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## **Financial Policy in Practice:**

*Benchmarking Financial Sector Strategies*

*around the World\**

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### **Abstract**

Policy makers use financial sector strategies to formulate a holistic policy for the national financial system. This paper examines and rates financial sector strategies around the world on how well they formulate development targets, arrangements for systemic risk management, and implementing plans. The strategies are also rated on whether they consider policy trade-offs between financial development and systemic risk management. The rated strategies are then benchmarked against a range of country characteristics. The analysis finds that the scope and quality of national strategies for the financial sector are systematically influenced by several country characteristics. Interestingly, policy trade-offs, particularly between financial development and systemic risk management, are not adequately considered in the strategies.

**Keywords:** Financial Sector; Policy Formulation, Objectives, Trade-offs, and Implementation; Financial Development; Management of Systemic Risk.

**JEL Classification:** G18, G28, G38.

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## 1. Introduction

Policy makers around the world strive for greater financial inclusion without financial crises.<sup>1</sup> Greater financial inclusion is needed because credit, for instance, is used only by about 8 percent of people in developing countries and about 14 percent in developed countries. Finance, however, can be a double-edged sword and banking crises have been costly, both for countries and vulnerable individuals.<sup>2</sup> Hence, providing the right amount of credit—not too much and not too little—is a major concern for policy makers.<sup>3</sup> Financial policy must account for the trade-off between the speed of financial development and the systemic risk accumulation.<sup>4</sup> At the national level, the financial sector strategy formulates policy for the financial sector, and should set development targets that account for the associated systemic risk and communicate the risk appetite (tolerance) of the country in the financial area.

This paper, to our knowledge, is the first attempt at reviewing and benchmarking the properties of national strategies for the financial sector. We use a sample of 78 countries at different levels of development from around the world to conduct our study. The sample has been “stratified” to cover various geographic regions, levels of development, structures of national financial systems, and experience of financial crises, among other factors. We examine and rate the national strategies for the financial sector on how well they define development targets, arrangements for systemic risk management, and implementing plans for the strategy.<sup>5</sup> Moreover, we rate the strategies on whether they consider policy trade-offs between financial development and systemic risk accumulation.<sup>6</sup> The rated strategies are then benchmarked against a range of country characteristics.

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<sup>1</sup> G-20 Financial Inclusion Action Plan: <http://www.gpfi.org/our-work/work-plans/g20-financial-inclusion-action-plan>.

<sup>2</sup> See e.g. Reinhart and Rogoff 2009; Demirguc and Detragiache 2005; Laeven and Valencia 2012; Brown 2013.

<sup>3</sup> Buncic and Melecky 2013 discuss the issue of an optimal rate of crediting that does not lead to excessive accumulation of credit risk and credit bubbles—see also references therein. Also, Apostoiae et al. 2014 caution the policymakers in emerging markets economies not to overregulate financial markets and strike the right balance between financial development and stability.

<sup>4</sup> Beck and De Jonghe 2013; Arcand, Berkes, and Panizza 2012; Pagano 2012; Loayza and Ranciere 2006.

<sup>5</sup> Note that the rating takes into account *implementation plans*, not the actual implementation or its outcomes.

<sup>6</sup> Although other policy trade-offs may also exist, such as that between financial inclusion and market integrity, we focus on the trade-off between financial development (inclusion) and financial stability. We see this trade-off as the most important one, because of the lessons from the global crisis that has been in many respects caused by irresponsible financial inclusion in credit.

The literature has discussed important trade-offs and synergies between boosting financial development (inclusion) and fostering financial stability. In general, there appears to be a limit to how much, to whom, and what range of services the financial system can provide at a given stage of its development. This limit (a financial possibility frontier) is affected by many development factors driving the provision of financial services on the supply side (financial system), constraining participation on the demand side (individuals and firms), and affecting public policy (the government) in correcting market imperfections (Beck and Feyen 2013; Rousseau and Wachtel 2011; Haiss et al. 2010).

At the micro level and on the demand side of the financial market, greater financial inclusion can improve the efficiency and stability of financial intermediation by, for example, making greater and more diversified domestic savings available to banks. This strengthens the financial sector resilience to crisis episodes and mitigates liquidity risk. As a result, banks can rely less on riskier wholesale financing and enhance the resilience of their funding (Han and Melecky 2013).<sup>7</sup> Further, by enabling broader access to credit, bank loan portfolios could become more diversified and resilient to correlated losses (Adasme, Majnoni, and Uribe 2006). Greater financial inclusion can also enhance financial stability indirectly by providing households (and firms) with access to savings, credit, and insurance tools that boost the resilience and stability of the real economy and thus of the financial system that serves it (Cull, Demirguc-Kunt, and Lyman 2012). However, inclusion of everybody in each and every financial service cannot be the social objective. The U.S. subprime crisis showed that subsidized, undue access to credit, combined with tolerated predatory lending, is bad policy.

On the supply side, development of the financial system and its depth can face a threshold beyond which further financial deepening can be counterproductive and could plant the seeds of future crises. The academic literature has only recently focused on the trade-off between financial development and stability. On the one hand, Ranciere, Tornell, and Westermann (2006, 2008) praise financial liberalization for advances in economic development even when accounting for the cost of occasional financial crises. In their opinion, systemic risk

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<sup>7</sup> The literature also discusses the role of foreign bank ownership and its ambiguous role for stability (Eller et al, 2006; Cull and Martinez Peria, 2013) and access to finance (Cull and Martinez Peria, 2010).

taking has a positive effect on economic growth in many countries. On the other hand, the work of Beck and Feyen (2013), Arcand et al. (2012), and Pagano (2012) underscores that finance can become too large relative to the real economy it serves, at which point it can stop contributing to economic growth and turn from the “lifeblood” to “toxin” for real economic activity. However, if the financial sector is too small relative to the real economy, this can also pose a risk to financial stability. The ability of a small financial sector to efficiently and prudently intermediate funds can be compromised if capital inflows overwhelm existing capacities of the financial system (Committee on International Economic Policy and Reform 2012; Allen et al. 2011).

We find that the scope and quality of national strategies for the financial sector are influenced by the type of legal system in a given country, its level of income and macroeconomic stability, its existing financial depth and inclusion, the share of foreign ownership in the national financial sector, and the experience of past financial crises. First, if a country’s legal system is based on mixed law, and on civil, common, or mixed law, the country is, respectively, more attentive to financial development objectives, and to planning for implementation in its financial sector strategy. Interestingly, countries with legal systems based on civil law and religious law are more likely to address trade-offs between financial development and stability. Second, as their per capita income increases, countries focus less on development objectives, and, surprisingly, they also focus less on systemic risk. At the same time, greater governance effectiveness helps countries address policy trade-offs in their financial sector strategies.

Third, as financial inclusion increases and country financial systems deepen, the national strategies neglect development objectives and systemic risk, respectively. Concurrently, the increasing depth of credit markets sharpens countries’ focus on broader financial development objectives—presumably for other financial services, not just credit. Fourth, greater foreign ownership in the domestic banking system intensifies the attention countries pay to the trade-off between financial development and systemic risk management. Fifth, experience of past banking crises raises countries’ awareness of challenges in the financial sector and stimulates greater planning for implementation of the strategies. However, as the memory of past banking crises fades, that experience can become counterproductive and weaken financial sector strategies and planning for

implementation. Sixth, we do not find any significant positive effect of development assistance by the World Bank under the FIRST initiative on the scope and quality of financial sector strategies in addition to the considered country characteristics.

Notably, we find that national financial strategies rarely discuss policy trade-offs between financial development and systemic risk. Only 26 percent of countries have financial sector strategies that consider trade-offs between their financial development goals and managing systemic risk in the financial sector, despite the fact that many countries (54 percent) commit to both financial development and systemic risk management within the same strategy document. Overall, 42 percent of countries commit to both advancing financial development and managing systemic risk without considering any trade-offs between the two goals.

The paper proceeds as follows. Section 2 discusses general properties of national strategies for the financial sector, explains the lenses through which this paper assesses the comprehensiveness of the strategies, and outlines which aspects a comprehensive financial sector strategy would include for the purpose of this paper. Section 3 presents stylized facts following from our review of financial sector strategies, focusing on 10 selected aspects. Section 4 describes our benchmarking model for financial sector strategies that accounting for a number of country characteristics. Section 5 discusses the estimation results after we have taken the benchmarking model to the data. Using the estimated model, section 6 benchmarks individual countries to their peers. Section 7 concludes.

## **2. Properties of Financial Sector Strategies**

When preparing this paper, international financial institutions, particularly the World Bank (which supported a number of strategies in developing countries through the FIRST Trust Fund), became our primary source of data. Thereafter, the websites and official documents of ministries of finance, central banks, or financial sector supervisors were used as sources for data collection, because these institutions are typically the custodians of national financial sector policy. Only 29 out of the 78 countries in our sample have their financial sector strategies formulated in a single document that aims to address both financial development and financial

stability objectives, in contrast to financial inclusion strategies (see section 3 for more details). To accurately assess some of the questions on systemic risk, we used financial sector stability reports. These documents provided more detailed information on the country's views and approaches to systemic risk management in the financial sector. Yet using these reports was not without challenge. For one thing, not all countries that had a financial sector strategy produced a financial stability report and vice versa. Therefore, comparison across the entire pool of countries for certain topics was not always easy; nonetheless, it was always informative.

Overall, we have strived to “stratify” the countries included in our sample across all geographic regions, levels of development, and different structures of the national financial system and experience of financial crises, among other criteria. For the geographic regions and income level, we have followed the World Bank classification and complemented the developing countries with a proportional sample of countries in the Organisation for Economic Co-operation and Development (OECD) outside World Bank regions, generally high-income OECD countries. Taking all limitations of our sampling strategy into account, we find the sample in general representative for the purpose of our preliminary study, especially because this is the first such study to have been conducted.

## ***2.1. Establishing financial sector development objectives***

In reviewing the objectives set forth in financial sector strategies, we focus on their *specificity* and *measurability*, not on their achievability or realism. We ask whether a given financial sector strategy has clear (specificity) and well-quantified objectives (measurability). This paper does not discuss the *achievability* or *realism* of the strategic objectives set forth in the strategies. Such a determination requires a more comprehensive assessment of resources, knowledge, and degree of consensus around the objectives held by key stakeholders in the system for each country. Instead, we are content to assess whether, at a minimum, the strategy includes an adequate specification of tools to achieve the objectives.

We start with evaluating whether the objective is *clear* and *well defined*. We assess whether the objective is clearly identified somewhere in the draft of the strategy document(s). The judgmental criterion that

we apply is: Would the objective be clear to someone with a basic knowledge of finance and economics? In most of the cases that we reviewed, finding a statement of objective(s) was relatively easy (Mexico).<sup>8</sup> The objectives were broadly drafted in the form of aspirations for the type of financial sector perceived to be necessary for supporting the country's national development, for example, maintaining financial sector stability, increasing access to finance, or promoting competition in the sector.

Few strategies, however, included *quantifiable development objectives* (Malaysia). There was a reference to national levels of development, such as becoming a middle-income country by a specific date. To this end, the financial development objective could be described as a derived quantifiable objective. When the review of financial sector strategies expanded to include financial sector stability reports, it became possible to identify quantified indicators as the reference points for financial development objectives. In the absence of numerical targets, the preferred performance indicators were general statements of intent, such as achieving financial sector stability, increasing access to finance, improving financial inclusion, and mobilizing long-term finance.<sup>9</sup>

Statements of objectives accompanied by an explicit statement or discussion of specific *policy tools* that would be deployed to achieve the targets set out in the objectives were more difficult to find. Instead, the objectives were peppered with statements of intent to develop a financial sector that is effective, for instance, by expanding access to credit and financial services; enhancing savings mobilization, especially long-term savings; and mobilizing long-term capital for investment (Rwanda). The strategies did not include, for example, intermediate goals such as the level of outreach for expanding the access to finance as an objective, regulation to facilitate development of transparent savings products and the targeted level of savings as a percentage of GDP, or development of capital markets' infrastructure and institutions and the targeted proportion of long-term finance in financial intermediation.

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<sup>8</sup> For detailed country examples, please see Maimbo and Melecky (2014)—the working paper version.

<sup>9</sup> See Cihak et al. (2012) on suitable indicators to quantify development objectives in the financial sector.

## **2.2. Identifying systemic risk in achieving targeted development objectives**

In judging whether a financial sector strategy both identifies and quantifies systemic risk associated with achieving the set development objectives and the adequately specifies the tools to manage systemic risk, we were careful to seek an explicit reference to risk expectations over the medium to long term, as well as the specific tools to be deployed for systemic risk management.<sup>10</sup> The most informed strategies are those that acknowledge that financial development is not a deterministic linear process of growth. Rather, it is a process full of risks that need to be identified, quantified, and managed appropriately. The levels and types of risks vary. This paper focuses on *systemic risks*, that is, those that affect the financial system as a whole. In reviewing the strategies, we looked for those that identified potential risks such as a significant increase in private sector indebtedness, unsound financial markets, and imprudent behavior of financial institutions that could lay the foundations for instability or a financial crisis. Equally, we looked for measures or tools to be deployed for mitigating and managing such risks.

The majority of strategies are quick to refer to *specific individual* risks—credit risks, interest rate risks, foreign exchange risks and the like (Morocco)—that pose a risk to the country in achieving its development objectives. These risks are discussed in detail, as are the mitigation measures the government plans to adopt. Systemic risks are described and acknowledged in general terms, often in reference to the banking sector and its concentration in certain large institutions (Mozambique). Overall, though, such references are cursory in nature and fell short of quantifying systemic risks, using only some simple indicators of systemic risk.

Systemic risks were often referred to in the context of the move from *compliance-based* to *risk-based* supervision and further to consolidated supervision under Basel II or crisis preparedness frameworks (Cambodia). Strategies thus included plans for strengthening early-warning systems, regimes of prompt corrective actions, and lender-of-last-resort facilities. The discussion of the specific systemic risks (of time-series or cross-section type) that were to be addressed by these arrangements and their embedded policy tools

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<sup>10</sup> Note that stress testing which gained importance and dedication from policy makers over the past decade could also provide useful parametric (quantitative) measures of systemic risk to establish a baseline and quantitative targets for the financial sector strategy in regards to systemic risk. See Buncic and Melecky (2013) and Melecky and Podpiera (2012) that discuss the use of stress testing in policy making.

(limits on the loan to value ratio or lending in foreign currency to unhedged borrowers, for example) was often missing.

### ***2.3. Implementing the strategy***

For the success of any strategy, planning for implementation is just as important as the content of the strategy. We look for three key elements in this regard: signs of a *collaborative* process among the key stakeholders within a financial system that should underlie the preparation and design of a strategy; clear *responsibility* for the implementation of a strategy in its entirety and its subcomponents; and an agreed institutional *monitoring and evaluation* process that includes periodic external assessment. Specifically, we look to see if the strategy communicates the implementation plan, assigns responsibility for implementation of development goals, and assigns responsibility for systemic risk management.<sup>11</sup>

Strategies are relatively clear about the *process* for implementing the strategy—outlining which institutions are responsible for coordinating the strategy (Pakistan) and the coordinating mechanism that will be used for its implementation (Georgia). Also, the subsequent allocation of specific responsibilities under the umbrella coordination mechanism tends to be embedded in the implementation process, including the management of risk (Thailand). In almost all cases, the central bank was assigned the responsibility for managing systemic risk in the financial sector.

### ***2.4. Communicating the trade-off between financial development and systemic risk***

Determining if a given financial sector strategy has adequately considered and communicated trade-offs between the speed of financial development and the degree of systemic risk associated with it—or, for that matter, gauging whether the strategy involves plans to address the trade-off—is challenging, but not impossible. To that end, we examined the strategies to see whether risk and return in development had been explicitly weighed. We noted whether strategies referred to the expectation that the financial system would work well—

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<sup>11</sup> Note that central bank bylaws and regulations could be important examples of implementing measures for the banking system or the entire financial sector when the central bank is also a financial sector regulator and supervisor—see Melecky and Podpiera (2013) on the central bank responsibility for financial sector supervision.

that is, would it allocate resources to the most productive uses and help the real economy, including individuals and firms, manage risks by enhancing productivity, boosting the poverty-reduction effects of growth, and promoting equal opportunity? We then assessed whether the strategies also referred to concerns that overambitious development, excessive risk taking, and malfunctioning risk management on the side of the financial system and its clients could create a breeding ground for costly financial crises. At the other extreme from policy trade-offs are win-win policies that can produce synergic effects and improve financial development and stability in sync. We assess these as well.

Positive country examples that consider the trade-off between financial development and financial stability at different levels of development and under different country circumstances include China, South Africa, and Switzerland. In contrast, countries such as Colombia, Indonesia, and Turkey commit to advancing financial development and managing systemic risk without considering related policy trade-offs in achieving the two goals. In general, the strategies include a lot of numerical analysis on recent trends and changes in the financial sector; however, they lack a comprehensive discussion of trade-offs in general and of the trade-off between financial development and systemic risk in particular. At best, they acknowledge that economic growth is negatively affected by a financial sector that is weak or unable to provide long-term capital. This is a general reference to the performance of the sector in aggregate and not explicit reference to specific systemic risks. More specific discussions of advancing financial inclusion—and its positive effect on poverty alleviation and enhancing shared prosperity—and the possible risks to financial stability, such as those from overindebted households or enterprises, are rarely tackled in the strategies.

### **3. Stylized Facts**

For countries, the national financial sector strategy formulates the policy for the financial sector. However, in our sample, only 29 countries out of the 78 countries (37 percent) have a financial sector strategy. Most national strategies appear in Sub-Saharan Africa and East Asia, while only one country in Latin America and the Caribbean in our sample has one. In the 29 countries, the financial sector strategy was used as the only data

source. In six countries, the national development strategy was used as the data source if it contained sections on financial sector development. The financial inclusion strategy was used for two countries as the data source while the annual reports or strategies of central banks and financial sector supervisors were used for 13 countries—provided they contained sections on financial sector development (not only on the development of the institution). If the financial sector strategy was not available, we used the financial stability report as a complementary source to the national development strategy—together with central banks' or superintendence annual reports or strategies—and the financial inclusion strategy as available. The financial stability report was used as the only data source, if none of the other documents were available.<sup>12</sup> In total, the financial stability report was used in 36 countries.

In our postulation, a well-formulated strategy sets development targets that take into account the associated risks and communicates the country's systemic financial risk appetite (tolerance). In our assessment of strategies—that is, the document or set of documents that represents a national strategy for the financial sector—we asked the yes/no questions listed in the first column of table 1. We have assessed the national strategies for those questions using 0/1 values for no/yes, respectively.

**[Table 1 about here]**

The evidence from our review of strategies indicates that only 65 percent of countries have financial sector strategies with clearly identified goals and that only 27 percent of our sample countries have a quantifiable indicator included in their statement of objectives. In addition, only 56 percent of strategies identify policy tools to support achievement of their goals, while the remaining 44 percent lack any credible policy support. Although most strategies refer to systemic risk in general terms (88 percent), fewer (38 percent) refer to specific indicators of systemic risk, and only about half the strategies (51 percent) identify policy tools for maintaining systemic risk in the financial systems at an acceptable level.

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<sup>12</sup> Note that we do not rate strategies only 0/1; that is, a country does not or does have a strategy. We consider available relevant policy documents that could form a country's financial sector strategy and based on those, we rate the country on a scale from 0 to 10 along the 10 criteria presented.

We further investigate whether the national financial sector strategy clearly assigns the implementation of the targeted financial development at the (identified) acceptable level of systemic risk to individual government agencies in accord with their mandate. For instance, the ministry of finance (or economy) could be responsible for financial development and the central bank for systemic risk supervision (as in Kazakhstan or Moldova). In their financial sector strategies (table 1), the majority of countries (85 percent) broadly identify the implementing government agencies based on their overall mandates. However, less often countries clearly assign responsibility to specific government agencies for implementation of measures to achieve development goals (53 percent) and to maintain systemic risk at an acceptable level (54 percent) in their financial sector strategy.

Only 26 percent of countries have financial sector strategies that discussed specific trade-offs between their financial development goals and management of systemic risk in the financial sector, despite the commitment of many countries to both financial development and systemic risk management (54 percent) within the same strategy document. Overall, 42 percent of countries committed to both advancing financial development and managing systemic risk but did not consider any trade-offs between the two goals. While the strategies involved rich numerical analysis of recent developments in the sector, in general, there was a weak use of quantifiable data in their forward-looking objectives.

#### **4. Benchmarking the Properties of Financial Sector Strategies**

First, we assessed the basic properties of the strategies in 78 countries (see table 1). Then, we constructed five summary variables that we will now model using the regression analysis. Specifically, we constructed a “strategy” variable as the count of ones in the yes/no (0/1) rating of attributes presented in table 1. Similarly, we constructed variables “objective,” “risk,” “implementation,” and “tradeoff” as the count of ones in rating the attributes in table 1 marked with “obj,” “sys,” “imp,” and “trff,” respectively. We used this count variable as our dependent variable in a regression that tries to link selected country characteristics and experience to how countries formulate their financial sector strategies in general, particularly in regard to stated objectives,

systemic risk considerations, implementation planning, and the trade-off between the speed of financial development and systemic risk management.

We model this count variable using a simple ordinary least squares regression with bootstrapped standard errors to properly account for the small-sample properties of our study. In addition, we employ regressors that we make weakly exogenous by using data from periods preceding the dating of financial sector strategies, by taking long-term averages, and by relying on the principle of aggregation:<sup>13</sup>

$$st_i^C = X_i' \beta + \varepsilon_i \quad (1)$$

where  $st_i^C = \{objective, risk, implementation, tradeoff\}$ ,  $X_i$  is a vector of selected country characteristics and experience that could be relevant for the process of formulating the content of national financial sector strategies, and  $\varepsilon_i$  is a likely heteroscedastic disturbance. The subscript  $i$  denotes countries. The list of countries in our sample is reported in Table A2.

We consider four groups of country characteristics: (1) the legal and macroeconomic environment; (2) public governance and institutional structure of financial sector supervision; (3) structural characteristics of the domestic financial sector; and (4) experience of banking crises.<sup>14</sup>

To characterize (1) the legal and macroeconomic environment, we regress the properties of the financial sector strategies on the level of income (*inc0711*), income group (high-, middle-, and low-income countries—HIC, MIC, LIC; *inc3group*), level of inflation (*inflation0711*), and the type of law used in the country (civil, common, custom, religious, and their mixes), capital account openness (*kaopen0610*), and trade openness (*trade0711*). See table A2 in the appendix for a detailed description of the variables, including their sources.

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<sup>13</sup> For example, we assume that overall governance effectiveness in the public sector cannot be significantly influenced by the formulation of financial sector strategies because it relates to all sectors of public policy, only one of which is the financial sector.

<sup>14</sup> Note that for some countries regional characteristics could be important such as those from the European Union or the Eurozone because of countries shared supra-national policies (European Banking Authority, European Systemic Risks Board, and the ECB, among others) particularly in the area of financial stability and prudential oversight. Consider also the regional effort of ASEAN countries to develop joint bond markets. At the global level, common factors influencing implementation of the policy on financial stability could include institutions and standards issues by the Bank for International Settlement, the Financial Stability Board, and International Organization of Securities Commissions.

To characterize (2) public governance and institutional structures of financial sector supervision, we regress the properties of strategies on governance effectiveness (*GE\_PRANK*), regulatory quality (*RQ\_PRANK*), voice and accountability (*VA\_PRANK*), the type of supervisory structure for the financial sector (*ps0610*: the proximity of micro- and macroprudential supervision, *integ0610*: integration of microprudential supervision), and supervisory quality (*sq*). Table A2 contains a detailed description of the variables, including their sources.

In group (3), the structural characteristics of the domestic financial sector, we consider financial depth (average credit to GDP, *cred0711*), the share of bank assets in total assets of the financial system (*bank*), concentration of the financial system (Herfindahl-Hirschman Index, across banking, insurance, and capital markets; *hh*), an index of financial inclusion in savings and credit (*findex1*), a composite index of financial inclusion (*honohan*), the ratio of the number of foreign banks to the total number of banks in the domestic banking sector (*foreignbank0509*), the share of foreign bank assets in total bank assets (*foreignasset0509*), the fraction of banks that are at least 50 percent foreign owned (*forowned05*), the fraction of banks that are at least 50 percent government owned (*govowned05*), and entry barriers for banks (*entrybr*). Table A2 contains a detailed description of the variables, including their sources.

Financially, for (4) the experience of banking crises, we consider, in the regression model, the total number of banking crises a country experienced between 1970 and 2011 (*crisis*), the number of banking crises weighted by year of occurrence (more recent crises receive more weight; *w\_crisis*), a 0/1 dummy if a country experienced a banking crisis at all (*bcrisis*), and a 0/1 dummy if a country experienced repeated banking crises—that is, more than one crisis (*repcrisis*). Table A2 contains a detailed description of the variables, including their sources.

We derive parsimonious version of the regression model using both the general to specific and specific to general approach to capture explanatory variables with highest marginal effects. Using this belt and braces approach should ensure that our parsimonious models are reasonably robust to issues stemming from possible multicollinearity.

## 5. Discussion of Estimation Results

We proceed by discussing the parsimonious regressions for the five attributes of strategies (*strategy*, *objective*, *risk*, *implementation*, *trade-off*) taking into consideration all country characteristics of interest at once (categories 1–4). Because of the limited degrees of freedom available, the overall parsimonious models are chosen by (a) taking the most significant variables from groups 1–4 for each attribute of strategies; (b) checking whether any other variable from any other group can add significantly to the explanatory power of the regression by improving its adjusted R-squared; and (c) excluding further variables from the regression based on (a) and (b) to arrive at a final parsimonious model that maximizes the adjusted R-squared for each attribute of strategies.

*Legal system.* Table 2 shows that characteristics of the national legal system can have an important influence on how countries formulate their national strategies for the financial sector. Countries with legal systems containing any features of civil law tend to have more fuller strategies overall (positive coefficient on *civil* in the *strategy* regression). Moreover, countries with civil-code legal systems focus significantly more on policy implementation and trade-offs between financial development and stability (positive coefficients on *civil* in the *implementation* and *trade-off* regressions). Countries with legal systems based on *common law* plan much better than other countries for *implementation* and to some extent account more often for policy *trade-offs* (positive coefficients on *common* in the *implementation* column and on *anycommon* in the *implementation* and *trade-off* regressions). In addition, countries with legal systems involving any features of a religion-based law tend to address more systemic risk and *trade-offs* in their strategies (positive coefficients on *anyrelig* in the *systemic risk* and *trade-off* regressions). Finally, countries with laws involving a mixed influence from civil, common, custom, and religious legal systems are significantly more likely to focus on financial development objectives and implementation of the strategy (positive coefficients on *mixed* in the *objective* and *implementation* regressions).

[Table 2 about here]

*Macroeconomic environment.* Generally, at higher income per capita, countries tend to focus less on financial development objectives (negative coefficient on *inc0711* in the *objective* regression in Table 2). Moreover, as countries cross standard income thresholds to higher income groups, their strategies become less comprehensive (negative coefficient on *inc3group* in *strategy* regression), focusing less on systemic risk and implementation. This observation could be worrying especially for countries that migrate from the LIC group to the MIC group or from the lower- to the upper-MIC group, because at those stages, financial development needs are still high but exposures to financial risk grow dramatically (trade and capital openness and the size and complexity of the domestic financial sector, for example). Moreover, as countries advance in their macroeconomic management and bring inflation down, they may improve their focus on implementation and on the attention they pay to policy trade-offs (negative but not significant coefficients on *inflation0711* in the *implementation* and *trade-off* regressions).

Greater capital openness is negatively associated with the overall comprehensiveness of strategies that could result from declining focus on financial development objectives once countries become more open to financial flows (negative coefficients on *kaopen0610* in the *strategy* and *objectives* regressions). Greater trade openness is associated with less comprehensive strategies, particularly regarding implementation (negative coefficients on *trade0711* in the *strategy* and *implementation* regressions). At the same time, increasing their trade openness makes countries focus more on policy trade-offs (positive coefficient on *trade0711* in the *trade-off* regression). However, the respective coefficients on capital and trade openness are not significant at common levels.

*Public governance and supervisory structures for the financial sector.* Overall government effectiveness could contribute to more comprehensive financial sector strategies, especially concerning objectives and policy trade-offs. Although these effects contribute to the overall explanatory power of the regressions, they are statistically significant only in the trade-off regression. In contrast, the overall regulatory quality appears negatively associated, at the 10 percent significance level, with the capacity of the country to address policy trade-offs (negative coefficient on *RQ\_PRANK* in the *trade-off* regression). We conjecture that nonfinancial

sectors of public governance might experience less pressure to consider regulatory trade-offs than the financial area. Supervisory structures for the financial sector dropped out of the parsimonious model altogether, perhaps because they are more a consequence of financial sector strategies and more *predicted by* than *predictive of* the attributes of financial sector strategies.

*Financial depth and inclusion.* Countries with deeper credit markets tend to focus more on development objectives, perhaps concentrating on access to a broader range of financial services beyond credit and savings, such as insurance, capital market instruments, and electronic payments (positive coefficient on *credit0711* in the *objective* regression). At the same time, as financial sectors deepen and more people are included in financial services, countries give less attention to financial development objectives, systemic risk management, and implementation (negative coefficients on *honohan2008* in the *objective* and *implementation* regressions and on *credit0711* in the *systemic risk* regression).

*Ownership in the financial sector.* Contrary to common belief, countries with a greater share of foreign ownership in the financial sector (in terms of the number of banks) focus their strategies less on objectives and, to some extent, on policy trade-offs and implementation plans (significantly negative coefficient on *foreignbank0509* in the *objective* regression). With greater foreign bank entry, the domestic policy makers might become more complacent about development objectives and rely on the imported foreign practices and technology to do the job. In contrast, countries with a greater foreign ownership (in terms of assets and number of banks) tend to be more attentive to systemic risk and to address policy trade-offs in their strategies more often (significantly positive coefficient on *foreignbank0509* in the *systemic risk* regression and on *foreignasset0509* in the *trade-off* regression). Interestingly, the share of state ownership dropped out of the factors that in any way significantly affect the attributes of strategies.

*Experience of banking crises.* The experience of past banking crises is significantly associated with more comprehensive financial sector *strategies* (positive coefficient on *w\_crisis* in the *strategy* column), in particular as related to implementation plans and potentially to the overall comprehensiveness of the strategy

(significantly positive coefficient on *w\_crisis* in the *implementation* regression). However, the positive association holds only if the crises are more recent. Because if the banking crises occurred in a more distant past, the fading memory of those events and the ensuing complacency could be associated with much less comprehensive strategies, especially in regard to *implementation* and to a lesser extent to policy *trade-offs* (significantly negative coefficients on *crisis* in *strategy* and *implementation* regressions).

*Development assistance in formulation of financial sector strategies.* In some cases, countries request and receive development assistance on formulating their financial sector strategies. However, it is very difficult to collect consistent data on such development assistance across all agencies that could have provided it. That said, we have strived to include at least some of the data, namely, that on the development assistance provided by the World Bank under the FIRST initiative. Most of the development assistance has been concentrated in Africa and South Asia. When including the 0/1 dummy (not received/received relevant development assistance) in our regressions, we fail to find any significant positive effect of this assistance on the scope and quality of financial sector strategies in addition to the considered country characteristics. This is surprising because such development efforts address, at the minimum, strategic objectives on financial development, and the regression should pick up those efforts. More comprehensive data and further research are needed to reach more affirmative conclusions.

In sum, the scope and characteristics of national strategies for the financial sector are significantly influenced by the type of legal system in the country, its income level and macroeconomic stability, existing financial depth and inclusion, the share of foreign ownership, and the experience of past financial crises. Let us reiterate the most significant results at the 5 percent level. Specifically, if a country's legal system is based on mixed law or on civil, common, or mixed law, it pays more attention to financial development objectives and implementation, respectively, in its strategies. Moreover, countries with legal systems based on civil law and religious law do a better job in addressing trade-offs between financial development and stability. As their per capita income increases, countries pay less attention to development objectives but, surprisingly, to systemic

risk as well. Also, overall effectiveness of public governance can help countries address policy trade-offs in the financial sector.

Furthermore, as financial inclusion increases and national financial systems deepen, country strategies for the financial sector gradually neglect development objectives and systemic risk in formulation of their strategies. However, increasing depth of credit markets also sharpens countries' focus on broader financial development objectives—presumably concerning financial services other than credit alone. Greater foreign ownership intensifies the attention countries pay to the trade-off between financial development and systemic risk management. Experience of past banking crises raises countries' awareness of the challenges in the financial sector and, in particular, stimulates greater planning for implementation of financial sector strategies. However, as the memory of past banking crises fades, crisis experience can become counterproductive and weaken financial sector strategies and planning for implementation. Finally, we do not find any significant positive effect of development assistance on the scope and quality of financial sector strategies, in addition to the considered country characteristics.

Giving due consideration to policy trade-offs, particularly between financial development and management of systemic risk in the financial sector, remains the weakest part of strategies and is more difficult to link to country characteristics.

## **6. Benchmarking Individual Countries against Their Peers**

In this section, we compare financial sector strategies of individual countries to the benchmark estimated by our regression model based on a sample of 78 countries. In this exercise, we compare the actual ratings of country strategies to the rating predicted by the model for a particular country, given its characteristics. We do the same for the total rating that sums all 10 attributes on which we rate the 78 countries in our sample and present the results in a scatter plot in figure 1. We repeat the process for the four components of the total rating—that is, development objectives, systemic risk, implementation planning, and policy trade-offs—and report the results in figure A1 in the appendix.

## [Figure 1 about here]

Figure 1 shows, on the horizontal axis, the actual ratings of national financial sector strategies summed across the 10 criteria that we consider. The model-predicted values based on the experience of 78 countries in our sample are shown on the vertical axis. The model-predicted values constitute a benchmark that can be usefully depicted by the diagonal line in figure 1. The “outperformers” vis-à-vis the estimated benchmark will be located below the diagonal line and to the far right. The “underperformers” will then be located above the diagonal line to the far left. We can see that the group of outperformers includes the Arab Republic of Egypt (EGY), Malaysia (MYS), Pakistan (PAK), South Africa (ZAF), and Switzerland (CHE). Somewhat surprisingly, Egypt and Pakistan seem to appear in this group, perhaps due to unaccounted for development assistance that they received.<sup>15</sup> The group of underperformers includes Belarus (BLR), Canada (CAN), Costa Rica (CRI), Germany (DEU), Morocco (MAR), and Turkey (TUR). Recall that we rate the countries on the comprehensiveness of their strategies, not on actual implementation or achieved outcomes in the financial sector. Note that some countries could be just lucky in navigating their ship without a map (strategy) in the sea of financial development and stability. Recall also that as countries develop they gradually neglect financial development and inclusion. Moreover, dating of the strategy, if possible to establish, could have played a role. Because more recent strategies may have built on lessons learned from the global crisis, they could be more comprehensive and balanced across financial development and stability and focus more on planning for implementation.

The results of similar benchmarking exercises for objectives, systemic risk, implementation, and policy trade-offs are plotted in quadrants (1,1), (1,2), (2,1) and (2,2) of figure A1 in the appendix. Concerning *objectives*, examples of outperformers are Egypt (EGY) and Uruguay (URY), while the sample underperformer is Jordan (JOR). Concerning *systemic risk*, examples of outperformers are South Africa (ZAF), China (CHN),

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<sup>15</sup> Further investigation revealed that Egypt received development assistance to develop its financial sector strategy from the African Development Bank, USAID, and the World Bank, at different stages. Pakistan developed its strategy with technical assistance from the Asian Development Bank, International Monetary Fund, and the Department for International Development of the UK. That is, both countries benefited from multi-donor assistance. Collecting comprehensive data on development assistance can help assess the impact of different development assistance on the quality and scope of national financial sector strategies in the future.

and, more recently, Latvia (LVA), while the underperformers are Costa Rica (CRI) and Lebanon (LBN). Concerning *implementation*, outperformers are Egypt (EGY) and Georgia (GEO), while the underperformer is Germany (DEU). Here, a more in-depth account of institutional context and organization of public administration would explain some of the observed gaps. Finally, concerning *trade-offs*, the sample outperformers are Peru (PER) and South Africa (ZAF), while the sample underperformers are the Netherlands (NLD) and Slovenia (SVN). Note that the countries that do not pay much attention to financial development objectives will almost inevitably fail to properly account for the trade-off between financial development and stability.

## 7. Conclusion

In this paper, we assessed a sample of 78 countries on the comprehensiveness of their financial sector strategies. We did so against 10 predefined attributes that a comprehensive financial strategy should have, in our view. Broadly, these attributes concern definition of financial development objectives, identification of the systemic risk involved in achieving the set objectives, consideration of trade-offs between achieving development objectives and managing systemic risk in the financial sector at an acceptable level, and an outline of implementation plans for the financial sector strategy.

We found that only 65 percent of the 78 countries had financial sector strategies with clearly identified goals and that only 27 percent had a quantifiable indicator included in their statement of objectives. Given that only 56 percent of strategies identify policy tools to support the achievement of the set goals, 44 percent of strategies rely on wishful thinking rather than on credible policy support. Although most strategies refer to systemic risk in general terms (88 percent), many fewer documents (38 percent) refer to specific indicators of systemic risk, and only about a half (51 percent) of the strategies identify policy tools to manage that risk. The majority of countries (85 percent) broadly identify the government agencies responsible for implementation of their strategies based on their overall mandates. However less often, countries clearly assign responsibility to specific government agencies for implementation of measures to achieve development goals (53 percent) and to

manage systemic risk at an acceptable level (54 percent). Many countries commit to both development and systemic risk management (54 percent) in their strategy; however, only 26 percent address trade-offs between their financial development goals and management of systemic risk in their strategies. Overall, 42 percent of countries commit to both advancing financial development and managing systemic risk but do not consider any tradeoffs between the two goals.

In addition to assessing and rating the financial sector strategies of 78 countries and creating a new data set, we benchmarked the rated strategies using a regression model. We found that several country characteristics systematically determine how comprehensive national strategies for the financial sector could be. These characteristics include: the type of legal system, income per capita, effectiveness of public governance, financial depth, financial inclusion, foreign ownership of banks, and experience of banking crises. Using the estimated regression model, we benchmarked financial sector strategies of individual countries to their peers. Specifically, we compared the actual ratings of country strategies to the rating predicted by the model for a particular country, conditioning on its various characteristics. Through this benchmarking exercise, we could identify some outperformers such as Egypt, Malaysia, Pakistan, South Africa, and Switzerland in formulating comprehensive financial sector strategies. In contrast, Belarus, Canada, Costa Rica, Germany, Morocco, and Turkey could be considered underperformers based on our criteria. We also conducted a similar benchmarking exercise for different subcomponents of national financial sector strategies. In addressing the trade-off between financial development and stability, we could identify Peru and South Africa as likely outperformers.

## References

Adasme, Osvaldo, Giovanni Majnoni, and Myriam Uribe. 2006. "Access and Risk: Friends or Foes? Lessons from Chile." Policy Research Working Paper 4003, World Bank, Washington, DC.

- Allen, Franklin, Thorsten Beck, Wolf Wagner, Philip Lane, Dirk Schoenmaker, and Elena Carletti. 2011. *Cross-Border Banking in Europe: Implications for Financial Stability and Macroeconomic Policies*. London: Centre for Economic Policy Research (CEPR).
- Anginer, Deniz, Asli Demirguc-Kunt, and Min Zhu. 2012. "How Does Bank Competition Affect Systemic Stability?" Policy Research Working Paper 5981, World Bank, Washington, DC.
- Apostoaie, Constantin-Marius, Stanislav Percic, Vasile Cocris, Dan Chirlesan. 2014. "Research on the Credit Cycle and Business Cycle with a Focus on Ten States from Central, Eastern, and Southeastern Europe" *Emerging Markets Finance and Trade*, volume 50, supplement 4, pages 63-77, July.
- Arcand, Jean-Louis, Enrico Berkes, and Ugo Panizza. 2012. "Too Much Finance?" IMF Working Paper WP/12/161, International Monetary Fund, Washington, DC.
- BCBS (Basel Committee on Banking Supervision). 2011. "Basel III: A Global Regulatory Framework for More Resilient Banks and Banking Systems (rev.)." Bank for International Settlements, Basel.
- Beck, Thorsten, and Olivier De Jonghe. 2013. "Lending Concentration, Bank Performance and Systemic Risk Exploring Cross-Country Variation." Policy Research Working Paper 6604, World Bank, Washington, DC.
- Beck, Thorsten, and Erik Feyen. 2013. "Benchmarking Financial Systems: Introducing the Financial Possibility Frontier." Policy Research Working Paper 6615, World Bank, Washington, DC.
- Buncic, Daniel, and Martin Melecky. 2013. "Equilibrium credit: the reference point for macroprudential supervisors." Policy Research Working Paper Series 6358, World Bank. Washington, DC.
- Buncic, Daniel and Melecky, Martin. 2013. "Macroprudential stress testing of credit risk: A practical approach for policy makers," *Journal of Financial Stability*, Elsevier, vol. 9(3), pages 347-370.
- Brown, Martin. 2013. "The transmission of banking crises to households: lessons from the 2008-2011 crises in the ECA region." Policy Research Working Paper 6528, World Bank. Washington, DC.

BRSS III 2008. Banking Regulation and Supervision Survey. Database of the World Bank available at:  
<http://econ.worldbank.org/WBSITE/EXTERNAL/EXTDEC/EXTRESEARCH/0,,contentMDK:20345037~pagePK:64214825~piPK:64214943~theSitePK:469382,00.html>.

Central Intelligence Agency. 2012. *The World Factbook*. Washington, DC: CIA.

Chinn, Menzie D., and Hiro Ito. 2006. "What Matters for Financial Development? Capital Controls, Institutions, and Interactions." *Journal of Development Economics* 81 (1): 163–92.

Cihak, Martin, Asli Demirguc-Kunt, Erik Feyen, and Ross Levine. 2012. "Benchmarking Financial Systems around the World." Policy Research Working Paper 6175, World Bank, Washington, DC.

Cihak, Martin, and Parabal Singh. 2013. "An Analysis of National Financial Inclusion Strategies." Blog post at All about Finance, [blogs.worldbank.org/allaboutfinance/analysis-national-financial-inclusion-strategies](http://blogs.worldbank.org/allaboutfinance/analysis-national-financial-inclusion-strategies).

Committee on International Economic Policy and Reform. 2012. "Banks and Cross-Border Capital Flows: Policy Challenges and Regulatory Responses." Brookings Institution, Washington, DC.

Cull, Robert, Asli Demirguc-Kunt, and Timothy Lyman. 2012. "Financial Inclusion and Stability: What Does Research Show?" CGAP Brief 71305, Consultative Group to Assist the Poor, Washington, DC.

Cull, Robert, and Martínez Pería, María Soledad, 2013. "Bank ownership and lending patterns during the 2008–2009 financial crisis: Evidence from Latin America and Eastern Europe," *Journal of Banking and Finance*, Elsevier, vol. 37(12), pages 4861-4878.

Cull, Robert, and Soledad Martinez Peria, Maria, 2010. "Foreign bank participation in developing countries: what do we know about the drivers and consequences of this phenomenon?" Policy Research Working Paper Series 5398, The World Bank.

Demirguc-Kunt, Asli, and Enrica Detragiache. 2005. "Cross-Country Empirical Studies of Systemic Bank Distress: A Survey." Policy Research Working Paper 3719, World Bank, Washington, DC.

Dowd, Kevin. 2009. "Moral Hazard and the Financial Crisis." *Cato Journal* 29 (1): 141–66.

Eller, Markus, Haiss, Peter, and Steiner, Katharina. 2006. "Foreign Direct Investment in the financial sector and economic growth in Central and Eastern Europe: The crucial role of the efficiency channel." *Emerging Markets Review* 7(4): 300-319.

FinStats 2013. Database of Financial Sector Development Indicators. World Bank. Washington, D.C.

Global Financial Development Database, World Bank, Washington, DC, <http://data.worldbank.org/data-catalog/global-financial-development>.

Han, Rui, and Martin Melecky. 2013. "Financial Inclusion for Financial Stability: Access to Bank Deposits and the Growth of Deposits in the Global Financial Crisis." Policy Research Working Paper 6577, World Bank, Washington, DC.

Haiss, Peter, Juvan, Hannes, and Mahlberg, Bernhard, 2010. "The Impact of Financial Crises on the Finance-Growth Relationship: A European Perspective (October 10, 2011). Available at SSRN: <http://ssrn.com/abstract=1505968>.

Honohan, Patrick. 2008. "Cross-Country Variation in Household Access to Financial Services." *Journal of Banking & Finance* 32 (11): 2493–2500.

—. 2010. "Partial Credit Guarantees: Principles and Practice." *Journal of Financial Stability* 6 (1): 1–9.

Laeven, Luc, and Fabian Valencia. 2012. "Systemic Banking Crises Database: An Update." IMF Working Paper WP/12/163, International Monetary Fund, Washington, DC.

Loayza, Norman V., and Romain Ranciere. 2006. "Financial Development, Financial Fragility, and Growth." *Journal of Money, Credit and Banking* 38 (4): 1051–76.

Melecky, Martin, and Podpiera, Anca Maria, 2013. "Institutional structures of financial sector supervision, their drivers and historical benchmarks," *Journal of Financial Stability*, Elsevier, vol. 9(3), pages 428-444.

Martin Melecky, Anca Maria Podpiera, 2012. "Macroprudential Stress-Testing Practices of Central Banks in Central and Southeastern Europe: Comparison and Challenges Ahead," *Emerging Markets Finance and Trade*, M.E. Sharpe, Inc., vol. 48(4), pages 118-134, July.

Pagano, Marco. 2012. "Finance: Economic Lifeblood or Toxin?" CSEF Working Paper 326, Centre for Studies in Economics and Finance, University of Naples, Italy.

Ranciere, Romain, Aaron Tornell, and Frank Westermann. 2006. "Decomposing the Effects of Financial Liberalization: Crises vs. Growth." NBER Working Paper 12806, National Bureau of Economic Research, Cambridge, MA.

———. 2008. "Systemic Crises and Growth." *Quarterly Journal of Economics* 123 (1): 359–406.

Reinhart, Carmen M., and Kenneth S. Rogoff. 2009. "The Aftermath of Financial Crises." NBER Working Paper 14656, National Bureau of Economic Research, Cambridge, MA.

Rousseau, P., Wachtel, P., 2011. What is happening to the impact of financial deepening on economic growth? *Economic Inquiry* 49(1), 276-288.

World Bank. 2013. "The Role of the Financial System in Managing Risk: More Financial Tools, Fewer Financial Crises." In *World Development Report 2014: Risk and Opportunity: Managing Risk for Development*, chap. 6. Washington, DC: World Bank.

## Figures and Tables in the Main Text

**Table 1: Summary Statistics of Selected Characteristics of Financial Sector Strategies**

<b>Property of Financial Sector Strategy</b>	<b>Benchmark for 0/1 Classification (0/1 Dummy Variable)</b>	<b>Mean</b>	<b>Std. Error</b>	<b>90% CI</b>
Clear development goals set (obj1)	Is the objective clearly identified somewhere in the strategy document?	65%	5%	56% 74%
Development goals quantified (obj2)	Is the strategic objective quantified? Or are the development targets for the financial sector quantified?	27%	5%	19% 35%
Policy tools to achieve goals identified (obj3)	Does the document identify the policy tools to support targeted development goals or greater development of financial (banking) sector in general?	56%	6%	47% 66%
Systemic risk associated with achieving development goals identified (sys1)	Does the document refer to systemic risk and macroprudential regulation associated with the strategy?	88%	4%	82% 95%
Systemic risk quantified (sys2)	Is the systemic risk somehow quantified, e.g., with reference to solvency risk, liquidity risk, exchange rate risk, or other types of systemic risks?	38%	6%	29% 48%
Policy tools to manage systemic risk identified (sys3)	Does the document make reference to policy tools to manage bank capital adequacy, liquidity position, lending allocation, and banking sector risk taking?	51%	6%	42% 61%
Agencies to implement the strategy identified (imp1)	Does the document make reference to which agency shall implement this strategy? Or how the strategy will be implemented? Even if the implementation is intrinsic, based on existing mandates (e.g., central bank is the systemic risk regulator).	85%	4%	78% 91%
Agencies responsible for achieving development goals assigned (imp2)	Does the document explain how banking sector development goals of the strategy will be implemented?	53%	6%	43% 62%
Agencies to manage systemic risk assigned (imp3)	Is a macroprudential policy committee established, or a similar body to implement macroprudential regulation? Or does the government at least refer to using macroprudential tools to control systemic risk beyond individual bank risk? And if so, can it be implied that the bank supervisor will be involved in this?	54%	6%	44% 63%
Trade-off between development and systemic risk is communicated (trff1)	Does the strategy acknowledge that stricter management of systemic risk, e.g., through additional capital charges, could reduce banking sector development and financial inclusion? Or does the strategy state that the government intends to be less conservative in managing systemic risk compared to its peers to achieve its relatively more ambitious development goals?	26%	5%	17% 34%

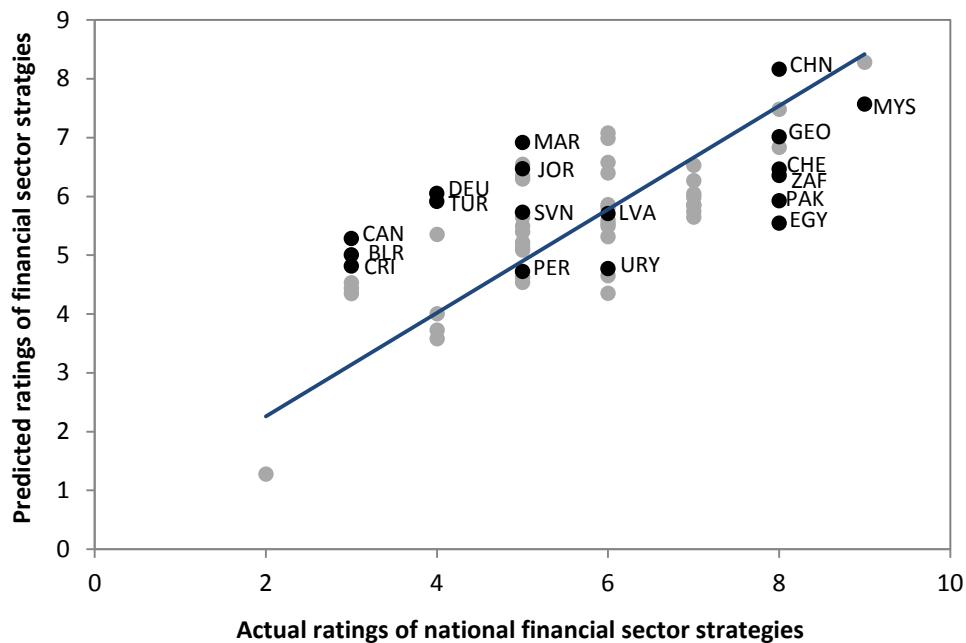
*Source:* Authors' review of financial sector strategies in 78 countries.

**Table 2: Parsimonious Benchmark Models for National Financial Sector Strategies**

Category of Country Characteristics	Independent Variables	Dependent Variable				
		Strategy	Objective	Systemic Risk	Implementation	Trade-off
<b>Legal system</b>	civil	2.403* (0.0939)			0.860** (0.0322)	0.465*** (0.00237)
	anycivil				0.843* (0.0863)	
	common	1.825 (0.289)			1.651*** (0.00126)	
	anycommon				0.522* (0.0627)	0.258* (0.0678)
	anyrelig	0.841 (0.329)	-0.701 (0.162)	0.523* (0.0843)	0.471 (0.259)	0.374*** (0.00620)
	mixed	2.621 (0.121)	0.849** (0.0395)	-0.368 (0.224)	1.418*** (0.00619)	
	inc0711	-0.515 (0.245)	-0.495** (0.0160)			
<b>Macroeconomic environment</b>	inc3group	-1.373* (0.0557)		-1.080*** (4.81e-08)	-0.524* (0.0860)	
	inflation0711				-0.0623 (0.157)	-0.0246 (0.216)
	kaopen0610	-0.270 (0.300)	-0.145 (0.259)			
	trade0711	-0.00836 (0.152)			-0.00304 (0.174)	0.00205 (0.106)
<b>Public governance and supervisory structures in the financial sector</b>	GE_PRANK	0.0508 (0.100)	0.0171 (0.200)			0.0150** (0.0286)
	RQ_PRANK					-0.0132* (0.0655)
	VA_PRANK	-0.0225 (0.279)				
<b>Financial depth and inclusion</b>	cred0711	0.00571 (0.378)	0.0127*** (0.00106)	-0.00684** (0.0131)		
	honohan2008	-0.0209 (0.161)	-0.0228** (0.0293)		-0.0125* (0.0945)	
	foreignbank0509	0.00595 (0.623)	-0.00826* (0.0932)	0.00683* (0.0954)		-0.00430 (0.191)
<b>Ownership in the financial sector</b>	foreignasset0509				-0.000449 (0.862)	0.00549*** (0.00951)
<b>Experience of banking crisis</b>	w_crisis	120.2* (0.0918)			74.01*** (0.00245)	21.34 (0.178)
	crisis	-119.1* (0.0922)			-73.01*** (0.00254)	-21.23 (0.176)
	bcrisis			0.134 (0.405)		
<b>Other</b>	FIRST			-0.504 (0.213)		
	Constant	9.756* (0.0545)	5.443*** (6.09e-05)	3.927*** (0)	1.901** (0.0360)	-0.207 (0.506)
	Observations	61	62	66	62	67
	R-squared	0.489	0.551	0.446	0.463	0.414
	Adjusted R-squared	0.318	0.484	0.379	0.318	0.297

*Note:* P-values based on bootstrapped standard errors in parentheses. \*\*\* p<0.01, \*\* p<0.05, \* p<0.1.

**Figure 1. Actual and Model Predicted Values of Strategy Ratings**



*Source:* Authors' calculations.

## Appendix

**Table A1: List of Countries in the Sample**

Afghanistan	Chile	Guatemala	Kosovo	Morocco	Rwanda	Thailand
					Saudi	
Armenia	China	Honduras	Kyrgyzstan	Mozambique	Arabia	Turkey
					Sierra	United Arab
Australia	Colombia	Hungary	Lao	Namibia	Leona	Emirates
Bangladesh	Costa Rica	India	Latvia	Nepal	Singapore	Uruguay
Belarus	Croatia	Indonesia	Lebanon	Netherlands	Slovakia	Vietnam
	Czech			New		
Bhutan	Republic	Iraq	Lithuania	Zealand	Slovenia	Zambia
					South	
Bolivia	Egypt	Ireland	Lybia	Niger	Africa	
Botswana	El Salvador	Israel	Malaysia	Pakistan	Spain	
Brazil	England	Japan	Maldives	Peru	Sri Lanka	
Bulgaria	Estonia	Jordan	Mauritania	Poland	Switzerland	
Cambodia	Georgia	Kenya	Mexico	Portugal	Syrian	
Canada	Germany	Korea	Moldova	Romania	Tajikistan	

**Table A2: Description of Variables and Their Data Sources**

Variable name	Description	Source
strategy	Sum of 10 indicators from 4 categories: objective, systemic risk, implementation, and trade-off.	Authors' calculation based on the analysis of the national financial sector strategies
objective	Sum of 3 indicators of objective: obj1+obj2+obj3.	Authors' calculation based on the analysis of the national financial sector strategies
risk	Sum of 3 indicators of systemic risk: sys1+sys2+sys3.	Authors' calculation based on the analysis of the national financial sector strategies
implementation	Sum of 3 indicators of implementation: imp1+imp2+imp3.	Authors' calculation based on the analysis of the national financial sector strategies
tradeoff	Trade-off indicator.	Authors' calculation based on the analysis of the national financial sector strategies
inc3group	Income group category (1:HIC; 2:MIC, 3:LIC).	World Development Indicators 2013
inc0711	Ln transformed of average GNI per capita from 2007 to 2011.	World Development Indicators 2013
inflation0711	Average inflation from 2007 to 2011 as measured by the consumer price index.	World Development Indicators 2013
civil	Dummy variable that takes the value 1 if the type of legal	Authors' calculation based on

	system of the country is a civil law system and zero otherwise.	<i>The World Factbook</i> (CIA 2012)
anycivil	Dummy variable that takes the value 1 if the type of legal system of the country is a civil law and a mixed system with civil law, zero otherwise.	Authors' calculation based on <i>The World Factbook</i> (CIA 2012)
common	Dummy variable that takes the value 1 if the type of legal system of the country is a common law and zero otherwise.	Authors' calculation based on <i>The World Factbook</i> (CIA 2012)
anycommon	Dummy variable that takes the value 1 if the type of legal system of the country is a common law and a mixed system with common law, zero otherwise.	Authors' calculation based on <i>The World Factbook</i> (CIA 2012)
anycustom	Dummy variable that takes the value 1 if the type of legal system of the country is a mixed system with customary law and zero otherwise.	Authors' calculation based on <i>The World Factbook</i> (CIA 2012)
anyrelig	Dummy variable that takes the value 1 if the type of legal system of the country is a mixed system with religious law and zero otherwise.	Authors' calculation based on <i>The World Factbook</i> (CIA 2012)
mixed	Dummy variable that takes the value 1 if the type of legal system of the country is a mixed system and zero otherwise.	Authors' calculation based on <i>The World Factbook</i> (CIA 2012)
kaopen0610	The 2008 Chinn-Ito index measuring a country's degree of capital account openness (average from 2006 to 2010).	Chinn and Ito 2006, index updated in 2013
trade0711	Average trade as a percentage of GDP from 2007 to 2011.	World Development Indicators 2013

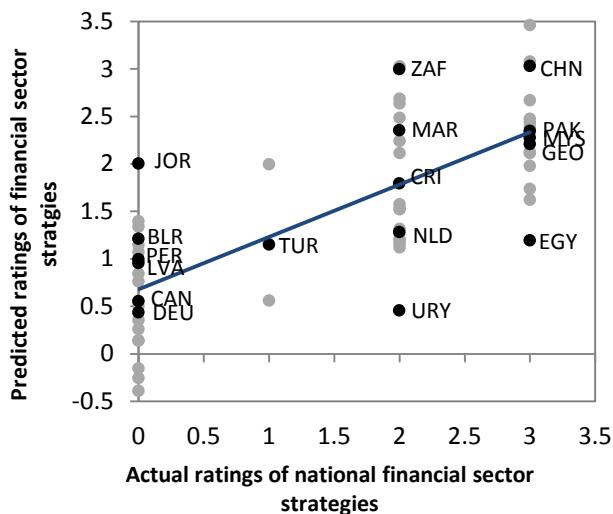
GE_PRANK	Government effectiveness in 2011.	Worldwide Governance Indicators (WGI) 2012
RQ_PRANK	Regulatory quality in 2011.	Worldwide Governance Indicators 2012
VA_PRANK	Voice and accountability in 2011.	Worldwide Governance Indicators 2012
sq	Supervisory quality.	Replicated from Anginer, Demircuc, and Zhu 2012, based on BRSS III 2008
ps0610	Average from 2006 to 2010 of a dummy variable that takes the value 1 if the prudential supervision is within the central bank and zero otherwise.	Melecky and Podpiera, 2012
integ0610	Average from 2006 to 2010 of a dummy variable that takes the value 1 if the microprudential supervision is within the central bank or FSA [Financial Supervisory Authority] and zero otherwise.	Melecky and Podpiera, 2012
cred0711	Average credit to GDP from 2007 to 2011.	FinStats 2013
bank	Average share of banks in the financial system composed of banks, insurance companies, and stock market from 2005 to 2010.	Authors' calculation using the Global Financial Development Database 2012
hh	Herfindahl-Hirschman Index (HHI) calculated based on banks, insurance companies, and stock market.	Authors' calculation using the Global Financial Development Database 2012
findex1	Measure of financial inclusion on credit and savings data.	Authors' calculation using the

honohan	Honohan (2008) composite measure of access to financial services.	Honohan 2008
foreignbank0509	Average percentage of foreign banks among total banks from 2005 to 2009.	Global Financial Development Database 2012
foreignasset0509	Average percentage of foreign bank assets among total bank assets from 2005 to 2009.	Global Financial Development Database 2012
forowned05	The fraction of banks that are 50% or more owned by foreign investors.	BRSS III 2008
govowned05	The fraction of banks that are 50% or more owned by the government.	BRSS III 2008
entrybr	Entry barrier for banks.	BRSS III 2008
crisis	Total number of systemic banking crises from 1970 to 2011.	Leaven and Valencia 2012
w_crisis	Crises weighted by year of occurrence/2011.	Authors' calculation using Leaven and Valencia 2012
bcrisis	Dummy variable that takes the value 1 if the country has experienced at least one banking crisis and zero otherwise.	Authors' calculation using Leaven and Valencia 2012
repcrisis	Dummy variable that takes the value 1 if the country has repeated banking crises (2) and zero otherwise.	Authors' calculation using Leaven and Valencia 2012
FIRST	Dummy variable that takes the value 1 if the country received FIRST funding to prepare its financial sector strategy and zero otherwise.	FIRST

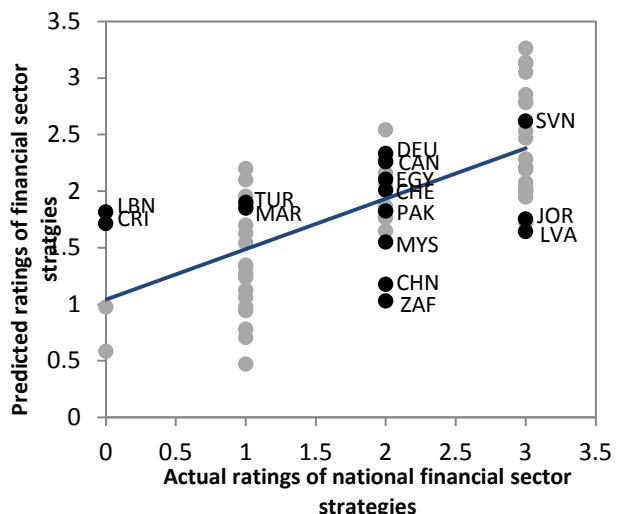
**Figure A1. Actual and Model Predicted Ratings of National Financial Sector Strategies**

Predicted ratings of financial sector strategies

### Objective

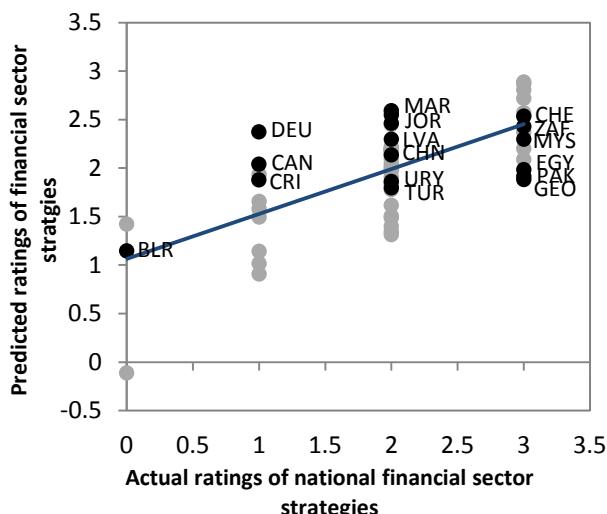


### Systemic Risk

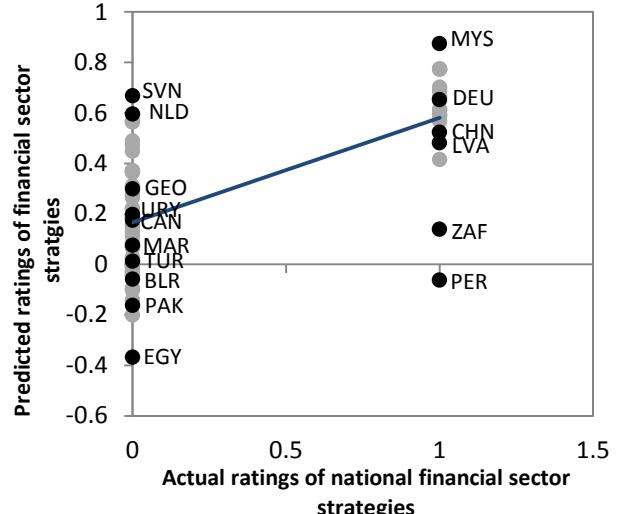


Predicted ratings of financial sector strategies

### Implementation



### Trade-off



Source: Authors' calculations.