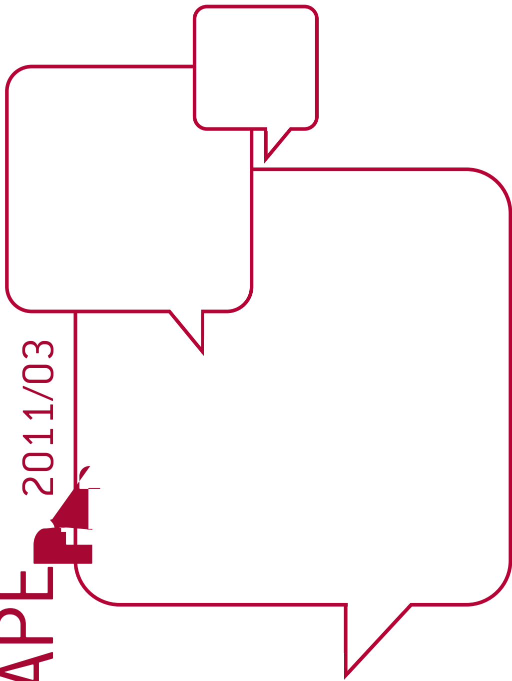

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TOO BIG TO FAIL: THE TRANSATLANTIC DEBATE

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I. INTRODUCTION

The problem of dealing with too big to fail (TBTF)[1] financial institutions is not a new one in financial policy, but the severity of the global economic and financial crisis that started in 2007 has put a spotlight on it like never before, along with the size and scope of the measures taken by the official sector to prevent the failure of a host of large and complex financial institutions. This paper aims at reviewing the key dimensions of the policy debate on the TBTF problem, as distinct from other dimensions of discussions aimed at strengthening financial stability, in the two major jurisdictions directly affected by the financial crisis, namely the United States and the European Union.[2]

The TBTF problem gained particular prominence in March 2008 with the controversial rescue of Bear Stearns, when the US Federal Reserve backed JPMorgan Chase's purchase of that ailing investment bank, and then again symmetrically in September 2008 when the US authorities' decision to let Lehman Brothers fail ushered in a sequence of major market disruptions. On October 10, 2008, a few weeks after the Lehman collapse, the finance ministers and central bank governors of G-7 countries met in Washington, DC, and “agreed to take decisive action and use all available tools to support systemically important financial institutions and prevent their failure,” thus providing official confirmation that the TBTF label was more than just an allegation. A few days later, EU leaders clarified at the October 15-16, 2008, European Council meeting their “commitment that in all circumstances the necessary measures will be taken to preserve the stability of the financial system, to support the major financial institutions, to avoid bankruptcies, and to protect savers' deposits,” while adding that “measures to support financial institutions in difficulty should go hand in hand with measures to protect taxpayers, to secure accountability on the part of executives and shareholders, and to protect the legitimate interests of other market players.” Given such pledges, it is no wonder that significant attention is being paid by policymakers and analysts alike to how one can avoid a future situation where authorities would once again be faced with an unpalatable binary choice between massive bailouts and market chaos.

The existence of TBTF financial institutions represents a three-fold policy challenge, which we refer to throughout this paper as the 'TBTF problem.'

First, such institutions exacerbate systemic risk by removing incentives to prudently manage risks and by creating a massive contingent liability for governments that, in extreme cases, can threaten their own financial sustainability, with Iceland in 2008-09 and Ireland in 2010 serving as dramatic, recent cases in point. Larger and more diversified banks have shown greater write-downs of assets than smaller and less diversified ones (Haldane, 2010), lending support to the proposition put forward by Stern and Feldman (2004) that large banks 'spend' any diversification cost-saving on greater risk-taking.

Second, TBTF institutions distort competition. According to Moody's, the 50 largest banks in 2009 benefited from an average three-notch advantage in their credit rating, which has been understood to be at least partly related to official support (BIS, 2010). US banks with assets of more than $100

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1. We use the TBTF shorthand in full awareness of its shortcomings, especially the fact that the systemic importance of financial firms is not dependent on size alone, as we discuss later in this paper. Other shorthand characterizations have been proposed, such as “too important to fail (TITF),” which is standard at the International Monetary Fund. However, TBTF has acquired sufficiently wide acceptance to become a standard way to name our subject matter.

2. Our geographic focus means that some elements of the global debate on TBTF, such as the impact of dominant state

billion can fund themselves for more than 70 basis points cheaper than smaller banks. The largest banks have received the lion's share of state attention: Haldane (2010) reports that 145 global banks with assets over $100 billion each accoun

institutions and was therefore treated on a TBTF institution.

The crisis surrounding Long-Term Capital Management (LTCM), a hedge fund that suffered heavy losses and liquidity tensions as a result of the Asian and Russian financial crises in 1997-98 and had to be bailed out by major banks under the auspices of the Federal Reserve Bank of New York in

hostile takeover of ABN AMRO in 2007 by a consortium of Royal Bank of Scotland (RBS), Fortis and Santander, which in turn contributed to the downfall of the former two.

Overall, this history has produced a wide diversity of banking structures within the European Union, with the larger continental economies (France, Germany, Italy, the Netherlands, and Spain) still relying predominantly on domestica witak smis inelg6(,25.55 -1.1735 TD .0007 Tc .14(rland761res

Developments since 2007

In the United States, the July 2010 Dodd-Frank Wall Street Reform and Consumer Protection Act (Dodd-Frank Act, 2010) contains a host of provisions targeted at the regulation and supervision of SIFIs (Davis-Polk, 2010), including, inter alia, stipulations that:

- bank holding companies with $50 billion or more in assets are automatically subject to enhanced prudential standards;
- once designated, systemically important nonbank financial companies must register with the Federal Reserve within 180 days;
- the Federal Reserve is required to establish enhanced risk-based capital, leverage, and liquidity requirements, overall risk management requirements, resolution plans, credit exposure reporting, concentration limits and prompt corrective action to apply to systemically important bank and nonbank financial firms;
- the enhanced prudential standards will also apply to US operations of foreign bank holding companies, although it is not yet known whether such provisions will apply extraterritorially to the foreign parent;
- subject to some exceptions and a transition period, any 'banking entity' will be prohibited from engaging in proprietary trading or sponsoring or investing in a hedge fund or private equity fund; systemically important nonbank financial companies, while not prohibited from engaging in such activities, will be required to carry additional capital and comply with certain other quantitative limits on such activities (part one of the so-called 'Volcker Rule'[8]);
- any insured depository institution or systemically important nonbank financial company will be prohibited from merging or acquiring substantially all the assets or control of another company if the resulting company's total consolidated liabilities would exceed 10 percent of the aggregate consolidated liabilities of all financial companies at the end of the prior calendar year (part two of the Volcker Rule); and
- systemically important nonbank financial companies and large, interconnected bank companies will be required to prepare and maintain extensive rapid and orderly resolution plans, which must be approved by the Federal Reserve and the FDIC.

Many of these provisions require regulations to be issued by federal agencies, which are still in the works at the time of writing this paper. In a speech in August 2010, the US Treasury secretary continued to underscore the priority attached to making progress on TBTF when he emphasised that “the final area of reform...is perhaps the most important, establishing new rules to constrain risk-taking by – and leverage in – the largest global financial institutions” (Geithner, 2010).

By contrast, in the European Union there have been so far no legislative or regulatory initiatives to establish size caps, mandatory capital, or liquidity standards applicable specifically to SIFIs, nor anything resembling the Volcker Rule. The only item in the Dodd-Frank 'menu' that has already been met with some action in the European Union is the last one in the list, as various EU member states are asking leading banks to produce proposals to facilitate their possible recovery and/or resolution in a crisis, whether formally as specifically defined 'living wills' or as part of the ongoing supervisory dialogue. In Belgium, recent legislation has created a national systemic risk board that will publish and regularly update an official list of SIFIs requiring special attention. A first version of this list was

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published in October 2010 and includes 15 legal entities belonging to 9 different financial groups.[9] In the United Kingdom, the new coalition government elected in May 2010 has established an Independent Commission on Banking that is expected to propose a policy strategy to address the TBTF issue. Its conclusions are expected in June 2011, even though an active public debate will certainly take place before then.

At the European Union level, the legislative response to the crisis has been generally slower than in the United States for four main reasons. First, legislative proceedings are structurally slow in the European Union because of the complex interaction between the EU level and 27 sovereign states.

The lawmaking framework combines the exclusive right of initiative for the European Commission and the need to reach agreement both with the Council of Ministers, which represents the 27 member states voting (in most financial-services matters) under a qualified-majority rule, and with the European Parliament. Second, at the time of the Lehman Brothers collapse, the European Commission was already in lame-duck mode awaiting its planned renewal in 2009, and this renewal was then further delayed for procedural reasons linked to the adoption of the Lisbon Treaty. The new team, including the new commissioner for the internal market and services (who oversees most financial-services issues), Michel Barnier, only took the reins in early 2010. Third, priority was initially given to the necessary overhaul of the European Union's supervisory architecture. This is an innovative policy endeavour that will result in 2011 in the establishment of three supranational European supervisory authorities, with respective mandates over banks (European Banking Authority – EBA), securities and markets (European Securities and Markets Authority – ESMA) and insurance (European Insurance and Occupational Pensions Authority – EIOPA), as well as a European Systemic Risk Board to oversee macroprudential issues. The corresponding legislation, based on a report published in February 2009 (de Larosière, 2009), was finalised in September 2010. This rather long delay is unsurprising given the political significance of the changes: the US equivalent is not the limited reorganisation of federal agencies included in the Dodd-Frank Act, but rather the establishment of federal financial authorities such as the Securities and Exchange Commission and the Federal Deposit Insurance Corporation in the 1930s, even though the European agencies will start with a more limited mandate that does not supersede all existing competencies of national supervisors at the level of EU member states. Fourth, and not least, the European Union remains in the midst of an unresolved major banking crisis, while in the United States the 'stress tests' of spring 2009 and subsequent recapitalisation managed to restore a sense of normality at the core of the national banking system, even though many smaller banks have failed since.

Now that a new commission is in charge and a suitable supervisory infrastructure is being put in place, new policy initiatives are to be expected. The indications so far, however, are that the EU institutions are reluctant to envisage specific policies to address the TBTF problem. Two European Commission communications (nonbinding statements of policy principle) were published in 2010, the first on 'Bank Resolution Funds' in May and the second on crisis management and resolution in October (European Commission, 2010a and 2010b). Both contain essentially no reference to a possible differential treatment of SIFIs compared to smaller financial institutions, and suggest that the commission at this point remains markedly more cautious on the TBTF problem than the United States has been with the adoption of the Dodd-Frank Act. The same applies to a more recent consultation on 'technical details of a possible EU framework' for bank recovery and resolution

9. Of which five are headquartered in Belgium (Ageas, Dexia, Ethias, Euroclear, KBC) and four are foreign headquartered (AXA, Bank of New York Mellon, BNP Paribas, ING). Source: Belgian Committee for Systemic Risks and Systemic Financial Institutions (CREFS-CSRSFI), circular CREFS 2010-01.

(European Commission, 2011).

Such caution reflects a more structural challenge for the European Commission as a direct result of the financial crisis. In the preceding decade, the European Union relied on an implicit agreement within both the commission and the European Parliament to foster financial market integration through the dismantling of national regulatory barriers that hindered it, and thus de facto aligned itself with an international deregulatory agenda (Posner and Véron, 2010). Now that reregulation is the order of the day, this alignment is no longer relevant, and the European Commission finds itself with the need to define a new strategic orientation that must still be compatible with the beguiling diversity of national positions and regulatory cultures within the European Union. One option may be to replicate US choices under the guise of transatlantic convergence, as Commissioner Barnier seems to have chosen in the important issue of moving over-the-counter derivatives toward centralised clearing. However, it is doubtful that the same can be achieved in the highly politically charged area of bank regulation. Thus, it is to be expected that some time will pass before a clear orientation emerges at the EU level in this area.

III. STRUCTURAL DIFFERENCES BETWEEN THE UNITED STATES AND EUROPEAN UNION

In this section, we examine the differences in financial and political structures that result from the contrasting historical paths of the United States and European Union. We would argue that such structural differences are influential in shaping the policy arguments on issues such as TBTF.

Financial industry structures

In the European Union banks play a much bigger role in financial intermediation than in the United

Source: Goldberg, Jason; American Banker, The Banker Top 1000 World Banks, and Barclays Capital (taken from Barclays Capital "Large-Cap/Mid-Cap Banks 2010 Outlook")

Another consequence is that measured in terms of assets to home country GDP, the largest EU banks are much larger, and thus even more likely to be considered TBTF, than their largest US counterparts. As shown in table 2, ratios of top-three or top-five bank assets to GDP show a considerable increase in the size of the largest banks since 1990 (or earliest available) in all nine of the large advanced economies included in the sample. As noted earlier, for more than two-thirds of the cases this increase in the size of the largest banks relative to the size of the economy also continued during the recent crisis (where 2006 represents the pre-crisis observation and 2009 the latest one).

Table 2: Combined assets of the three or five largest banks relative to GDP

Country	Top 3 banks			Top 5 banks		
	1990	2006	2009	1990	2006	2009
Germany	38	117	118	55	161	151
UK	68	226	336	87	301	466
France	70	212	250	95	277	344
Italy	29	110	121	44	127	138
Spain	45	155	189	66	179	220
Netherlands	154	538	406	159	594	464
Sweden	89	254	334	120	312	409
Japan	36	76	92	59	96	115
US	8	35	43	11	45	58

Source: Bank for International Settlements

Just as important for our purposes, table 2 highlights the considerably higher systemic importance of large banks in all major EU economies than in the United States – at least if systemic importance is proxied by the size of the balance sheet, which probably underestimates the importance of banks in the United States given the broader development of the shadow banking system (Pozsar et al, 2010). Our interpretation is that the TBTF problem is actually much more pressing in the European Union than the United States, but also more difficult to address. Some might argue that since the European Union has a policy to create a single financial market, bank assets should be compared to the EU GDP rather than the national GDP of the country of headquarters, in which case the EU and US figures would be of comparable order of magnitude. However, such a comparison of aggregates is less relevant from a policy perspective: As the recent crisis brought home forcefully, de facto public guarantees for most banks come from the home country and only from there, a reality aptly summarised by the quip often attributed to Mervyn King that "international banks are global in life, but national in death." In truth, the European reality is somewhat blurred by some banks' multiple national allegiances. Thus, Dexia was jointly rescued by France and Belgium (and their respective taxpayers) in September 2008, and it is likely that some burden-sharing would be sought in the case of a public intervention to help, say, Nordea (in this

It should be noted that European banks are less globally dominant when ranked by other measures of size or strength. By absolute value of Tier 1 capital (also 2008-09), US banks dominate the top 10 list: Four of this group are US banks (including the top three), four are EU banks (two from the UK and one each from Spain and France), one is Japanese, and one is Chinese (IFSL, 2010). Rankings by market capitalisation have been dominated since late 2007 by leading Chinese banks, with ICBC consistently at the top and China Construction Bank more often than not number two.[11] By end-September 2010, HSBC (ranked third) was the only 'European' bank in the top five, notwithstanding the fact that much of its activity is in Asia and its chief executive is based in Hong Kong. Santander was the only other European bank in the global top 10, and the smallest of that group, which otherwise includes two other Chinese institutions (Agricultural Bank of China and Bank of China) and four American ones (JPMorgan Chase, Bank of America, Wells Fargo, and Citigroup).

Another major structural difference between the United States and the European Union is the high degree of internationalisation of European banks, most of which takes place within the European Union. Table 3 (on the next page) illustrates the degree to which European banks have internationalised from their home base to the rest of Europe, less so in the rest of the world. The typical large European bank has less than half its activity in its home country; the corresponding proportion for US banks sample is above three-fourths.

This difference in the degree of internationalisation implies that cross-border ... bank respons

Table 3: International versus national sources of bank revenue, large global banks, 2009

EU Banks	2009 Assets (US$ bn)	Estimated share of total 2009 revenue (%): Home country	Rest of Europe	Americas	Rest of World
BNP Paribas	2.952	34	42	14	9
Royal Bank of Scotland	2.728	48	27	18	6
HSBC	2.356	25	11	34	31
Credit Agricole	2.227	49	38	4	8
Barclays	2.223	44	15	19	22
Deutsche Bank	2.151	26	41	22	11
ING	1.668	26	24	32	18
Lloyds	1.651	94	-	-	6
Societe Generale	1.469	43	39	9	9
Unicredit	1.439	49	41	n.a.	10
Santander	1.439	23	27	50	n.a.
Commerzbank	1.203	84	14	1	0
Intesa Sanpaolo	878	79	19	n.a.	2
Dexia	829	47	43	7	3
BBVA	760	41	n.a.	59	n.a.
Nordea	729	19	81	-	-
Danske Bank	597	54	40	-	6
Standard Chartered	436	6	3	3	88
EU Sample Average	1.541	44	28	15	13
US Banks	**2009 Assets**	**US (Home)**	**Rest of Americas**	**Europe**	**Rest of World**
Bank of America	2.223	82	1	8	9
JP Morgan Chase	2.032	75	2	17	6
Citigroup	1.857	32	20	25	23
Wells Fargo	1.244	100	-	-	-
Goldman Sachs	849	56	n.a.	26	18
Morgan Stanley	771	81	n.a.	11	9
US Bancorp	281	100	-	-	-
PNC Financial	270	100	-	-	-
Bank of New York	212	47	n.a.	37	16
BB&T	166	100	-	-	-
US Sample Average	991	77	2	12	8

Source: Forbes rankings, corporate reports, authors' calculations. Mauricio Nakahodo's research assistance is gratefully acknowledged.

Political systems

A more intangible but no less important factor of transatlantic policy differences is the difference in political systems, which leads to strikingly different decision-making processes and to different allocations of priorities. In most EU countries, the parliamentary nature of the regime means that the

Less well-documented is the way the respective political and financial systems interact and depend

noninterest revenue, proceeds from syndicated loan issuance, other assets, proceeds from bond issuance, and mortgages (ECB, 2006). In ECB (2007) six more indicators were added to cover cross-border assets, overnight lending contribution, market capitalisation, number of recorded subsidiaries, subordinated debt issuance, and trading income. The indicators were applied to a 2006 sample of 415 euro area and non-euro area banks, and cluster analysis was employed to demarcate the LCBGs from the others. In the end, the ECB (2007) wound up with 36 banking groups that were 'large and complex.' Twenty-one of those were headquartered in the euro area and 15 outside. A composite size measure, based on the 19 indicators, was also constructed for each of these 36 institutions and tests were conducted to see how that measure correlated with total assets (the traditional size measure). Despite the ECB's (2006) a priori argument that asset size alone was not likely to be a sufficient indicator for identifying LCBGs, it turned out that the R^2 between total assets and the composite size measure was about 0.93, indicating that asset size alone conveys a good deal of useful information.

A second example comes from Thomson (2009), who aimed to establish a set of criteria for designating US financial firms as 'systemically important'. He did not base these criteria on empirical studies but instead used his judgment to suggest measures of size, contagion, correlation, concentration, and conditions and/or context. A sampling from Thomson's criteria conveys the basic idea. His size threshold would be any of the following: 10 percent or more of nationwide banking assets; 5 percent of nationwide banking assets paired with 15 percent or more of nationwide loans; 10 percent of the total number or total value of life insurance products nationwide; and (for nonbank financial firms that were not traditional insurance companies) either total asset holdings large enough to rank it as one of the 10 largest banks in the country or accounting for more than 20 percent of securities underwritten over the past five years. On contagion, a firm would merit designation as systemically important if its failure could result in substantial capital impairment of other institutions accounting for a combined 30 percent of the assets of the financial system or the locking-up or material impairment of essential payments systems. Turning to concentration, Thomson (2009) would regard any financial firm as systemically important if it cleared and settled more than 25 percent of trades in a key financial market, processed more than 25 percent of the daily volume of an essential payments system, or was responsible for more than 30 percent of an important credit activity. However, it is not clear from the article how these thresholds were decided.

Example number three derives from chapter 2 of the April 2009 IMF Global Financial Stability Review (IMF, 2009). The IMF explores four approaches for measuring interconnectedness: (1) network simulations that draw on BIS data on cross-border interbank exposures and that tracks the reverberation of a credit event or liquidity squeeze via direct linkages in the interbank market; (2) a default intensity model that uses data from Moody's Default Risk Service and that measures the probability of failures of a large fraction of financial institutions due to both direct and indirect linkages; (3) a co-risk model that utilises five-year credit default swap (CDS) spreads of financial institutions and that assesses systemic linkages among financial institutions under extreme duress; and (4) a stress-dependence matrix that incorporates individual CDS and probability of default data, along with stock prices, to examine pairs of institutions' probabilities of distress. Among other findings, the IMF (2009) reports that (1) simulations with the network model confirm that the US and UK banking systems are the most systemic systems in terms of triggering the largest number of contagion rounds and highest capital losses; (2) the Belgian, Dutch, Swedish, and Swiss banking systems are relatively highly vulnerable to banking distress in other economies; (3) if Citigroup's CDS spread were at a very high level (the 95th percentile), this would lead (in a March 2008 simulation) to an increase of 390 percent in AIG's CDS spread and a 13 percent increase in

the CDS spread of Wells Fargo; si

Notes:

1. After the most recent list of LCFIs (B

Our fifth and last example refers to attempts to get a the list of SIFIs – presumably based on the kind

Here again, one objection to a TBTF capital surcharge is that financial firms paying such a surcharge will have their TBTF status further enhanced (from de facto to de jure) and that this official designation will provide them with a further unwarranted funding subsidy, thereby exacerbating the misallocation of resources. However, one can doubt how the list of surcharge payers could be very different than the market's existing perception of who is and who is not systemically important. Moreover, there is no reason why the surcharge needs to be zero-one; it can be graduated depending on the official sector's evaluation of the size, interconnectivity, and complexity of the individual institution, in which case there is no threshold between non-SIFIs and SIFIs, and no need for a list of SIFIs, public or otherwise. The IMF (2010a) has explored various alternative approaches to estimating the capital surcharge for large complex financial institutions, which present conceptual similarities to risk-based deposit insurance.

A second approach would be to create disincentives to bigness through tax or tax-like instruments. This would be especially relevant in countries that envisage setting up a new contribution, tax, or levy on financial institutions as a form of compensation for the public support they receive in the event of crises. However, considerations of tax fairness could play a role, at least in some legal environments, and limit the margin for governments to modulate the burden according to size or systemic importance. Those EU countries that have introduced a contribution from the banking industry so far, such as Sweden in 2009, have not decided to include a surcharge for systemic significance. In the United States a financial contribution from the financial industry was proposed by the Obama administration in January 2010 and debated by Congress, but was not included in the final version of the Dodd-Frank Act and remains an open option at this time.

Yet a third approach in this category is to use competition policy to curb the size of the largest financial firms. In the European Union, the European Commission has extensively used its powers since the beginning of the crisis to keep a check on state rescues and on the size of rescued firms. Specifically, it has required firms that received significant support from member states under the cover of safeguarding financial stability, such as RBS, WestLB in Germany, KBC in Belgium, or ING in the Netherlands, to trim the size of their balance sheets and divest important parts of their business portfolios. However, the commission has only acted in cases when the government guarantee has been made explicit, i.e., in a curative not preventive mode. Nor is it entirely clear at this stage to which extent TBTF concerns coved p

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not prohibit their organic growth in the future. It parallels and complements a preexisting cap of 10 percent of total domestic deposits that cannot be exceeded by some forms of external growth, introduced by the Riegle-Neal Interstate Banking and Branching Efficiency Act of 1994.

Some observers have suggested going further, by imposing size limits on systemically important financial institutions relative to GDP. Johnson and Kwak (2010) propose that the size cap for US commercial banks be set at 4 percent of GDP and that for investment banks the cap be set at half that (2 percent of GDP). Applied to the present US financial industry structure, this would require the six largest institutions, namely JPMorgan Chase, Bank of America, Citigroup, Wells Fargo, Goldman Sachs, and Morgan Stanley to shrink or split into separate entities. Goldstein (2010a) has favoured size caps for US banks along Johnson-Kwak (2010) lines, although he argues that he could live with somewhat higher caps.

While the size-cap proposal is controversial in the US context, it becomes even more so when viewed in an international environment. As emphasised in the previous section, many European countries have higher levels of banking sector concentration than the United States, and

concentration is positively related to the incidence of banking crises; if anything, the evidence goes the other way (Beck, Demirguc-Kunt and Levine, 2003). Also, foreign bank participation in national banking systems, which often involves comparatively larger financial institutions (Focarelli and Pozzolo, 2001), can be associated with higher financial stability. Persaud (2010) argues that contagion in a systemic financial crisis is an effect more of investor psychology (if firm A has a problem and firm B apparently carries the same type of risk, investors go short on firm B) than actual financial interconnections. Adair Turner, the chairman of the UK Financial Services Authority, has similarly argued recently that "there is a danger that an exclusive focus on institutions that are too big to fail could divert us from more fundamental issues" of precarious credit supply and corresponding macroeconomic volatility (Turner, 2010).

On the other hand, some analysts – such as Johnson and Kwak (2010), Stern and Feldman (2004), Group of Thirty (2009), and Goldstein (2010b) – stress that the better empirical studies on the economies of scale in banking finds such economies only for small banks and certainly not beyond $100 billion in asset size – to say nothing of the trillion-dollar-plus balance sheets of the world's largest banks (Berger and Mester, 1997; Amel et al, 2004; Herring, 2010). As banks become very large, diseconomies of scale can set in, particularly regarding ability to manage prudently and to implement effective risk-management systems. While the main motive for consolidation is usually described as maximisation of shareholder value, there is also evidence of other motives behind the trend toward larger, more complex financial institutions – such as the desire to avoid taxes and financial regulations, the drive for market power, and the link between firm size and executive compensation – which typically subtract from, rather than add to, social value. In this strand of thought, the defense of universal banks on grounds of diversification and 'economies of scope' across bank products and activities is a false hope. More recent research finds that markets impose a 'discount' on banks when they become more complex – not a diversification premium (Laeven and Levine, 2005). As noted earlier in this paper, measures of bank size and bank diversification have been positively (not negatively) correlated with income volatility during the 2006-08 period. Haldane (2010) finds that larger and more diversified banks have also shown greater write-downs of assets than smaller and less diversified ones. Some authors holding this view also argue that contrary to industry claims, large, complex financial institutions are not needed to service large, global financial businesses, and that the needs of those businesses can just as well be met by consortia of medium-sized banks without the excess baggage that TBTF institutions bring with them (Goldstein, 2010b; Johnson and Kwak, 2010).

An alternative perspective is to focus not on financial institutions' overall size but on the way critical market functions can become overwhelmingly reliant on a limited number of actors. For example, Tett (2010) notes that the triparty repurchase (or 'repo') market is predominantly cleared by only two large firms, JPMorgan Chase and Bank of New York Mellon. The systemic importance of that market is such that, as Tett notes, it is impossible to avoid massive moral hazard without a radical change of market structure. More broadly, Giovannini (2010) advocates a separation of all

regulators will rely on other types of incentives to limit the 'bigness' of financial institutions. Meanwhile, it looks like EU countries will continue to envisage the somewhat disruptive prospect of a mandatory break-up of large banks, given the already mentioned heterogeneity of country preferences linked to diverse cultures of national banking markets, and to the perception that prevails there that no sufficiently strong analytical basis is currently available for the assessment of both the costs and benefits of such an option. Softer curbs on the size of financial conglomerates, through a targeted adjustment of prudential, tax, and competition policy, will be insufficient to put an end to the TBTF problem but can at least somewhat correct the competitive distortions it creates. In Europe, more cross-border banking integration and centralisation of the supervision of the largest institutions at EU level would allay the current competitive tensions, and would make the TBTF issue less intractable than it currently is in individual EU member states.

V. THE 'FAILABILITY'[13] DEBATE: ALLOWING BANKS TO GO UNDER?

The second class of proposals to address TBTF relates not to the size of institutions, but to the possibility of their failure. If even huge financial conglomerates can fail without creating major market instability, then their bigness becomes less of an urgent problem. The financial crisis, and especially the successive decisions taken by the US authorities on Bear Stearns, Lehman Brothers, and AIG, has illustrated both the difficulties of applying a consistent policy framework to all crisis situations without creating massive moral hazard, and the disadvantages of taking different stances in different cases.

Failure and competition

It is difficult to separate the debate about the possibility of financial institution failure from a more general conversation about competition in the financial industry, which is made more complex by its multifaceted links with financial stability. Competition simultaneously imposes discipline on financial firms, and can foster excessive risk taking. A bank failure can increase concentration, or on the contrary, provide opportunities for new entrants, depending on how open and competitive the banking system is in which it takes place. In a system where all or most of the financial industry is in government hands, an actual bank failure is virtually impossible and a government bailout is almost guaranteed.[14]

In many EU countries, the financial sector has long been sheltered from competition policy (Carletti and Vives, 2008), and the more assertive stance of the European Commission's Directorate General for Competition (the EU competition authority) since the late 1990s is too recent to have had structural impact in all the European Union's financial systems. Many specific features, even when considered compliant with EU competition policy, restrict the competitive field. For example, German savings banks are generally considered autonomous from one another (see for example in the ECB's statistics of banking concentration in the euro area in ECB, 2010), but the so-called 'regional principle' prevents each of them from proposing or supplying se

novo' banks being created at the local level in the United States.

A large sector enquiry carried out by the European Commission between 2005 and 2007 found major competition barriers in many countries in several areas including payment cards and payment systems, credit registers, product tying, and obstacles to customer mobility (European Commission 2007). Competition issues are also present in US retail financial services, but the large size and relative openness of the national market, near-continuous emergence of new entrants, and provision of many financial services by nonbanks contributes to a generally more competitive playing field than in most EU countries.[15] In wholesale financial services, the difference is less apparent as indeed many of the most prominent actors are the same on both sides of the Atlantic.

Special resolution regimes

As mentioned above, special resolution regimes administered by an out-of-court resolution authority appear better adapted to the conditions of financial firms than ordinary corporate bankruptcy processes. As analysed in Cohen and Goldstein (2009), this is primarily because bankruptcy processes pay little attention to third-party effects that are the essence of systemic risk; because creditor stays, and their potential adverse systemic effects, are part and parcel of the bankruptcy process; because bankruptcy procedures move too slowly to protect the franchise value of the firm; and because bankruptcy does not permit pre-insolvency intervention. However, resolution authority should not be seen as a panacea, if only because it may sometimes be difficult to implement in a way that simultaneously supports market discipline and avoids the contagion effects that financial stability policy is intended to minimise. Supporting market discipline usually is interpreted to mean wiping out shareholders, changing management, and paying off creditors (promptly) at estimated recovery cost (not at par). It may also entail not selling the failing firm to one of the larger players in the field. And it is also increasingly seen as meaning that the resolution authority should be funded in part with ex ante and/or ex post fees on financial institutions so that the financial sector, rather than the general government budget, pays the lion's share of the costs. However, in some crisis scenarios, policymakers may shy from following through on some of these measures (for example, imposing haircuts to senior bondholders) out of concern that they may precipitate 'runs' on similar instruments in other firms. This appears to have been the case when the EU authorities insisted that the Irish rescue package of November 2010 should not include the imposition of losses on the holders of senior debt issues by Ireland's banks. Ultimately, the proof of the pudding will be in the eating.

The US Dodd-Frank Act introduces a new procedure in effect that allows US authorities to apply a special resolution procedure to systemically important nonbank financial institutions, on the initiative of the Secretary of the Treasury subject to approval of its systemically significant status by a special panel of bankruptcy judges (and of the newly formed Financial System Oversight Council). Once agreed, the resolution procedure would be administered by the FDIC.

In the European Union, the situation varies widely from one country to another but new resolution regimes, for either banks or systemically important financial institutions or both, have been introduced recently or are being introduced through new legislation in Sweden, the United Kingdom, Belgium, and Germany. It is likely that other countries will follow suit in the near future. The idea of

15. In fact, in the US case, one of the most oft-cited concerns about tougher new financial regulations—be they size related o otherwise—is that it will prompt a large (and undesirable) migration of financial activities to the "shadow" banking system. Indeed, for that very reason, some analysts (e.g., Hanson, Kashyap, and Stein, 2010a) have proposed that such regulations be defined on a "product" basis so that they bite equally across the banking and nonbanking sectors.

an integrated EU bank resolution framework recently been forcefully endorsed by the IMF

take;
- € identify key interconnections across affiliates (such as cross-guarantees, stand-by lines of credit, etc.), along with operational interdependencies (such as information-technology systems);
- € contain provisions for developing and maintaining a virtual data room that contains information that the resolution authority would need to expeditiously resolve the entity;
- € identify key information systems, where they are located, and the essential personnel to operate them;
- € identify any activities or units deemed systemically relevant and demonstrate how they operate during a wind-down;
- € consider how its actions may affect exchanges, clearing houses, custodians, and other important elements of the infrastructure; and
- € be updated annually, or more often if a substantial merger or acquisition or restructuring adds extra complexity.

As this list illustrates, the creation and maintenance of living wills could represent a significant administrative burden for financial institutions, and there will be tradeoffs as to how the requirements will be implemented. The fundamental difficulty is that the resolution strategy is, in many aspects, dependent on the actual features of the crisis in which it would take place. For example, selling certain assets early in the resolution process may depend on whether the markets for these assets remain liquid, which itself is dependent on the specific crisis scenario. As 19th century Prussian General Helmuth von Moltke famously quipped, "no campaign plan survives first contact with the enemy." If orderly resolution plans are very detailed, they might not withstand the first contact with a real crisis. If they stay general and do not provide detail, they might not be able to serve their purpose.

The magnitude of the challenges is compounded by international complexity, which is a common feature of many SIFIs. The Lehman Brothers bankruptcy has illustrated the potential for considerable difficulties to arise from the internal interdependencies that must be unwound in the resolution process. While there may be exceptions, this difficulty is in general vastly more pronounced in investment banking than in retail services. As retail operations are local in nature, it can be relatively easy to ring-fence them in the resolution process even if some functions, such as information technology and some aspects of risk management, are provided on a cross-border basis. Global banks with significant retail operations, such as Citi, HSBC, or Santander, often claim that they would be fairly easy to wind up on a country-by-country basis in the event of major financial difficulties – even though this claim is ultimately unverifiable, at least for outside observers, as long as no such process has been tested in real conditions. For investment banks, however, the ability to manage complex and fast-moving cross-border linkages is a core part of the business model and of the value proposition to customers, and for that reason their orderly resolution on a transnational basis is almost by definition a highly problematic endeavour. In effect, there is no relevant precedent. Cross-border banking resolutions have been extremely rare, and generally horribly messy as in the case of Herstatt Bank in 1974, Bank of Commerce and Credit International in 1991, or indeed Lehman Brothers. Conversely, resolutions that have happened in a relatively orderly way, such as Washington Mutual or Caja Sur, have generally been largely managed within a single country.

One probably inevitable consequence of the emphasis on resolvability is growing host-country insistence on autonomous capitalisation and funding of local operations of international banks, certainly in retail activities but also, perhaps increasingly, for wholesale business as well. In some

cases this can take the form of conversion of branches into subsidiaries – especially since the Icelandic crisis brought home the importance of host-country control and protection of local depositors. This will rightly worry advocates of cross-border financial integration, as it may hamper the international intermediation role of financial firms, but the importance of protecting local stakeholders will, in most cases, weigh heavier than concerns about financial fragmentation.

It remains to be seen whether this same model will be applicable to intra-European Union (or perhaps intra-European Economic Area) activity. On the positive side, there is both a higher degree of commitment to cross-border financial integration and the creation of a single financial market, and there is more of a legal, regulatory and (to some extent) political infrastructure to credibly oversee the financial sector at the supranational level. From this perspective, the creation of the European Banking Authority is probably a step toward a more integrated future supervisory and crisis management framework. In such a framework, we would see a clearer division between financial institutions with a national or local reach, for which supervision shall remain at national level, and 'pan-European' ones, which would be at least partly supervised at

that may fail its purported objective when tested under stress.

At this stage, it seems prudent to see contingent capital and bail-ins as possible complements to other TBTF antidotes such as capital surcharges for SIFIs, special resolution regimes, and orderly wind-down planning, rather than substitutes, and consider whether they stand the test of the marketplace, which is too soon to assess at the time of writing.[16]

VI. CONCLUDING REMARKS

In its report for the Seoul Summit in November 2010 (FSB, 2010f), the FSB acknowledged the difficulty of addressing the TBTF problem on a transnational basis and recommended a focus of international discussions on what it termed 'global SIFIs' or 'G-SIFIs,' which exclude institutions that are systemically important in a domestic context but have limited international activity (say, Japan Post or the large Chinese banks). This limited agenda underlines the prospect for divergence of practice and implementation in the years ahead, including between the United States and European Union, and to some extent also among EU member states. This need not necessarily be a fatal problem. A global, level playing field in finance is a worthy ideal, but it remains a vision rather than a reality and will remain so for some time. The IMF (2010a) notes that tax rates on the financial sector in advanced economies differ markedly from one another, without resulting in massive moves of financial institutions changing their location in response to these differences. Within the European Union, there is a need for a higher degree of harmonisation, and leaders have committed to the notion of a 'single rulebook,' even if this is unlikely to include tax and bankruptcy arrangements for some time. Elsewhere, regulatory constrains will continue to vary widely, including between both sides of the Atlantic. In a politically heterogeneous world, such variations have to be accepted as a necessary evil.

The adoption of binding 'bigness' caps that would cut SIFIs down to a more limited size do not seem likely on either side of the Atlantic, at least in the next few years. In the United States, where hard size caps are viewed perhaps the most favourably, it appears improbable that officials will go beyond the market-share funding caps that are in the Dodd-Frank Act – at least until the more comprehensive approach to deterring TBTF in this legislation has had enough time to be tested. In the European Union, size caps are highly unlikely if measured in terms of assets (or another yardstick) to national GDP. It may be more promising over the longer term to envisage caps defined by size to EU GDP, even though they would not correspond to the current pattern of bank rescues. If this happens, it is likely that such caps would at least initially be set at a relatively high level, comparable to the existing limits applicable to American financial institutions in terms of share of total US deposits and liabilities (10 percent in each case).

There are somewhat higher prospects for change regarding other forms of constraints on the structure of financial conglomerates, namely incompatibilities between certain lines of business corresponding to different types of risk exposures within the same group, akin to the Volcker Rule now adopted in the United States. Giovannini (2010) makes a strong argument for this category of curbs, and we believe an active debate will develop on this issue, not only in the United Kingdom (which has put it on the agenda of its Independent Commission on Banking) but possibly to some extent in the rest of Europe as well, in spite of the dominance of the universal banking model. That said, such functional separation is not about TBTF in a strict sense and is therefore beyond the scope we gave ourselves in this paper.

We also regard the argument for a comprehensive approach toward discouraging TBTF as

16. See for example Jones 2010.

compelling enough to expect several initiatives to be adopted in the United States and in several, perhaps all, EU member states. These may include capital surcharges as floated by the Basel Committee, even though they are now fiercely resisted in several parts of the European Union; more-than-proportional levies on large banks, in those countries that would introduce such mandatory contributions; and an assertive conduct of competition policy, at least at the EU level, to put a check on excessive intracountry bank concentration (while still favouring cross-border integration). A transparent designation of SIFIs in Europe would have the additional advantage of raising public awareness of the disturbing number of European banks that are indeed systemically important, including most household brand names. This may, in

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