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IES Working Paper: 6/2012



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# International banking standards in emerging markets: testing the adaptation thesis in the European Union

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## **Abstract:**

This paper compares the bank regulatory regimes in the enlarged European Union in order to test the thesis claiming that international banking standards need to be adapted to emerging market circumstances. On the basis of World Bank surveys, we compile structural indices for the 10 post-communist EU members (emerging markets) as well as 17 advanced EU economies and compare them using Bayesian statistical procedures. Our findings show that there were systematic and significant differences, two-thirds of which can be explained by 8 of the 52 structural characteristics. The new member states regulatory regimes are more rule-based and leave less discretion for authorities, which is consistent with the thesis that the emerging market regulatory regimes — including those within the EU — needed to compensate for limited regulatory resources and higher political and economic volatility. Hence, the new generation of international banking standards should recognize these limitations.

**Keywords:** banking, emerging markets, European Union, international standards, regulation

**JEL:** G21, K23, P51

Regulatory reforms of the international financial markets are driven by crises that compel policy-makers to overcome difficulties of transnational policy coordination and agree to joint-rules aiming to prevent repetition of similar crises in future. The outcomes of such agreements tend to be codified as international regulatory standards. Such standards inevitably impose one-size-fits-all regulatory principles on very diverse economies, hence inviting the debate whether and how they should be adapted to specific local circumstances (see Goldstein 1997, Chang 2007, for example). The key distinction in this debate is often drawn between the specifics of advanced and emerging market economies.

International banking standards are adopted by the Basel Committee on Banking Supervision (BCBS) — G10 sponsored body hosted at the Bank for International Settlements — since early 1980s (see Kapstein 1989, Wood 2005). Standards are voluntary and non-binding, but they are adopted world-wide due to functional pressures for regulatory convergence and due to their promotion by international organizations such as the Financial Stability Board, IMF and the World Bank (see Norton 2007, Posner 2009). The BCBS adopts them by unanimous consensus of its members, who represented 13 advanced economies till 2000s, when it expanded to 27 members, including 10 large emerging market economies. Hence, for most of its history the international banking standards reflected primarily policy preferences of the most advanced economies (Tarullo 2008, Chang 2005).

International banking standards provide a crucial input for the formulation of European Union's directives that stipulate common rules for the single market in financial services. Since the Eastern enlargement, the EU consist of advanced economies among the old members as well as emerging market economies among the new members. Therefore, the question whether the international standards are adapted for emerging markets is as relevant within the EU as on the global level.

The EU provides a suitable setting for the empirical testing of the adaptation thesis. On the one hand, it strives to harmonize national regulatory frameworks, but on the other, it needs to recognize the diversity of financial sectors, including the differences between the advanced and emerging economies. We test the adaptation thesis by asking whether there are any systematic differences between the bank regulatory regimes of the old and new EU member states and whether these differences are related to those characteristics of the regulatory regime that compensate for the differences between advanced and emerging market policy environments.

Our testing relies on the comparison of a structural index summarizing 52 characteristics of national bank regulatory regimes in 2003 and 2006. Using a Bayesian testing procedure, we find that the bank regulatory regime in the EU emerging economies (EU10) differs on average from the regimes present in the 17 advanced economies of the old EU members (EU17)<sup>□1</sup>. The analysis of differences in individual parameters of their regulatory regimes suggests that the EU10 countries provide their regulators with less discretion and rely on simpler rules that are easier to enforce. We interpret this observation as evidence of the EU10 desire to enhance credibility of their regulatory regimes in the emerging market environment characterized by relative lack of resources and higher political and economic volatility.

The paper starts with a review of the literature on implementation of international regulatory standards that argues that they need to be adapted to specifics of economic and institutional environment in emerging economies. The next section notes that the EU regulatory framework — despite its harmonizing aspirations — preserves policy space for adaptation to national circumstances as is argued by the literature on differentiated integration. The section on comparative analysis starts with the formulation of the hypothesis that is evaluated using data from the World Bank Banking Surveys. The conclusion summarizes our findings and discusses their relevance for future regulatory reforms.

## **1. Regulating banks in emerging markets: empirics and theory**

The characteristic feature of the global debate on international financial regulation is the so called regulators' dilemma: how to enjoy the benefits of international economic activity, while containing the risks and their impacts on the domestic economy (Kapstein 1989). Following the disintegration of the Bretton-Woods exchange rate system, large banks were motivated for foreign expansion, which was also facilitated by the new communication technologies and domestic deregulations. However, occasional crises revealed that the global environment increased the risks of contagion and instability that could spread quickly across many countries and banks. The international banking standards were seen as way of reducing the likelihood and impacts of such crises (Wood 2005).

The most important of these standards is the Basel Capital Accord from 1988, updated in 1996 and completely redefined in 2004 and updated again in 2011 to reflect some lessons of the crisis. Despite its voluntary nature, over 150 countries adopted it (Norton 2007). The perceived success of the Basel Accord was replicated with other international standards that formulate rules for various technical aspects of banking ranging from accounting and auditing, to payment systems and financial infrastructures. The Financial Stability Board now supports 12 such standards (FSB 2011), including the Core principles of effective banking supervision that were introduced by BCBS in 1997 and updated in 2006.

The international standards became a natural benchmark for regulatory reforms around the world. Their diffusion was supported by the technical assistance programs of international financial institutions and compliance was imposed on many countries as part of the conditionality attached to IMF and World Bank lending (Norton 2007). After the Asian financial crisis in 1997, the World Bank and IMF developed the Financial Sector Assessment Program and the accompanying Reports on Observance of Standards and Codes, comparing regulatory

frameworks of nearly all countries to these benchmarks. These reports also found their way into the EU pre-enlargement conditionality, because the Commission utilized evaluations of international financial institutions in its annual assessments of candidates' progress.

The debate about suitability of international standards for developing and transition economies began immediately after their formulation (World Bank 1989, Long 2002, Chang 2005). Although the international standards, 'best practices', and model laws became a staple of capacity building programs in emerging economies, they were not universally successful. The most important problem seemed to be that mere transplanting of standards into the national legal system did not lead to substantive improvements. They lacked the connection to the existing legal and policy infrastructure of the country and were too difficult to enforce (Berkowitz et al. 2003). Such findings led to calls for adaptation that would on one hand preserve the positive effects of global regulatory convergence, but on the other recognize the specifics of local circumstances in emerging markets.

The distinction between advanced and emerging economies can be reduced to three interrelated factors.<sup>12</sup> The most obvious difference is that emerging markets are simply poorer than advanced economies in terms of GDP per capita. They can devote less resources to regulation and thus may prefer rules that are easier and cheaper to monitor and enforce. Secondly, the economic environment of emerging markets is generally more volatile. They are regarded as 'emerging' due to faster economic growth and convergence with developed world, but the growth tends to be interrupted by downturns and crises more often. The volatility makes it more difficult to manage and supervise risks in banks, demanding more regulation that increases banks' capacity to withstand shocks. Thirdly, emerging economies tend to be emerging polities at the same time. Their institutional and political systems are less consolidated and hence more likely to be disrupted by direct political interference or undermined by corruption. In short, compared to



their peers in advanced economies, the emerging market regulators are likely to be more resource constrained and operate in more volatile political and economic environment.<sup>□3</sup>

The policy literature recognizes these differences and calls for adaptation of international standards, but rarely progresses towards more specific suggestions (see World Bank 1996, 2002, Goldstein 1997:22, Stiglitz 2001, Mishkin 2006:129). Goldstein (1997) favors more transparency and higher capital and reserve buffers to make banks more robust in volatile environment. The World Bank (1997) calls for less-resource intensive regulations based on simple and easy to observe indicators that compensate for specific institutional deficiencies such as inefficient bankruptcy procedures (World Bank 2002). However, there is clearly a need for more empirical comparisons providing additional suggestions.

The adaptation thesis also received some attention in literature derived from the theory of regulation in economics, which applies a mechanism design framework and pays particular attention to incentives of market participants, regulators as well as their political supervisors. It develops theoretical models that specify the policy relevant differences between advanced and emerging markets, starting from the assumption that all regulations are essentially incomplete contracts, but they are less incomplete in advanced economies (Estache and Wren-Lewis 2009). Laffont's model (2005) specifies three differences between the advanced and developing economies and integrates them into existing industry-specific models of regulation.<sup>□4</sup> He assumes that: (i) the limited resources make it difficult to attract and retain highly skilled financial professionals on the existing civil pay scales, (ii) the volatile political environment translates to limited accountability that can manifest itself in regulatory capture and corruption, and (iii) the limited commitment to regulations as financial and auxiliary laws are unsettled and change very often. These assumptions are operationalized through various parameters of the baseline models of regulation, which then suggest that emerging market circumstances introduce new policy

trade-offs that are much less relevant in advanced economies. Hence, Laffont provides theoretical justification for the adaptation thesis (2005: xix).

The scholarly literature is, however, no more precise than the policy one in suggesting specific adaptations.<sup>15</sup> Neither, it fully address the question whether adaptations are idiosyncratic to each and every developing economy, or shared across groups of countries such as emerging markets. These are empirical questions requiring micro-institutional comparative analysis. However, before proceeding to the comparison, we briefly review the scope for such adaptations within the EU.

## **2. Differentiated integration in the enlarged Union**

The Eastern enlargements in 2004 and 2007 brought together advanced economies of 'old' Europe and emerging economies from 'new' post-communist Europe within the single regulatory framework. During the enlargement process, the new member states were expected to meet the Copenhagen criteria requiring all members to achieve "stability of institutions guaranteeing ... functioning market economy as well as the capacity to cope with competitive pressure and market forces within the Union ... [and the] ability to take on the obligations of membership including adherence to the aims of political, economic and monetary union" (European Council 1993). Specifically, the functioning market economy criterion included a requirement for "an adequate legal system (including a system of property rights, enforceability of laws/contracts) and a sufficiently developed financial sector" (Commission 2006). However, meeting these criteria does not necessarily imply full harmonization preempting any adaptation of EU rules to emerging market specifics of new member states.

The EU developed mechanisms to accommodate economic and institutional diversity on several levels. Its primary legislation — the Treaty — includes an article allowing for temporary derogation on the basis of "the extent of the effort that certain economies showing differences in

development will have to sustain" (Article 27 of TFEU). However, no EU10 country asked for any derogation with regard to banking regulation. The secondary legislation — the EU banking directives — also provides member states with room for adaptations as they stipulate only minimal harmonized standards and leave other aspects for mutual recognition. At the same time, the differences in transposition and implementation are constrained by the Commission's monitoring and potential ruling of the European Court of Justice that can forbid adaptations not consistent with the directive.<sup>□6</sup>

The literature on differentiated integration provides plentiful classifications of national differences in adoption of EU rules, but few empirical assessments (see Holzinger and Schimmelfennig 2012 for recent review). Stubb (1996) distinguished among a (i) multi-speed integration that provides member states not able or willing to comply immediately with a temporary derogation, (ii) variable geometry that allows countries to opt out indefinitely due to large political, cultural and economic differences, and, finally, (iii) integration à la carte, whereby member states maintain a common set of objectives, but some of them choose to integrate more closely in specific policy areas. The adaptations to the EU10 circumstances would thus represent a case of multi-speed integration; they are expected to disappear during the process of economic and political convergence that erases differences between advanced and emerging economies.<sup>□7</sup>

Andersen and Sitter (2006) point out that despite normative commitment to integration, the differences in organizational capacity and domestic pressures against integration produce differences in the de facto integration that extend beyond the de iure differentiation. They create a fourth-fold typology. First type is the homogenous integration that considers any differentiation only a temporary problem. The next two types recognize that EU directives leave considerable room for discretion in local transposition and implementation, which is not utilized by member states that support the new directive (aligned integration), but it is often exploited by those with reservations (autonomous integration). The fourth type is deviant integration, which

occurs when a state faces strong local resistance and ends up circumventing the EU policy, which can be tolerated by the Commission under some circumstances (see Smith 2010).

The research on differentiated integration suggests that adaptations are not only possible, but also common, especially when the de facto integration is included (Andersen and Sitter 2006:327). The differences suggested by the adaptation thesis would most likely be classified as cases of autonomous, multi-speed integration caused by the desire of the EU10 countries to adapt to their emerging market specifics.

### **3. Comparative analysis of EU bank regulatory regimes**

The adaptation thesis predicts that there would be systematic differences between the bank regulatory regimes in advanced and emerging economies due to differences in their wealth and political-economic stability. The thesis can be tested empirically on the case of the EU that strives to implement harmonized regulations in EU17 (advanced economies) as well as EU10 (emerging economies). The null hypothesis is that the differences between the EU countries are essentially random and the average EU10 regime is not systematically different from the average EU17 regime. In contrast, the alternative hypothesis predicts that there are systematic differences between the two sets of countries, which can be traced to the effort to compensate for the relative lack of resources and higher political-economic volatility in the EU10 economies.

The underlying assumption behind the hypotheses is that polities adapt banking regulation to fit their functional needs and structural constraints. The alternative expectation is that there is a policy drift, when the institutional maintenance is neglected so the regulatory structure no longer corresponds to the realities of the banking sector (see Streeck and Thelen 2005:18-30). The structure of the bank regulatory regime in 2003 to 2006 period covered by the data is unlikely to be a result of a policy drift. At the time, new member states finally emerged from transition recessions and accompanying banking crises (see Berglöf and Bolton 2002). They were updating

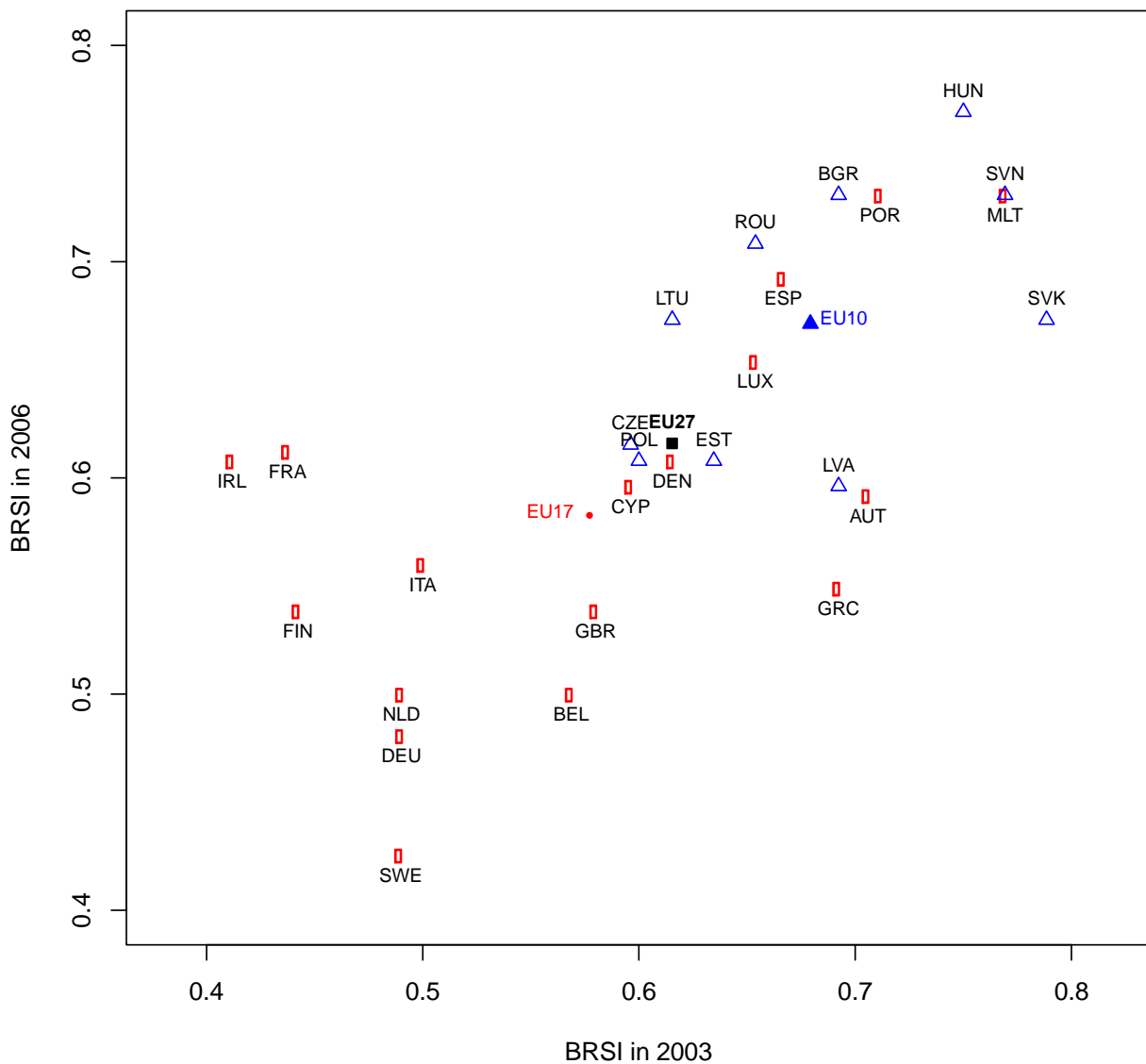
their regulations with the lessons of these crises, while at the same time implementing respective EU directives as part of the enlargement process. The old member states were also reforming financial rules due to the Financial Services Action Plan and implementation of the new Basel Capital Accord. The structure of the regulatory regime thus received considerable attention and was likely to represent purposeful policy choices.

The data for empirical testing derives from the World Bank Banking Surveys (WBBS). These provide unique information on the structure of the bank regulatory regime in all 27 EU countries for 2003 and 2006 (see Barth, Caprio, Levine 2006: 58-77 for the methodology).<sup>8</sup> The World Bank collected the data through questionnaires distributed to bank regulators. Although it is self-reported survey, it collects only descriptive characteristics, which reduces potential for biased responses. Moreover, the questionnaires are essentially derived from the Core Principles of Banking Supervision that provide a shared benchmark for comparison, well-known to all banking regulators. This reduces the scope for misinterpretation of survey questions and thus adds to consistency and comparability of data across countries.

Following the approach pioneered by Barth, Caprio and Levine (2001), all fifty-two descriptive characteristics of the bank regulatory regimes are coded into binary variables with 1 denoting the presence of the regulatory provision and 0 its absence. We call the sum of these codes a Bank Regulatory Stringency Index (BRSI), reflecting the fact that the coding questions are formulated so that the presence of given provision (and thus higher value of BRSI) indicates greater degree of regulatory stringency (see Annex 1 for the list of questions). The BRSI conceptualization does not necessarily imply that a stringent regulatory regime translates to a constraining regime for banks, as this inevitably depends on the enforcement. Nonetheless, the formal structure of the regime provides a reasonable proxy for the intent of national lawmakers adopting EU rules derived from international banking standards.

The Chart 1 summarizes the BRSI results for all 27 EU economies. It shows that there is a considerable degree of clustering as the BRSI for the EU10 economies is higher in both periods (top-right quadrant). The core EU17 countries concentrate in the bottom-left quadrant with lower BRSI scores in both periods. Some Southern EU17 countries, such as Spain, Portugal, Malta and – surprisingly – Luxembourg, display similar scores as the EU10 economies. The observed clustering provides an intuitive motivation for a more systematic analysis.

**Chart 1: Bank Regulatory Stringency Index**



Note: See Appendix 1 for the construction of BRSI. The 52 questions of the index are normalized on the scale from 0 to 1. ISO 3166-1 alpha-3 codes used for individual countries.

For statistical modeling we adopt a Bayesian approach due to its suitability for cross-country research based on small number of cases.<sup>□9</sup> Since our data constitutes a complete and small population of 27 countries in two points in time, the Bayesian statistics helps to avoid the unrealistic assumptions of probabilistically obtained sample and of a superpopulation (Berk et al. 1995).

The adaptation thesis suggests that there should be a systematic difference between the bank regulatory regimes in EU10 and EU17 countries, because the former are emerging markets, whereas the latter are advanced economies. To test this proposition we have used a binomial test for the difference between two groups, in which the country's number of positive answers to the 52 questions is modeled as governed by a binomial rate parameter different for each group of countries. The quantities of interest are the proportion of positively answered questions for each group and their difference. Table 1 displays the results transformed from proportions to the actual counts of positively answered questions.<sup>□10</sup>

**Table 1: BRSI comparison of EU10 and EU17**

year	2003			2006		
		HPD95	HPD95		HPD95	HPD95
	mean	low	high	mean	low	high
EU10 - EU17	5.19	2.50	7.85	4.64	1.87	7.23
EU17	30.00	28.29	31.67	30.36	28.65	32.03
EU10	35.19	33.07	37.23	35.00	32.92	37.08

Note: HPD95 refers to 95% Highest Posterior Density (HPD) intervals for selected posteriors. Alternative frequentist methods such as Welch's two sample t-tests and parametric bootstrap for the difference of group means lead on 95% significance level to the same conclusion that there is a systematic difference between EU10 and EU17 as the BRSI is higher for EU10 both in 2003 and 2006.

The EU10 banking regulatory regime was stricter both in 2003 and 2006, with the EU10 using on average 35 and EU17 30 out of the 52 regulatory provisions included in the dataset. Using Bayesian inference we find that with 95% credibility the EU10 countries used between 2.5 and 7.9 more regulatory provisions than EU17 in 2003 and between 1.9 and 7.2 in 2006. The results suggest a minor convergence between the two groups during the 2003 to 2006 period. Nonetheless, they demonstrate with high degree of credibility that the EU10 and EU17 bank regulatory regimes are systematically different at both times of observation.

The next questions are: what regulatory provisions constitute the bulk of the differences between EU10 and EU17 countries, and can they be related to those hypothesized by the literature on adaptation of international standards to emerging market circumstances? To see what particular characteristics of bank regulatory regimes vary most systematically we compare the two country groups on 52 individual questions of which the index is composed. We model the positive answers to a question as governed by binomial rate parameters specific for each group and question. Thus we model the answers to 52 questions as governed by 104 rate parameters, i.e. one for EU10 and another for EU17 for each question. For all the 104 binomial rate parameters we use the same weakly informative uniform prior with a minimum of 0 and a maximum of 1.<sup>□11</sup> There are two quantities of interest: (i)  $\delta$  the difference of the two parameters calculated by subtracting the parameter for EU17 from the one for EU10, and (ii) the probability that this difference is greater than zero -  $P(\delta > 0)$  - to which we refer as PD.<sup>□12</sup> The PD is the key inferential quantity; the higher the PD, the higher the probability that the given characteristic of the bank regulatory regime is present more in EU10 than in EU17 countries. Hence, those questions with the highest PD are those that distinguish the EU10 from the EU17. Table A2 in Appendix 2 lists the PDs for all 52 parameters of BRSI.

The comparison of the BRSI in Table 1 indicates that on average, the EU10 bank regulatory regimes implemented five more regulatory provisions that were not part of the average EU17



regime. More precisely, the 95% HPD intervals suggests that there are between two to eight provisions that distinguish regulatory regimes of EU10 from those of EU17. Table 2 lists the eight provisions with the highest mean PD, which determine the differences in the BRSI of the two sets of countries. The PDs of these eight parameters indicate at least 85% probability that  $\delta > 0$  (see Table A2 in Appendix 2).

**Table 2: Eight questions most likely explaining the EU10 and EU17 differences**

Code*	The answer is positive, when (see Appendix 1):	Effect on stringency of the bank regulatory regime
CAP33	The minimum provisioning required when a loan is classified is set as fixed number or narrow interval.	Limits the discretion of bankers and regulators to set provisions according to their own forward-looking assessment.
SUP44	There is a legally defined level of solvency, breach of which triggers automatic intervention.	Pre-empts any discretion on the part of the regulator and prevents regulatory forbearance.
CAP34	All of the given customer loans are automatically classified as non-performing, when any single one of them is classified as non-performing.	Limits discretion of banks and regulators to decide on classification of all other loans of the given customer.
IND1	The regulator is accountable to the parliament (directly or indirectly through the central bank), rather than to the Ministry of Finance.	Increases operational independence of the regulatory body from its government.
SUP21	The regulator can order bank's management to create provisions to cover actual or potential losses on the top of existing provisioning rules.	Increases discretionary powers of the regulator to force the bank to increase capital buffers beyond what is required by the standard rules.
ENT12	Initial disbursement of capital is limited to cash and government securities.	Prevents banks from relying on lower quality capital such as hybrid securities or goodwill, when they start their operation.

SUP22	The regulator may suspend the decision of the bank's management to distribute dividends.	Provides the regulator with discretionary power to increase capital buffers even against the preference of bank's management.
SUP45	There are mechanisms of cease and desist type, whose infraction leads to the automatic imposition of civil and penal sanctions on the banks directors and managers.	Provides the regulator with discretionary power to forbid banks to engage in some activities that they consider too risky or unsustainable.

Note: \* Questions are ranked according to the highest mead PD (see Table A2 in Appendix 2). The full formulation of each question is in Appendix 1.

Our statistical methodology also allows us to estimate the relative contribution of the eight regulatory provisions towards explaining the overall difference between EU10 and EU17 country groups. In addition to the difference between EU10 and EU17 on all 52 provisions we have also modeled analogically their difference on our 8 provisions and then compared their size (by dividing the difference on 8 provisions by the overall difference).<sup>□13</sup> Results in Table 3 suggest that our selected 8 provisions constitute about 64% of the overall difference between EU10 and EU17 in 2003 and about 72% in 2006.<sup>□14</sup> In short, the eight questions listed in Table 2 explain two-thirds of the differences between the EU10 and EU17.

**Table 3: Relative size of the difference between EU10 and EU17**

year	2003			2006		
		HPD95	HPD95		HPD95	HPD95
	mean	low	high	mean	low	high
Relative size	0.64	0.29	1.1	0.72	0.26	1.35

Note: HPD95 refers to 95% Highest Posterior Density (HPD) intervals for selected posteriors. The table reports the relative size of the difference between EU10 and EU17 on the 8 provisions (listed in Table 3) compared to their difference on all 52 provisions.

Substantively, eight provisions that explain most of the difference between bank regulatory regimes of emerging and advanced EU economies can be interpreted as limiting the EU10 discretion to be more lenient, while increasing their discretion to be more stringent. This can increase the perceived credibility of the EU10 regimes in the context of higher resource-

constraints and greater economic and political instability. Stringent rules with automatic triggers ensure that response to adverse developments would not be postponed and at least the minimal regulatory interventions would take place. By implication, the EU17 bank regulatory regimes provide bankers and regulators with greater degree of discretion in application of existing rules, but do not provide them with some additional powers typical for the EU10 regimes. The EU17 can dedicate more resources to regulation and — at least during the pre-crisis decades — faced less political and economic volatility, hence, there was less need to enhance credibility of their regimes by limiting regulatory discretion. □<sup>15</sup>

More specifically, the EU17 regimes leave the decision on the proportion of an overdue loan to be provisioned (see CAP33 in Table 2) to the judgement of bankers and regulators, who rely on the assessment of the future developments of the given client, the relevant industry and the overall economy. In contrast, the EU10 tend to apply strict rule such as "if the loan is 90 days overdue, the bank needs to set aside reserve equivalent to 10% of the outstanding loan". Such a rule provides no discretion; EU10 bankers and regulators were bound to create 10% provisions, even in situations when their EU17 colleagues might conclude that the delay in payment is only temporary problem not necessitating any provision as the situation is expected to improve soon enough for the repayments to resume. The more stringent EU10 rules are more credible in the more volatile and uncertain circumstances of emerging markets, as they cannot be so easily manipulated by unfounded optimism. Under most scenarios, simple, stringent rules force EU10 banks to err on the safe side and create more provisions earlier. Similar effect on credibility of the EU10 bank regulatory regime is generated by the automatic intervention triggers (SUP44), automatic reclassification of client loans (CAP 34) and requirements of high quality assets for the initial capital disbursement (ENT 12). These four distinguishing provisions all force EU10 bankers and regulators to act without any further discretionary consideration.

The accountability to the parliament or central bank rather than the Ministry of Finance is also more typical for the EU10 than for the EU17 (IND1 in Table 2). It shielded regulatory bodies from the volatile political influence, thus reducing the likelihood that the credibility of the regulatory regime could be undermined by direct political interference. Finally, the three remaining distinguishing provisions increase the credibility of the EU10 regimes by providing their regulators with discretionary powers to impose additional requirements, if they consider it necessary. Unlike EU17 regulators, their EU10 counterparts could impose provisions on specific loans over and above existing rules (SUP21 in Table 2), suspend the decision of the bank's management to distribute dividends in order to create additional capital buffers (SUP22) and forbid specific activities by the cease and desist order (SUP 45).

The conclusion that EU10 regimes provide regulators with less discretion to be lenient, but more discretion to be stringent is consistent with the expectations of the adaptation thesis. The thesis predicted that bank regulatory regimes in emerging markets would rely on rules that are easier to monitor and act upon. Fixed rules that compel EU10 regulators to act without further considerations meet this prediction, much better than the flexible EU17 rules that base decision-making on forward-looking criteria and leave more interventions to the discretionary judgement. The EU17 regimes presume that there are sufficient resources for information and research necessary for the discretionary decision-making and limited political interference into the regulatory process that allow regulators to decide and intervene on case-by-case basis. These conditions are more difficult to meet in volatile emerging market circumstances including those of EU10. Hence, these economies tend to avoid reliance on flexible, forward-looking judgements and enhance credibility of their regimes by relying on easily observable rules and automatic triggers. Such rules induce bankers and regulators to err on the safer side and are thus more suitable for the emerging market circumstances.

## **Conclusion**

We have tested the adaptation thesis derived from the literature on diffusion of international banking standards, which suggested that their implementation in emerging markets necessitates some adjustments to local circumstances. The data from World Bank Banking Surveys indicate that bank regulatory regimes in the ten new EU member countries — regarded as emerging markets — are systematically different in some specific aspects from regimes found in the seventeen advanced economies of the old EU members. Around the time of Eastern enlargement, the EU10 states used the flexibility provided by the EU regulatory framework to equip their regulators with more administrative powers, but reduced their discretion by prescriptive rules and automatic triggers that prevent leniency and forbearance. The EU10 regulators could be more stringent, but not more lenient. In contrast, the EU17 regulators were on average provided with a slightly more limited toolbox of administrative powers, but also with greater flexibility in their application. They could forbear some prudential requirements temporarily and use their forward-looking judgment in supervision of classification and provisioning decisions. In short, they could choose to be more lenient, but had less tools to be more stringent than their EU10 counterparts.

The eight characteristics that explain most of the difference between the EU10 and EU17 economies can increase the perceived credibility of the bank regulatory regime in the EU10 countries. Stringent rules with automatic triggers ensure that response to adverse developments would not be postponed excessively and at least the minimal regulatory interventions would take place. This is not necessarily the most efficient arrangement. It may induce banks to extend less than optimal amount of credit, but it also makes them more resilient by inducing bankers to hold higher reserves as regulators are less able to forbear any requirements during difficult times. It also frees the regulators of some of the burdens of deriving their decisions from forward-looking predictions that are more difficult in more volatile political economies.

The structure of the bank regulatory regime is only one among many variables that influence the policy outcomes of ultimate interests such as financing of economic growth or the stability of the banking sector. Our contribution to this broader debate is limited to pointing out that — even in the case of the EU which strives for regulatory harmonization — there are observable and systematic differences that distinguish bank regulatory regimes of emerging and advanced countries. This not only provides empirical support for the adaptation thesis, but also generates several policy relevant suggestions for the debate on EU and global reforms of financial regulation.

First, our findings suggest that in recent past the new member states took advantage of the flexibility provided by the EU directives and implemented some aspects of the bank regulatory regime differently than EU17. They may prefer adapting some future regulations too. The current financial crisis originated in the financial centers handling the most complex products, thus the EU regulatory response is likely to address the more sophisticated end of banking business. The less advanced EU economies will bear the burden of the new regulation, even though the banks in their home markets are engaged almost exclusively in traditional commercial banking activities. Hence, they might consider to simplify or even forbid certain type of financial operations, instead of investing in resource-intensive regulatory infrastructure necessary for supervision of complex financial structures that turned toxic during the crisis.

Second, the latest international standards for bank capital adequacy — so called Basel II — provided for adaptation to emerging market circumstances on the level of a bank. Banks may opt for the 'standardized approach' to credit risk management that is simpler and easier to implement than its alternatives based on internal risk ratings. The systematic differences across advanced and emerging countries open the question whether such a choice should not be done on the country, rather than bank, level. Countries with volatile environments and limited

regulatory resources should not automatically accept regulatory options that they cannot sufficiently supervise.

Finally, the financial crisis questioned the basic distinction between emerging and advanced markets in terms of political and economic volatility. Some of the long stable advanced economies in Europe displayed less political and economic stability than many emerging markets during the post-2007 crisis period. It may be the case that the EU17 tendency towards discretionary decisions derived from forward-looking indicators overestimated the degree of financial and economic stability. Hence, both advanced and emerging economies might consider a return to less complex and less 'risk-sensitive' regulatory regimes.

Although, we do not provide any definitive answers to these important policy questions, our empirical findings nonetheless suggest that the one-size-fits-all international standards do not provide universal answer for banking regulation within the EU and across the world. The new generation of international standards coming out of the post-crisis debates should recognize specifics of emerging markets and allow for their accommodation.

## Notes

<sup>1</sup> The EU17 includes all pre-2004 member states plus Cyprus and Malta; the EU10 country group represents the 10 post-communist EU member states that joined the Union in 2004 and 2007 and were generally regarded as emerging market economies by the global financial markets.

<sup>2</sup> There is no universally accepted definition of the distinguishing features of emerging markets. The categorization is maintained by the financial data providers such as MCSI Barro or FTSE, who compile benchmark indexes of stock and bonds. Their classification schemes combine technical

factors related to trading infrastructure, level of GDP and soft criteria related to general predictability and stability of political and economic environment (see FTSE 2009, MCSI 2008).

<sup>3</sup> The Core standards for effective banking supervision highlight the relevance of these factors by listing them as prerequisites for effective supervision (BCBS 2006:6).

<sup>4</sup> Laffont (2005) also lists the forth problem of fiscal efficiency, whereby low tax bases forces emerging market governments to increase taxes, which may actually reduce tax intake. This is more relevant for the regulation of publicly financed utilities than banking, though.

<sup>5</sup> Laffont's (2005) conclusions are context-specific. For example, he argues that emerging economies need to pool scarce resources for regulation and concentrate regulatory institutions. This would practically imply that banking sector should be regulated by central banks that tend to be more resource-endowed institution than separate regulatory authorities. However, a related implication of Laffont's model is that having more regulatory bodies, such as the central bank and a separate regulatory authority, may create some degree of regulatory competition and thus yield more policy-relevant information than a centralized system. Which of these effects is more important depends on the policy context in the particular emerging market; if the budget constraint is the binding one, then concentration is the solution, whereas if information extraction is more important, separation should be the choice.

<sup>6</sup> The 2011 introduction of the European Supervisory Authorities with mandate to monitor national implementation and formulate common EU rulebook put further constraints on the differentiated implementation of EU financial market directives.

<sup>7</sup> One indicator of such convergence is the status of EU10 countries within international organizations such as the World Bank or European Bank for Reconstruction and Development. Slovenia and the Czech Republic had already 'graduated' from the status of emerging economies eligible for support to the status of the EU17 countries.



<sup>8</sup> The pilot version of the WBBS was administered in 1999/2000, but it relied on shorter set of questions and thus could not be included. The World Bank discontinued its banking survey in 2009, thus data for testing the convergence hypothesis beyond 2006 is not available.

<sup>9</sup> The differences between the EU10 and EU17 sub-samples are significant on the 95% level for both periods, hence our conclusions do not depend on the chosen method. However, the Bayesian approach is more helpful for identifying particular factors driving these differences.

<sup>10</sup> We have estimated the two models using Markov chain Monte Carlo. For each model we have set up four Markov chains and obtained 1.1 million samples for each chain, of which we have discarded the first 100 thousand as “burn-in” and kept only every 100th sample from the remaining 1 million samples which gave us 10 thousand samples with very low autocorrelation for inferences.

<sup>11</sup> All models were implemented in JAGS, an implementation of the BUGS language (Plummer 2011), and performed the analysis from within the R statistical environment using the R package `rjags`.

<sup>12</sup> We have estimated the 104 models using Markov chain Monte Carlo (MCMC). For each model we have set up four Markov chains and obtained 101 thousand samples for each chain, of which we have discarded the first 1 thousand as “burn-in” and kept only every 10th sample from the remaining 100 thousand samples which gave us 10 thousand samples with very low autocorrelation for inferences.

<sup>13</sup> We have estimated this quantity using MCMC. We have set up four chains for each of the two models and used the procedure noted in footnote 10.

<sup>14</sup> We can say — with the 95% credibility — that the difference on 8 provisions is from 29% to 110% percent of the difference on all 52 provisions in 2003 and from 26% to 135% in 2006. The share can exceed 100% because the difference on all 52 provisions can be smaller than the difference on our 8 provisions due to difference on the remaining 44 provisions going in the opposite direction.

<sup>15</sup> The crisis amply demonstrated that there were many blind spots in the regulatory model of advanced economies. However, these were related to the more 'sophisticated' parts of the banking business, not the elementary features of banking regulations reviewed here (see Appendix 1 for the full list). The crisis did not show that these fundamental regulatory provisions were wrong, but that they were insufficient; they need to be complemented by additional regulations covering henceforth unregulated issues such as pro-cyclicality of bank lending or credit-financed asset bubbles (see FSB 2010 for review).

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## **Appendix 1: Data and index construction**

Bank Regulatory Stringency Index (BRSI) is a sum of positive answers to the following questions: -

BAR1. Are there restrictions on banks engagement in securities activities (4.1)? - BAR2. Are there restrictions on banks engagement in insurance activities (4.2)? - BAR3. Are there restrictions on banks engagement in real estate activities (4.3)? - CAP11. Is capital-asset ratio risk weighted in line with the 1988 Basle guidelines (3.1.1)? - CAP12. Does the minimum capital-asset ratio increase when an individual bank's credit risk increases (3.2)? - CAP13. Does the minimum capital-asset ratio increase when market risk increases (3.3)? - CAP21. Is market value of loan losses not realized in accounting books deducted from the book value of capital before the minimum capital adequacy is determined (3.9.1)? - CAP22. Are the unrealized losses in securities portfolios deducted from the book value of capital before the minimum capital adequacy is determined (3.9.2)? - CAP23. Are unrealized foreign exchange losses deducted from the book value of capital before the minimum capital adequacy is determined (3.9.3)? - CAP31. Are revaluation gains excluded from bank's capital (3.7)? - CAP32. Is the primary system for loan classification based on number of days a loan is in arrears (9.1.1)? - CAP33. Is the minimum provisioning, required as loans become sub-standard, doubtful or loss, defined as fixed proportion (9.3)? - CAP34. If a customer has multiple loans and one loan is classified as non-performing, are the other loans automatically reclassified as non-performing (9.5)? - ENT11. Are the sources of funds to be used as capital verified by the regulatory/supervisory authorities (1.5)? - ENT12. Is the initial disbursement and subsequent injections of capital restricted to cash and government securities (1.6)? - ENT13. Can initial disbursement of capital be done only with own (non-borrowed) funds (1.7)? - ENT21. Are draft bylaws legally required to be submitted before issuance of the banking license (1.8.1)? - ENT22. Is intended organization chart legally required to be submitted before issuance of the banking license (1.8.2)? - ENT23. Are financial projections for first three years

legally required to be submitted before issuance of the banking license (1.8.3)? - ENT24. Are financial information on main potential shareholders legally required to be submitted before issuance of the banking license (1.8.4)? - ENT25. Are summaries of background and experience of future directors legally required to be submitted before issuance of the banking license (1.8.5)? - ENT26. Are summaries of background and experience of future managers legally required to be submitted before issuance of the banking license (1.8.6)? - ENT27. Is information on sources of funds to be disbursed in the capitalization of new bank legally required to be submitted before issuance of the banking license (1.8.7)? - ENT28. Is market differentiation intended for the new bank legally required to be submitted before issuance of the banking license (1.8.8)? - ENT31. Are foreign entities prohibited from entering through acquisition (1.12.1)? - ENT32. Are foreign entities prohibited from entering through subsidiary (1.12.2)? - ENT33. Are foreign entities prohibited from entering through branch (1.12.3)? - IND1. Is the bank supervisory body responsible and accountable to the parliament (12.2)? - IND2. Does the head of the supervisory agency have a fixed term (12.2.2)? - IND3. Can individual supervisory staff be held personally liable for damages to a bank caused by their actions or omissions committed in the good faith exercise of their duties (12.10.)? - OWN1. Are there restrictions on bank ownership of voting shares in non-financial firms (4.4)? - OWN2. Are there restrictions on non-financial firms' ownership of shares in commercial banks (2.3)? - OWN3. Are there restrictions on nonbank financial firms' (e.g., insurance or securities companies, etc.) ownership of voting shares in commercial banks (2.5)? - SUP11. Does the supervisory agency have the right to meet with external auditors to discuss their report without the approval of the bank (5.5)? - SUP12. Are auditors required by law to communicate directly to the supervisory agency any presumed involvement of bank directors or senior managers in illicit activities, fraud, or insider abuse (5.6)? - SUP13. Can supervisors take legal action against external auditors for negligence (5.7)? - SUP21. Can the supervisory agency order the bank's directors or management to create provisions to cover actual or potential losses (11.2)? - SUP22. Can the supervisory agency suspend the directors'

decision to distribute dividends (11.3.1)? - SUP23. Can the supervisory agency suspend the directors' decision to distribute bonuses (11.3.2)? - SUP24. Can the supervisory agency suspend the directors' decision to distribute management fees (11.3.3)? - SUP25. Can Bank Supervisor legally declare bank is insolvent so that this declaration supersedes some of the rights of shareholders (11.6.1)? - SUP26. Does the bank supervisor have the authority to suspend some or all ownership rights in a problem bank (11.7.1)? - SUP27. Can the bank supervisor supersede shareholder rights in the process of bank restructuring and reorganization (11.9.1)? - SUP28. Can the bank supervisor remove and replace management in the process of bank restructuring and reorganization (11.9.2)? - SUP29. Can the bank supervisor remove and replace directors in the process of bank restructuring and reorganization (11.9.3)? - SUP30. Can the supervisory authority force a bank to change its internal organizational structure (6.1)? SUP31. Are off-balance sheet items disclosed to supervisors (10.4)? - SUP41. Can bank supervisor forbear certain prudential regulations (11.9.4)? - SUP42. Must an infraction of any prudential regulation found in the course of supervision be publicly reported (12.9)? - SUP43. Are there mandatory actions that the supervisor must take in case of an infraction of any prudential regulation found in the course of supervision (12.9.1)? - SUP44. Is there legally defined minimal level of solvency crossing of which triggers automatic intervention (11.8)? - SUP45. Are there any mechanisms of cease and desist type, whose infraction leads to the automatic imposition of civil and penal sanctions on the banks directors and managers (11.1)?

Notes: (i) numbers in brackets refer to question's code in the WBBS; (ii) about 1% of answers for 2003 and 2% for 2006 were missing; (iii) to be able to include all 52 questions and 27 countries, we have modeled the missing answers as draws from a Bernoulli distribution with the probability of the mean of the non-missing values on the given question comparatively. This is a simple and transparent method, given that the share of the missing data is low; (iv) EU10 and EU15 indicators were calculated as unweighted averages of respective countries; (v) raw WBBS data can be obtained at <http://go.worldbank.org/SNUSW978P0>

**Table A2: Probabilities of difference between EU10 and EU 15 regimes**

<i>Rank</i>	<i>Code</i>	<i>PD 2003</i>	<i>PD 2006</i>	<i>mean PD</i>		<i>Rank</i>	<i>Code</i>	<i>PD 2003</i>	<i>PD 2006</i>	<i>mean PD</i>
1	CAP33	1.00	1.00	1.00		27	ENT24	0.62	0.62	0.62
2	SUP44	0.99	1.00	1.00		28	ENT31	0.62	0.62	0.62
3	CAP34	0.98	0.92	0.95		29	ENT32	0.62	0.62	0.62
4	IND1	0.95	0.95	0.95		30	ENT33	0.62	0.62	0.62
5	SUP21	0.96	0.93	0.95		31	IND3	0.95	0.27	0.61
6	ENT12	0.89	0.99	0.94		32	SUP29	0.55	0.62	0.59
7	SUP22	0.93	0.93	0.93		33	CAP31	0.33	0.73	0.53
8	SUP45	0.99	0.85	0.92		34	IND2	0.55	0.50	0.53
9	SUP27	0.85	0.98	0.92		35	ENT21	0.62	0.38	0.50
10	ENT11	0.88	0.93	0.91		36	SUP11	0.64	0.32	0.48
11	ENT27	0.93	0.88	0.91		37	ENT25	0.32	0.62	0.47
12	ENT28	0.93	0.85	0.89		38	SUP12	0.32	0.62	0.47
13	SUP26	0.88	0.88	0.88		39	SUP13	0.51	0.40	0.46
14	SUP24	0.82	0.93	0.88		40	CAP21	0.79	0.08	0.44
15	OWN1	0.85	0.89	0.87		41	OWN2	0.22	0.62	0.42
16	SUP28	0.93	0.78	0.86		42	CAP11	0.38	0.38	0.38
17	ENT26	0.77	0.88	0.83		43	OWN3	0.38	0.38	0.38
18	ENT13	0.77	0.85	0.81		44	SUP31	0.38	0.38	0.38
19	BAR3	0.56	0.97	0.77		45	SUP30	0.34	0.41	0.38
20	CAP32	0.79	0.67	0.73		46	SUP42	0.32	0.38	0.35
21	SUP25	0.44	0.97	0.71		47	BAR2	0.33	0.22	0.28
22	SUP23	0.67	0.67	0.67		48	CAP22	0.47	0.02	0.25
23	SUP43	0.91	0.40	0.66		49	CAP23	0.28	0.11	0.20
24	BAR1	0.86	0.38	0.62		50	CAP12	0.05	0.23	0.14
25	ENT22	0.62	0.62	0.62		51	CAP13	0.05	0.23	0.14
26	ENT23	0.62	0.62	0.62		52	SUP41	0.15	0.04	0.10



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