems, suffered greater overall impact from the crisis. The logic follows research on the impact of financial crises historically (Kroszner *et al.,* 2007; Dell'Ariccia *et al.,* 2008) indicating that, in countries with more developed financial markets, companies rely more extensively on external finance, so that when a financial crisis occurs, the economy enters a downward spiral due to the impact of credit contraction on the real economy.

Claessens *et al.,* (2010) conclude their cross-national study of crisis incidence with the following summation:

> Most of the variation in financial distress appears related to the financial depth, not to measures of imbalances that had built up prior to the crisis, such as excessive credit growth, fiscal imbalances or trade imbalances.

Despite the importance of financial systems for growth and crisis incidence, there is surprisingly little consensus about how to define and measure financial system deepening in general and banking development in particular. For the purposes of this paper, we consider progressive banking those institutions that perform well and efficiently their functions of allocating savings and resources to the appropriate investment projects, facilitating the exchange of goods and services, sharing information, monitoring (promoting corporate control and governance), facilitating trade,

hedging, diversification, and pooling of risk. They are, in other words, institutions that lead to efficient financial intermediation and broad access to capital and financial services.

One of the key determinants of the efficiency of banking intermediation has to do with size. The greater the size of the banking system, the higher the economies of scale and the greater the amount of resources can be channeled from savers to investors (McAllister and McManus, 1993; Lang and Welzel, 1996; Jayaratne and Strahan, 1998). Another important aspect of financial efficiency is the degree of bank concentration. Concentrated banking systems are usually less prone to a systemic banking crisis, which improves the efficiency of their operations (Beccalli *et al.,* 2006; Berger, 2007). Yet a third characteristic of an efficient banking system relates to the role of information disclosure about the operation of banks. Practices that induce precise and accurate information disclosure and motivate private sector corporate control of banks tend to encourage bank growth and stability (Levine, 2004).

We extracted indicators for banking system size and efficiency from the World Bank's dataset on Financial Development and Structure[3] and its various publications of *Doing Business*[4] for the decade previous to the financial crisis (1995-2006). We experimented with other data sources but these contained the most complete (i.e., fewer missing values) series. Our proxies for progressive banking are included in Table 3.

1.4. Constructing Indices

Constructing an index of good bank regulation is not an easy task. Not only is the concept multidimensional but also we are limited by the availability of cross-country comparable data on the "good" aspects of regulation. In addition, there is no consensus in the literature on how best to measure it. Some authors, such as Rossi (1999), use an additive scale to rank countries according to the degree to which they comply with either international best standards or the regulatory practices of another country (usually the United States). Other authors, such as Barth *et al.,* (1998), have developed an index of bank regulation based on banks' engagement in four nontraditional activities, namely, securities activities, insurance, real estate, and nonfinancial ownership. An agreement has not yet been reached about which indicators to use and whether to employ an additive or a weighted scale. As a result, there is a significant lack of consistency, reliability, and even validity among the few existent indices of bank regulation.

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[3]Available at:
http://econ.worldbank.org/WBSITE/EXTERNAL/EXTDEC/EXTRESEARCH/0,,contentMDK:20696167~pagePK:6421 4825~piPK:64214943~theSitePK:469382,00.html

[4] Available at: http://www.doingbusiness.org/

Aware of these difficulties, we applied categorical principal component analysis to the World Bank's regulation survey dataset in order to create a new index of good regulation. This index reflects the regulatory lessons drawn from the 2007 crisis and it allows us to rank 129 countries according to the quality of their regulations. The index is then used as one of the main explanatory variables in the models for the impact of the crisis.

We took four main steps in constructing the new index. First, we chose the survey questions that best represented the regulatory lessons extracted from the 2007 financial crisis based on an extensive literature review. Second, we recoded some of the survey questions so that higher numbers reflected higher restrictions on each proxy of good regulation. For instance, one of the survey questions chosen asks: "does the minimum capital ratio vary as a function of market risk?" Original answers included "yes" or "no"; as a result, we recoded them so that "no" received the number "1" and "yes" received the number 2.[5]

The next step was to apply categorical principal component analysis to the chosen survey questions. This procedure, available as the program CATPCA in SPSS (Meulman *et al.,* 1999), is a data reduction method belonging to the nonlinear multivariate analysis techniques.[6] Like in (linear) principal component analysis, the rationale is that some of the questions (variables) are highly correlated with one another and they can be clustered together to form one, two or more independent dimensions —the so-called "factors" or "components."[7] In our case, we use only the first component extracted since it contains most of the information inherent in the original variables.

Indeed, the components extracted can be seen as "averages" of the closely related variables (Lijphart, 1999). Table 4 shows the results of the CATPCA of the five chosen questions. The values that are shown for each variable are the "component loadings," which may be interpreted as the correlation coefficients between the variable and the first and second components, respectively. While the variables related to dynamic provisioning, information disclosure and scope to prevent regulatory arbitrage score higher within component 1, the questions about macro-prudential regulation and insolvency discipline have higher correlation coefficients with factor 2. Taken together, the two components extracted account for 51.5% of the variation in the original variables.

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[5] We did not recode "no" as a "zero" because the software program we used to conduct the analysis considered zeros as missing values.

[6] In the specifications of the CATPCA, we tried both ordinal and spline ordinal procedures. The results were similar. Here, we present the results of the ordinal procedure.

[7] Because the index is based on a survey, we need to deal with categorical and ordinal variables. Unlike interval data, we cannot assume that the intervals between the categories are equal. Neither can we assume that the relationship among the variables is linear. As a result, using standard (linear) principal component analysis is inappropriate; rather, experts suggest using categorical principal component analysis in order to avoid the limitations of linear PCA (Gifi, 1990; Linting *et al.,* 2007).

Finally, the fourth step in constructing the good regulation index involved calculating the "object scores" for each country included in the analysis. Since the mean of these scores in each component extracted is zero, we can consider that all countries that had positive object scores presented "good regulation" whereas all countries that had negative object scores presented "bad regulation." Table 5 summarizes our findings.

A number of countries sometimes singled out for good regulation are in the top portion of our ranking. Spain, for example, offering the main example of dynamic provisioning pre-crisis is in the top 10% of the range of the ranking. Several Asian and Scandinavian countries stereotypically viewed, similarly to Mexico, as having suffered financial crises that motivated reform also fall in the top 25%. These are Malaysia, Singapore, the Philippines, Norway, Sweden and Finland. Mexico, a little above the mid-point of the range does not illustrate strong regulation according to our assessment of the type of regulation that should have helped forestall crisis incidence.

One of the main shortcomings of Mexican regulation contributing to lowering its score in our index is that minimum capital ratios did not vary with market risk in the baseline pre-crisis year 2005. This is corroborated through commentary in the 2006 Financial Stability Board Peer Review, which emphasizes "the need to further strengthen the authorities' ability to monitor the build-up of risks in the banking system, notably credit risk, as well as liquidity and contagion risks." Financial Stability Board *Country Review of Mexico: Peer Report* 2010, p. 12.

In order to construct an index of progressive banking, we followed the same four steps identified in the paragraphs about good regulation. The only difference is that in this case we used (linear) principal component analysis instead of CATPCA because all of the proxies for good banking were interval variables. The results of the analysis are shown in Table 6.

The first component explains almost 60% of the variation and all of the proxies for progressive banking present high component loadings. Based on the calculated object scores, we can rank countries according to the quality of their banking systems (see Table 7).

Our ranking of good banking countries is similar to those provided by other studies. The *Financial Development Report* (2008) published by the World Economic Forum, for instance, ranks 52 countries, according to a financial development index, which accounts for the size of the banking system, its efficiency and transparency among other characteristics. In the top 10 positions, the Report includes many of the countries that are classified in top 25% range of our own index: Japan, UK, Germany, France, Netherlands, Hong Kong SAR, Switzerland, and Singapore. Similarly, Dorrucci *et al.,* (2009) construct a composite index of financial development for 26 emerging economies, ranking countries that are in the bottom 25% of our list (Venezuela, Brazil, Argentina, and Russia) as having weakly developed

financial systems. In all three indices, Mexico is located in the bottom half of the respective rankings. These comparisons allow us to be confident in our measures of good banking.

2. Modeling Impact of Good Regulation and Progressive Banking

2.1. Impact-DV: measures and data sources

We assess the impact of the 2007 financial crisis on the health of the banking system in 129 developed and developing countries from two main perspectives. On the one hand, the liquidity crunch provoked by the crisis could have decreased or even reversed patterns of bank credit expansion observed in many countries during the 1995-2006 period. On the other hand, the reverberations of the crisis could have negatively affected banks' businesses and their profitability. Theses two effects do not necessarily go together, and as a result, in this paper, we present two main dependent variables: (1) the average variation in *credit provision* between 2007 and 2009, and (2) the average variation in banks' *profitability* between 2007 and 2009.

To be sure, a comparison of the levels of private credit by deposit money banks (to GDP) and returns on banks' assets between 1995 and 2009 for selected countries (shown in Figure 2) confirms that there is an important variation across countries in both credit provision and bank profitability. While some countries, such as Malaysia and Germany saw an important fall in the amount of credit provided by banks, other countries, such as Bulgaria and Brazil experienced the opposite trend. Mexico lived through a positive variation in credit provision after the 2007 crisis and a negative variation in bank profitability during the same period.

In order to gauge which of our 129 sampled countries experienced the worst and the least impact of the crisis, we applied principal component analysis (with varimax rotation) to five proxies of banks' credit provision and profitability to create two independent indices of our dependent variables. All of these proxies were taken from the World Bank's Financial Structure and Development Dataset and they included the 2007-2009 average growth rate of (1) private credit by deposit money banks as a share of GDP (pcrdbgdp), (2) private credit by deposit money banks and other financial institutions as a share of GDP (pcrdbofidgp), (3) bank credit as a share of bank deposits (bcbd), (4) banks' returns on assets (roa), and (5) banks' returns on equities (roe).

The factor loadings and the variance explained by the two dimensions extracted from the principal component analysis are shown in Table 8. Because pcrdbgdp, pcrdbofidgp and bcbd load well within the first component, we consider this dimension to represent the impact the crisis on

banks' credit provision (our first dependent variable). Similarly, because roa and roe present high correlation coefficients with the second component, we consider this factor to reflect the impact of the crisis on banks' profitability (our second dependent variable). Together, these two dimensions account for 70.4% of the variation in the original variables.

Based on the quartiles of the distribution of the object scores for each dimension, we then classified countries according to the magnitude of the impact of the crisis (see Table 9). In terms of credit provision, Mexico was only mildly affected by the crisis, being ranked 96th out of the 129 countries in our sample. Conversely, with respect to profitability, it ranked 3rd, just behind Thailand and the Dominican Republic, as one of the most affected countries. While the crisis had relatively little impact on Mexican banks' role as financial intermediaries, it did represent a "shock" to their returns as productive enterprises.

2.2. Controls: Measures and data sources

Beyond the quality of regulation and the level of banking development, the impact of the 2007 crisis on banks' credit provision and their profitability may have been mitigated by other variables. For instance, the effects of the crisis are likely to have been worse if there was a dramatic decrease in a country's economic activity either because exports fell, the terms of trade deteriorated or remittances dropped. Similarly, if countries were extremely exposed to large amounts of external and short-term debt, they were likely to be more vulnerable to the contagion effects of a liquidity crunch generated by the crisis. Table 10 summarizes the control variables we used, their definitions, and their sources.[8]

2.3. Models estimated

We conduct two exercises to determine the impact of good regulation and progressive banking on the effect of the global crisis on a country's banking sector, the resilience of its banking sector. A simple observation of mean object scores without controlling for other variables yields overall results similar to those revealed in our regression models. In line with other cross-national research on crisis incidence we corroborate that countries with deep financial systems tend to be hardest hit. We find that regulation has no impact on banking sector resilience. Our empirical exercises also indicate that in countries with shallow financial systems, good regulation increased the negative incidence of the global financial crisis. We describe both sets of empirical exercises that yielded these overall results in the rest of this

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[8] We imputed the missing values of these variables using Amelia II, available at: http://gking.harvard.edu/amelia/.

section. In the following section we discuss and interpret these results and their implications for existing literature and follow-on research.

A first approach to examine the relationship between good regulation, progressive banking and their impact on banks' credit provision and profitability is to examine the mean object score for each group of countries. These are shown in Table 11. Without controlling for other variables, it is interesting to observe that the mean object score for the impact of the crisis on credit provision is systematically higher in countries that presented bad banking systems than in countries that presented good banking systems. That suggests that regardless of the quality of their regulation, good banking countries suffered the most from the crisis in terms of its impact on credit provision. Conversely, the countries that present the worst mean object score (and thus, suffered the most) for the impact of the crisis on bank profitability were those who had bad banking systems but good regulation. Good regulation does not seem to have mitigated the impact of the crisis on profitability in good banking countries, but the difference in means suggests that it did play a role in bad banking countries. Such a role was to augment the negative impact of the crisis on banks' profitability, which suggests that it is important to investigate the role of the interaction between good regulation and progressive banking.

Do these observations hold when we control for other variables? In order to gauge the relative importance of good regulation and progressive banking in explaining the impact of the crisis on countries' banking systems, while controlling for other variables, we estimated four alternative specifications of a cross-country linear regression model. The first two models include our two main independent variables and all of the control variables; the difference is that in the second model, we used a dummy variable for good/bad banking and for good/bad regulation instead of the object scores extracted from the principal component analysis. In the last two models we also included an interaction variable between the good regulation index and the progressive banking dummy to check if the effect of good regulation depended on the levels banking development. The results of these linear regression models are shown in Table 12.

Conclusions

Our results show that the global crisis is linked to the greatest declines in credit provision post-crisis in countries where bank deposits are high. The crisis has a strong impact in countries with banking sectors that fit the traditional model of credit-based financial systems (Zysman 1983). The coefficient for "good banking index" is statistically significant in all four models at the 1% confidence level. These are banking systems that collect deposits from savers and lend them to investors/borrowers. In these systems non-financial corporations have access to a robust pool of credit funded by savers' deposits in banks. This result is fairly intuitive. Credit contracts the most in countries that represent classic credit-based financial systems.

In the context of these results, we would expect to find in a detailed case study of Mexican banking system resilience that the explanation lies more nearly with the relatively low level of deposits to GDP than with good regulation. In other words, the results of our large sample regressions give us reason to question the stylized view of Mexico as having been saved by good regulation from the worst of the global financial crisis.

Substantiating this hypothesis about Mexico is the second important finding in our cross-national modeling. In this quantitative exercise we find no evidence that good regulation mitigates the negative impact of the crisis. One important limitation is the construction of our good regulation index. The index is based on proxies for regulations highlighted in post-mortems of the crisis but our measures draw from datasets framed without the benefit of these post-hoc evaluations. The results could be sensitive to the particular measures of good regulation that are easily available for a large sample of countries.

A third intriguing result of our statistical analysis is that good regulation in bad banking countries has a significant negative impact on bank profitability. In both Models 3 and 4, the coefficient for the interaction between good regulation index and the dummy for good banking are positive and statistically significant at the 5% and 1% level of confidence, respectively. This suggests that given the same level of regulation, profitability in good banking countries is higher than in bad banking countries. Overall, if well-enforced, the elements of good regulation in our construction should force quicker and clearer identification of bank weaknesses. Our speculation is that, by bringing problems to light in a banking system that has a relatively limited deposit base, crisis very quickly forces corrective action and investor responses that lower bank profitability.

By our measures, Mexico fits this pattern. Mexico is one of 16 countries that fall into the quadrant of good regulation and bad banking, although it is a relatively weak good regulation country. Also in this quadrant are Argentina,

Brazil, Russia and Hungary, among others. We notice that 14 of 16 countries in this category suffered systemic crises in the fifteen years prior to the 2007-2008 financial crisis. Does this explain why countries with bank banking go through the efforts of codifying good regulation? This finding deserves further research. Is our hypothesis about the impact of transparency and prompt corrective action valid? In-depth case study of the regulatory reform and including micro-level data for banks would help illuminate these questions.

Anexos

FIGURE 1. DISTRIBUTION OF COUNTRIES ACCORDING TO GOOD REGULATION AND PROGRESSIVE BANKING

DISTRIBUTION OF COUNTRIES ACCORDING TO GOOD BANKING & GOOD REGULATION INDICES

TABLE 1. TYPOLOGY OF GOOD BANKING AND GOOD REGULATION

GOOD BANKING & GOOD REGULATION	BAD BANKING & GOOD REGULATION	GOOD BANKING & BAD REGULATION	BAD BANKING & BAD REGULATION
Algeria, Australia, Bahrain, Bangladesh, Canada, China, Cyprus, Czech Republic, Denmark, Egypt, El Salvador, Finland, France, Germany, Greece, Hong Kong, Iceland, Ireland, Israel, Italy, Japan, Jordan, Kuwait, Malaysia, Malta, Mauritius, Morocco, Netherlands, New Zealand, Norway, Pakistan, Philippines, Portugal, Singapore, Slovenia, South Africa, Korea (Rep.), Spain, Sweden, Switzerland, Syrian Arab Republic, Thailand, UK, US	Argentina, Brazil, Dominican Republic, Estonia, Hungary, Jamaica, Kazakhstan, Kenya, Latvia, Lithuania, Mexico, Nicaragua, Papua New Guinea, Russian Federation, Sri Lanka, Zimbabwe	Antigua & Barbuda, Austria, Belgium, Bolivia, Chile, Dominica, Ethiopia, Grenada, Guyana, India, Lebanon, Luxembourg, Oman, Panama, Saudi Arabia, Seychelles, Slovak Republic, St. Kitts & Nevis, St. Lucia, St. Vincent & the Grenadines	Angola, Armenia, Belarus, Belize, Benin, Bhutan, Bosnia & Herzegovina, Botswana, Bulgaria, Burkina Faso, Burundi, Cameroon, Central African Republic, Chad, Colombia, Congo (Rep.), Costa Rica, Côte d'Ivoire, Croatia, Equatorial Guinea, Fiji, Gabon, Ghana, Guatemala, Guinea-Bissau, Honduras, Indonesia, Kyrgyz Republic, Lesotho, Macedonia, Malawi, Maldives, Mali, Moldova, Mozambique, Niger, Nigeria, Peru, Poland, Romania, Senegal, Suriname, Tanzania, Togo, Trinidad & Tobago, Uganda, Uruguay, Vanuatu, Venezuela
Total: 44	Total: 16	Total: 20	Total: 49

TABLE 2. PROXIES FOR GOOD REGULATION

CHARACTERISTICS OF GOOD REGULATION	INDICATORS	DEFINITION	SOURCES
Dynamic Provisioning	Yes/No	Does the minimum capital ratio vary as function of market risk?	World Bank's Bank Regulation and Supervision Dataset
Insolvency Definition/ Required Exit	Yes/No	Do regulations establish pre-determined levels of solvency deterioration which force automatic action such as intervention?	World Bank's Bank Regulation and Supervision Dataset
Macro-Prudential Supervision	Yes/No	Does the minimum capital ratio vary as function of market risk?	World Bank's Bank Regulation and Supervision Dataset
Information Disclosure and Quality	Yes/No	Must banks disclose risk management procedures to the public?	World Bank's Bank Regulation and Supervision Dataset
Scope to Prevent Regulatory Arbitrage	Yes/No	Are off-balance sheet items disclosed to the public?	World Bank's Bank Regulation and Supervision Dataset

TABLE 3. PROXIES FOR PROGRESSIVE BANKING

CHARACTERISTICS OF PROGRESSIVE BANKING	INDICATORS	DEFINITION	SOURCES
Size of Banking System	Deposit Money Bank Assets/GDP	Claims on domestic real nonfinancial sector by deposit money banks as a share of GDP	World Bank's Financial Structure and Development Dataset
	Bank Deposits /GDP	Demand, time and savings deposits in deposit money banks as a share of GDP	World Bank's Financial Structure and Development Dataset
Degree of Banking Concentration	Bank Overhead Costs / Total Assets	Accounting value of a bank's overhead costs as a share of its total assets	World Bank's Financial Structure and Development Dataset
	Net Interest Margin	Accounting value of bank's net interest revenue as a share of its interest-bearing (total earning) assets	World Bank's Financial Structure and Development Dataset
Quality of Bank Monitoring and Information Disclosure	Credit Information Index	Indexed value for the amount of credit information available from either a public registry or a private bureau	World Bank's *Doing Business*

TABLE 4. COMPONENT LOADINGS FOR CATPCA APPLIED TO INDICATORS OF GOOD REGULATION

	COMPONENT 1	COMPONENT 2
Information disclosure	**0.769**	0.228
Dynamic provisioning	**0.684**	0.258
Scope to prevent regulatory arbitrage	**0.620**	-0.344
Insolvency discipline/Exit	0.172	**-0.365**
Macro-prudential regulation	-0.090	**0.851**
% of Variance Explained	29.617	21.875

TABLE 5. RANKING OF COUNTRIES ACCORDING TO GOOD REGULATION INDEX

"GOOD" REGULATION	
Top 10% of Index Range	Kuwait, Malaysia, Norway, South Africa, Spain, Hungary, Slovenia, Switzerland
Top 25% of Index Range	Kuwait, Malaysia, Norway, South Africa, Spain, Hungary, Slovenia, Switzerland, France, Israel, Netherlands, Pakistan, Portugal, Singapore, Sweden, UK, Philippines, Iceland, Papa New Guinea, Denmark, Egypt Estonia, Finland, Kenya, Latvia, Lithuania, Nicaragua, Korea (Rep.), Sri Lanka, Zimbabwe
"BAD" REGULATION	
Bottom 10% of Index Range	Ethiopia, Malawi, Suriname, Trinidad & Tobago, Antigua & Barbuda, Dominica, Fiji, Ghana, Grenada, St. Kitts & Nevis, St. Lucia, St. Vincent & the Grenadines
Bottom 25% of Index Range	Ethiopia, Malawi, Suriname, Trinidad & Tobago, Antigua & Barbuda, Dominica, Fiji, Ghana, Grenada, St. Kitts & Nevis, St. Lucia, St. Vincent & the Grenadines, Uganda, Bosnia & Herzegovina, Mozambique, Lesotho, Burundi, Bhutan, Belize, Austria, Uruguay, Seychelles

TABLE 6. COMPONENT LOADINGS FOR PRINCIPAL COMPONENT ANALYSIS OF PROXIES FOR GOOD BANKING

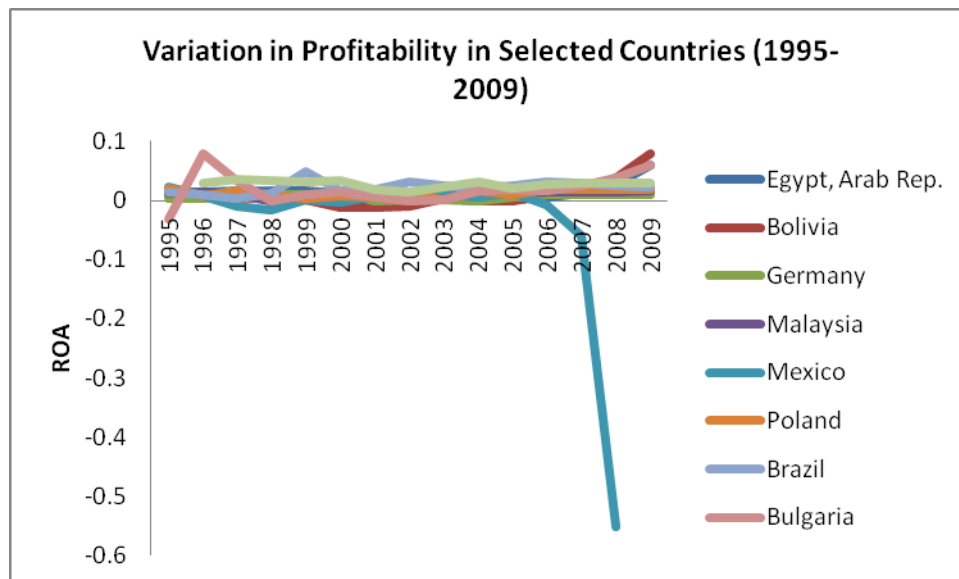|	COMPONENT 1
Deposit Money Bank Assets / GDP	0.881
Bank Deposits / GDP	0.813
Bank Overhead Costs / Total Assets	-0.815
Net Interest Margin	-0.833
Credit Information Index	0.433
% of Variance Explained	59.662

TABLE 7. RANKING OF COUNTRIES ACCORDING TO GOOD BANKING INDEX

"GOOD" BANKING	
Top 10% of Index Range	Japan, Luxembourg, Hong Kong, Malta, Switzerland, Malaysia, Cyprus, Netherlands, Ireland, Thailand, Singapore, UK
Top 25% of Index Range	Japan, Luxembourg, Hong Kong, Malta, Switzerland, Malaysia, Cyprus, Netherlands, Ireland, Thailand, Singapore, UK, Portugal, Belgium, Canada, New Zealand, Germany, Austria, Spain, Kuwait, Israel, Panama, Iceland, France, Egypt, Finland, Korea (Rep.), Jordan, Australia, Greece, China, Norway
"BAD" BANKING	
Bottom 10% of Index Range	Romania, Niger, Moldova, Mozambique, Russian Federation, Nigeria, Chana, Uganda, Venezuela, Zimbabwe, Malawi, Congo (Rep.)
Bottom 25% of Index Range	Romania, Niger, Moldova, Mozambique, Russian Federation, Nigeria, Chana, Uganda, Venezuela, Zimbabwe, Malawi, Congo (Rep.), Belarus, Papua New Guinea, Argentina, Burkina Faso, Macedonia, Colombia, Mali, Togo, Côte d'Ivoire, Angola, Guatemala, Lesotho, Armenia, Tanzania, Brazil, Burundi, Kazakhstan, Chad, Dominican Republic, Kyrgyz Republic

FIGURE 2. VARIATION IN BANK CREDIT PROVISION AND PROFITABILITY IN SELECTED COUNTRIES FROM 1995 TO 2009
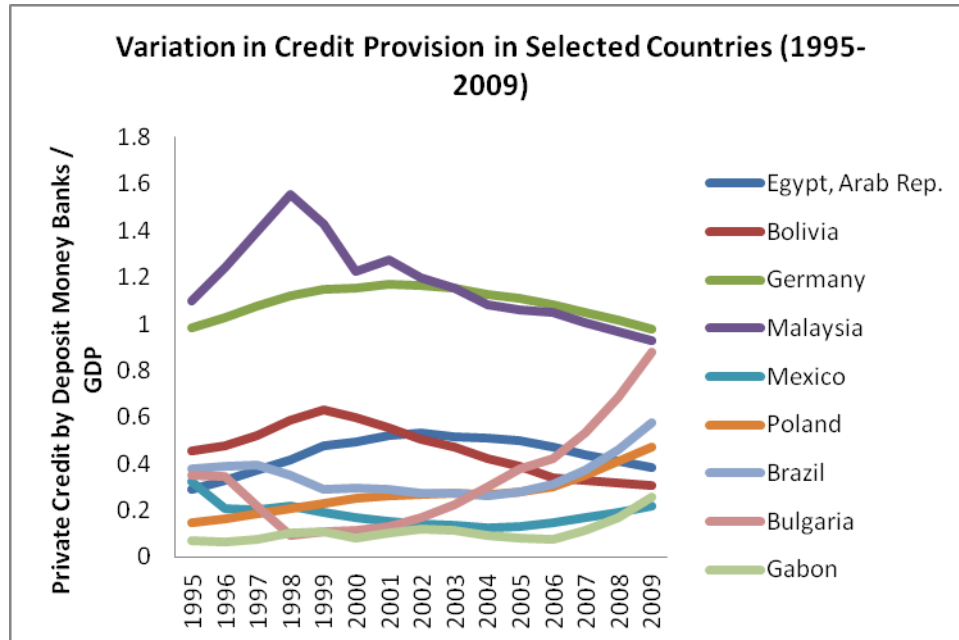
Source: World Bank's Financial Structure and Development Dataset.

Source: World Bank's Financial Structure and Development Dataset.

TABLE 8. COMPONENT LOADINGS FOR PRINCIPAL COMPONENT ANALYSIS OF PROXIES FOR BANK CREDIT PROVISION AND PROFITABILITY

	COMPONENT 1	COMPONENT 2
Private credit by deposit money banks (as a share of GDP)	**0.961**	0.035
Private Credit by deposit money banks and other financial institutions (as a share of GDP)	**0.941**	0.028
Bank credit as a share of bank deposits	**0.700**	0.004
Banks' returns on assets	-0.008	**0.782**
Banks' returns on equities	0.045	**0.778**
% of Variance Explained	46.180	24.229

TABLE 9. DISTRIBUTION OF COUNTRIES ACCORDING TO THE MAGNITUDE OF THE IMPACT OF THE 2007 CRISIS

IMPACT ON BANK CREDIT PROVISION			
Most Affected	*Somewhat Affected*	*Mildly Affected*	*Least Affected*
Egypt, Ehtiopia, Bolivia, Kenya, Hong Kong, Burkina Faso, Germany, Malaysia, Philippines, Cameroon, El Salvador, Saudi Arabia, Thailand, Japan, Austria, Mali, Dominica, Israel, Singapore, Pakistan, Senegal, Sri Lanka, Guyana, Mauritius, Central African Republic, Malta, Indonesia, Australia, US, Korea (Rep.), Panama, Finland	Belize, Italy, Uruguay, Bangladesh, Algeria, St. Kitts & Nevis, Canada, Mozambique, Switzerland, New Zealand, St. Vincent & the Grenadines, Burundi, Benin, Croatia, Jordan, Grenada, Chad, South Africa, Sweden, Dominican Republic, Netherlands, Trinidad & Tobago, Portugal, Oman, India, Equatorial Guinea, UK, Fiji, France, Peru, Denmark, Chile	Niger, Bahrain, Côte d'Ivoire, Vanuatu, Bosnia & Herzegovina, Greece, Belgium, Ghana, Antigua & Barbuda, Congo (Rep.), Lebanon, China, Spain, Norway, Cyprus, Seychelles, Syrian Arab Republic, Iceland, Belarus, Slovak Republic, Argentina, Hungary, Togo, Guatemala, Nicaragua, Lesotho, Ireland, Maldives, Czech Republic, Bhutan, **Mexico**, Morocco	Latvia, Zimbabwe, Jamaica, Costa Rica, Honduras, Colombia, Poland, Estonia, Russian Federation, Macedonia, Malawi, Suriname, Lithuania, Kwait, Slovenia, Papua New Guinea, Uganda, St. Lucia, Moldova, Brazil, Luxembourg, Tanzania, Bulgaria, Kazakhstan, Romania, Kyrgyz Republic, Armenia, Venezuela, Nigeria, Gabon, Angola, Guinea-Bissau
IMPACT ON BANK PROFITABILITY			
Most Affected	*Somewhat Affected*	*Mildly Affected*	*Least Affected*
Thailand, Dominican Republic, **Mexico**, Ireland, Côte d'Ivoire, Uruguay, Peru, Pakistan, Antigua & Barbuda, Chile, Saudi Arabia, Hungary, Costa Rica, Denmark, Italy, Honduras, Oman, Armenia, Australia, UK, Luxembourg, El Salvador, Botswana, Cyprus, Syrian Arab Republic, Mozambique, Congo (Rep.), Austria, Jordan, Mauritius, Guatemala, Venezuela, US	Nigeria, Argentina, Estonia, France, Romania, Bosnia & Herzegovina, Gabon, Singapore, Slovak Republic, Switzerland, Ethiopia, Brazil, Colombia,Seychelles, Guinea-Bissau, St. Lucia, Zimbabwe, Bhutan, Sri Lanka, Maldives, Togo, Nicaragua, Papua New Guinea, Lesotho, Chad, Japan, Suriname, Iceland, Kuwait, Trinidad & Tobago, St. Vincent & the Grenadines, Belarus	Grenada, St. Kitts & Nevis, Vanuatu, Burundi, Equatorial Guinea, Belize, Kazakhstan, Fiji, Spain, Dominica, Burkina Faso, Senegal, Moldova, Central African Republic, Poland, Malta, Latvia, Angola, Benin, Jamaica, Morocco, Indonesia, Norway, Malaysia, India, Niger, Lebanon, South Africa, Russian Federation, Uganda, Sweden, Hong Kong	New Zealand, Mali, Germany, Canada, Egypt, Israel, Lithuania, Czech Republic, Panama, Portugal, Macedonia, Kyrgyz Republic, Malawi, Guyana, Cameroon, Bangladesh, Greece, Kenya, Croatia, China, Slovenia, Tanzania, Bulgaria, Korea (Rep.), Bahrain, Bolivia, Belgium, Algeria, Finland, Netherlands, Philippines, Ghana

TABLE 10. DEFINITION AND SOURCES OF CONTROL VARIABLES

CONTROL VARIABLES	DEFINITION	SOURCES
expgdp	The value of all goods and services provided to the rest of the world as a percentage of GDP	World Development Indicators (World Bank)
termstrade	The percentage ratio of the export unit value indices to the import unit value indices, measured relative to the base year 2000	World Development Indicators (World Bank)
currentacc	The sum of net exports of goods, services, net income, and net current transfers as a percentage of GDP	World Development Indicators (World Bank)
extdebt	Total external debt stocks to gross national income. Total external debt is debt owed to nonresidents repayable in foreign currency, goods, or services. Total external debt is the sum of public, publicly guaranteed, and private nonguaranteed long-term debt, use of IMF credit, and short-term debt.	Global Development Finance (World Bank)
shortdebt	Short-term debt includes all debt having an original maturity of one year or less and interest in arrears on long-term debt	Global Development Finance (World Bank)
remmitt	Net remittance inflows as a share of GDP	Financial Structure and Development Dataset (World Bank)
inflation	Inflation as measured by the consumer price index reflects the annual percentage change in the cost to the average consumer of acquiring a basket of goods and services that may be fixed or changed at specified intervals, such as yearly	World Development Indicators (World Bank)
gdpgrowth	Annual percentage growth rate of GDP at market prices based on constant local currency	World Development Indicators (World Bank)

TABLE 11. MEANS OF THE OBJECT SCORES FOR GROUPS OF COUNTRIES

	IMPACT OF THE CRISIS ON BANK CREDIT PROVISION	IMPACT OF THE CRISIS ON BANK PROFITABILITY
Countries with Good Banking & Good Regulation	-0.449	0.07
Countries with Bad Banking & Good Regulation	0.382	-0.445
Countries with Good Banking & Bad Regulation	-0.374	0.036
Countries with Bad Banking & Bad Regulation	0.067	0.431

TABLE 12. RESULTS OF FOUR LINEAR REGRESSION MODELS

	MODEL 1		MODEL 2		MODEL 3		MODEL 4	
	Impact on Credit Provision	*Impact on Profitability*	*Impact on Credit Provision*	*Impact on Profitability*	*Impact on Credit Provision*	*Impact on Profitability*	*Impact on Credit Provision*	*Impact on Profitability*
Good Banking Index	-0.429***	-.018			-.428***	.004		
	(0.097)	(.112)			(.098)	(.110)		
Good Regulation Index	-.003	.108			-.009	-.210		
	(.098)	(.113)			(.159)	(.179)		
Good Banking Dummy			-.749***	.257			-.751***	.318
			(.188)	(.216)			(.190)	(.211)
Good Regulation Dummy			-.126	-.113			-.116	-.515**
			(.187)	(.214)			(.227)	(.252)
Good Regulation Index * Good Banking Dummy					.010	.482**	-.010	.438***
					(.189)	(.213)	(.139)	(.154)
Expgdp	.007*	-.001	.004	-.002	.007*	.001	.004	.000
	(.004)	(.004)	(.004)	(.004)	(.004)	(.004)	(.004)	(.004)
Termstrade	.005	-.010	.005	-.008	.005	-.008	.005	-.006
	(.009)	(.011)	(.009)	(.011)	(.009)	(.010)	(.009)	(.010)
Currentacc	.007	.002	.008	.005	.007	-.004	.008	-.006
	(.011)	(.013)	(.011)	(.012)	(.011)	(.013)	(.011)	(.013)
Extdebt	.002	.001	.002	.001	.002	.001	.002	.000
	(.002)	(.002)	(.002)	(.002)	(.002)	(.002)	(.002)	(.002)
Shortdebt	.002	-.012	.005	-.008	.002	-.011	.005	-.013
	(.009)	(.010)	(.009)	(.010)	(.009)	(.010)	(.009)	(.010)
Remmitt	.001	-.001	.002	-.001	.001	.000	.002	-.001
	(.003)	(.004)	(.003)	(.004)	(.003)	(.004)	(.003)	(.004)
Inflation	.004***	.000	.004***	.000	.004***	.000	.004***	.000
	(.001)	(.001)	(.001)	(.001)	(.001)	(.001)	(.001)	(.001)
Gdpgrowth	-.002	.029	-.008	.030	-.003	.001	-.007	.003
	(.035)	(.040)	(.035)	(.040)	(.037)	(.041)	(.036)	(.040)
Reserves	-.008	.001	-.008	.000	-.008	-.002	-.008	-.001
	(.006)	(.007)	(.006)	(.007)	(.006)	(.007)	(.006)	(.007)
Fxregime	-.320*	.660***	-.298	.653***	-.319	.705***	-.299	.737***
	(.191)	(.220)	(.190)	(.218)	(.193)	(.217)	(.193)	(.214)
Bkgcrisis	.192	-.105	.167	-.003	.194	-.007	.166	.037
	(.171)	(.197)	(.172)	(.197)	(.176)	(.199)	(.173)	(.192)
Constant	-.711	.536	-.273	.318	-.716	.268	-.272	.243
	(.991)	(1.141)	(1.012)	(1.161)	(1.001)	(1.127)	(1.017)	(1.127)
R-squared	.324	0.104	0.321	0.107	0.324	0.143	0.321	0.167
Adjusted R-squared	.247	0.002	0.244	0.007	0.241	0.037	0.238	0.064
No. of Observations	129	129	129	129	129	129	129	129

Stardard Errors are between parentheses.
*p<.10; **p<.05; ***p<.01

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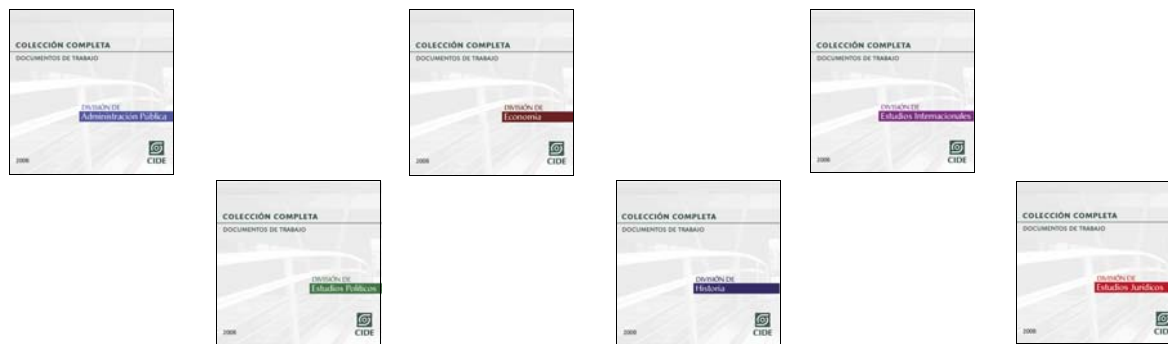
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