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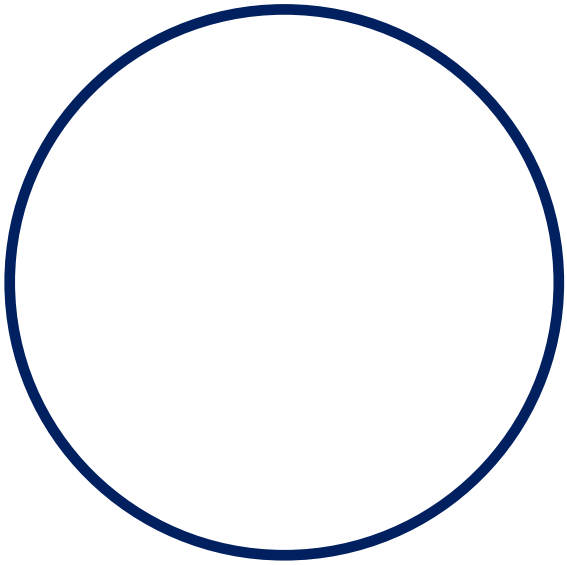

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Could Size Ceilings Make the TBTF Regime More Effective?

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Could Size Ceilings Make the TBTF Regime More Effective?

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December 2023

Abstract

The article examines the use of size ceilings for banks as a regulatory tool to enhance the effectiveness of the too big to fail (TBTF) regime. It introduces the concept of systemically important banks (SIBs) and explores the essential features of TBTF regime. The paper argues that the optimal size of a bank from a business perspective may differ from its socially optimal size. Furthermore, it is argued that due to the challenge posed by a potential bailout, there is a legitimate public interest in the home country of a SIB to prevent the bank from growing beyond a socially acceptable and sustainable size. The article also provides a brief discussion of recent events in Switzerland related to the Credit Suisse crisis, where the effectiveness of the TBTF legislation was called into question

Keywords: Too big to fail, Too big to save, TBTF regime, systemically important banks, bank regulation

JEL-Classification: G18; G28; L51

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Content

Could Size Ceilings Make the TBTF Regime More Effective?

1. Introduction

In September 2009, Adair Turner wrote that one of the most important challenges for global banking regulation and supervision was how to cope with too-big-to-fail (TBTF) systemically important banks (SIBs). Claudia Buch, Vice-President of the Deutsche Bundesbank, recalls in 2020 the situation where systemically important banks *"... were weakly capitalized, resolution regimes for banks were missing, and taxpayers' money was often used to bail out banks.*" Reporting a evaluation of the TBTF reforms by the Financial Stability Board (FSB), she comes to the conclusion that the reforms appear to be working. Higher capital requirements, enhanced supervision, and new regimes for the recovery and resolution of banks have achieved their objectives. Buch summarizes that authorities now have a much wider range of options to deal with banks in distress. The TBTF reforms brought benefits to society and are seen as credible by market participants. However, the report states that the resolution of SIBs is a complex process, and obstacles to resolvability remain (FSB, 2020).

Following the financial crisis of 2007/2008, the Swiss legislator promulgated special rules for the stabilization and restructuring of SIBs. Efforts have been made to enhance resolution frameworks for SIBs. These frameworks aim to provide a mechanism for the orderly resolution of failing banks, minimizing the systemic impact and reducing the need for taxpayer-funded bailouts. During the crisis of 2008, the Swiss systemically important bank UBS had to be bailed out using taxpayers' money. The UBS rescue plan provided for the transfer of CHF 45.9 billion of the bank's illiquid assets to a stabilization fund controlled by the Swiss National Bank (SNB). The federal government strengthened UBS's capital base with CHF 6 billion. Yet, when Credit Suisse recently found itself in an acute crisis of confidence, the TBTF law proved to be ineffective. Clients and investors lost confidence in Credit Suisse, triggering a veritable run on the bank, which posed an immediate threat to the bank's liquidity situation. During a press conference on April 5th, 2023, in Bern, the Swiss Finance Minister Karin Keller-Sutter summarized the debacle in simple terms: "*Now we have a case where this 'Too Big to Fail' legislation does not properly reflect the situation. The tools can hardly be applied*." Her conclusion is that if the 'Too Big to Fail' rules had actually been applied to Credit Suisse, it would have almost certainly triggered a financial crisis.

The crises led to a takeover of Credit Suisse by UBS, supported by a public liquidity backstop. The Swiss Federal Department of Finance (2023a) evaluates the merger very optimistically by stating, *"... it will strengthen confidence in the financial system and create stability for the international financial system, thereby averting serious consequences for the Swiss economy.*" At the same time, the merger will keep the cost for the state and taxpayers as low as possible. When two SIBs merge, resulting in the creation of a mega-bank in a relatively small economy like Switzerland, while at the same time not ruling out the possibility that the TBTF legislation may prove inapplicable in times of crisis, there is a need for a new assessment and critical reflection. This is the challenge that the present chapter undertakes.

The present paper is structured as follows: Section 2 provides some introductory remarks on the nature of systemically important banks (SIBs). The failure of a SIB can significantly impact the monetary, fiscal and macroeconomic stability of an economy in different ways. It can have far-reaching implications not only for the domestic economy but inversely affect the global finical system. Section 3 introduces the TBTF regime. Subsection 3.1 illustrates that when large banks are protected from market exit through a TBTF regime, the market is no longer able to fulfill its disciplining function. TBTF thus undermines the foundations of a competitive system. Subsection 3.2 demonstrates how TBTF regimes legitimize themselves despite their shortcomings by preventing the high costs associated with the bankruptcy of SIBs. Subsection 3.3 compares the costs of bank failure to the costs of the TBTF regime. The TBTF regime potentially imposes high fiscal and macroeconomic costs when rescue measures are applied. This clearly shows that TBTF regimes are a burden to society, albeit a bearable one. Section 4 reveals that banks can potentially expand to dimensions that exceed the bailout capacity of the state. The TBTF problem then evolves into a too big to save (TBTS) problem. TBTS highlights the challenges faced by policymakers in finding viable solutions to prevent the failure of a SIB. Section 5 raises the question of whether size ceilings for banks can be a solution to the TBTF problem. Finally, the paper briefly addresses the recent events in Switzerland concerning Credit Suisse. Section 6 concludes.

2. Systemically Important Banks

Goodhart (2014) and Goodhart et al. (2006) emphasized that the specific structure and dynamics of the financial sector can generate inherent instability and vulnerability. The financial system is characterized by the endogenous nature of risk. The impact of maturity transformation and

high leverage faced by banks magnifies shocks, making banks vulnerable to insolvency[1] and illiquidity[2]. The distress of a single bank can significantly disrupt the functioning of the financial system and cause widespread economic damage. Likewise, changes in the real economy can influence financial conditions, asset valuations, and risk perceptions. The interplay between the financial sector and the real economy leads to feedback effects in the sense that financial variables affect investment decisions, consumption patterns, and overall economic activity. The crisis of 2008 taught us that the collapses of a few large and systemically important banks can impose high costs on the global financial system.

The IMF, BIS, and FSB (2009) listed the size of a bank as the number one factor of systemic relevance. However, the precondition for systemic relevance is a kind of 'qualified' size. The FSB assesses banks for their systemic importance based on a set of indicators and methodology established by the Basel Committee on Banking Supervision (BCBS). The methodology considers various factors to determine a bank's systemic importance, including size, interconnectedness, global activity, complexity, and substitutability (BIS, 2020). SIBs have substantial interconnections with other financial institutions, so their failure can have cascading effects throughout the financial system, triggering a domino effect that leads to the failure of other institutions and potentially causing a financial crisis. To prevent contagion, public authorities may be compelled to provide financial support or bailouts to SIBs to prevent their failure and mitigate the systemic risks they pose. In the end, SIBs can become so large and interconnected that policymakers perceive them as being too important to allow them to fail, earning them the notorious label of being "too big to fail."

The specific methodologies and criteria used to identify SIBs may vary across jurisdictions, as they are ultimately determined by national or regional authorities. The FSB (2020) distinguishes Globally Systemically Important Banks (G-SIBs) and Domestically Systemically Important Banks (D-SIBs). G-SIBs are banks that are deemed to have a global impact on the stability of the financial system. They are subject to additional regulatory requirements and heightened supervisory oversight due to their potential impact on the global financial system. The FSB uses

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1 A financial institute is solvent where it meets the applicable capital adequacy requirements. A serious problem of insolvency arises when a valuation of assets at liquidation values casts doubts on the coverage of creditor claims (SFBC, 2008). Heller and Kuhn (2009) point out that in a crisis situation, it is often difficult to distinguish between solvency and liquidity problems.

2 According to the SFBC (2008), a serious liquidity problem arises where a bank is no longer in a position to meet its payment obligations; existing liquidity no longer covers obligations that are payable (or will soon be payable) and the bank is unable to procure liquid assets under market conditions. A bank may be solvent yet still be illiquid.

threshold scores to determine which banks are designated as G-SIBs. It provides guidance and promotes coordination among relevant national authorities to ensure consistent approaches to the identification and supervision of systemically important banks (G-SIBs). The FSB designates a list of G-SIBs that is regularly updated, reflecting changes in the risk profiles and systemic importance of banks. The publication of the G-SIB list provides transparency about the banks that are considered systemically important and subject to additional regulatory requirements.

D-SIBs are banks that are deemed to have a significant impact on the stability of their domestic financial systems. The identification and characterization of D-SIBs are primarily the responsibility of national or regional authorities. Different countries may have their own methodologies and criteria for assessing domestic systemic importance, such as the size of the bank relative to the domestic economy, interconnectedness with other financial institutions, importance for providing critical services, and the potential for contagion within the domestic financial system. The FSB encourages its member jurisdictions to identify and designate D-SIBs to ensure appropriate regulatory and supervisory measures are in place to mitigate systemic risks at the national level. Each bank is assigned a score based on these factors, and the higher the score, the greater the bank's systemic importance.

3. What Characterizes the TBTF Regime?

The term TBTF was originally coined in the USA in the 1980s and later famously used by American Congressman McKinney at a hearing in connection with the Continental Illinois crisis (COP, 2009). It stands for "*too important to the stability of the financial system on account of its size for the institution to be allowed to fail into insolvency by the government.*" The TBTF problem provokes a TBTF regime where authorities put a set of policies, regulations, and practices in place to address the systemic risks posed by SIBs. The primary objective of this regime is to safeguard financial stability by mitigating systemic risks that arise from the interconnectedness of banks with other financial entities, their size, and their critical role in the functioning of the economy (Kellermann, 2011).

According to Stern and Feldman (2004), a TBTF regime is a policy environment in which uninsured creditors expect the government to protect them from prospective losses from the failure of a big bank. A TBTF regime is thus characterized by the following three attributes:

Firstly, the institution at risk of illiquidity and insolvency is assessed as TBTF. These institutions will generally be SIBs. SIBs are typically identified based on criteria set by regulatory authorities and are subject to enhanced regulation and supervision to mitigate the risks they pose.[3]

Secondly, there are regulation, supervision, and protection measures: Various measures are implemented by national authorities to increase the resilience of SIBs, such as stricter capital and liquidity requirements, enhanced risk management practices, and stress testing. The goal is to reduce the likelihood of SIBs failing. The measures are intended to prevent the collapse of the institution. However, there are also resolution frameworks in TBTF regimes. Resolution frameworks refer to the established mechanisms and procedures put in place to manage the potential failure of SIBs without causing severe disruptions to the overall financial system and economy. It consists of a resolution authority, bail-in mechanisms, and so-called "living wills." The living will provide information on the SIB, enabling the resolution authority to resolve the bank in an orderly manner (BIS, 2023; FINMA 2020). However, the feasibility and effectiveness of a resolution mechanism for SIBs remain a controversial topic. The concept of systemic importance and the resolution of banks seem challenging to align, which makes the idea of a resolution mechanism for SIBs not really convincing. SIBs are highly complex institutions with interconnections in various areas of the financial system. An orderly and effective resolution of such banks is extremely difficult. Unwinding a SIB in distress will most certainly destabilize other institutions and markets. The risk of bank runs or panic selling will always loom.

Thirdly, there are the parties that are affected or benefit directly from state bailouts: SIBs potentially benefit from the TBTF regime and bailouts, particularly the creditors, shareholders, employees, and the management boards of TBTF institutions. Bailing out large institutions can create moral hazard with respect to decision-makers. The moral hazard problem has received a great deal of attention in the literature (Cordella and Yeyati, 2003). By knowing that they will probably be bailed out in case of trouble, a TBTF regime may encourage investors, owners, and managers to take risks. It thus potentially weakens market discipline.

[3] SIFI (Systemically Important Financial Institution) is a broader term that encompasses not only banks but also other types of financial institutions, such as insurance companies, investment banks, and other non-bank financial entities. SIFI designation is applied to institutions that, if they were to experience financial distress or failure, could significantly disrupt the stability of the financial system. Like SIBs, SIFIs are subject to heightened regulatory oversight and may be subject to additional regulatory requirements.

3.1 Avoiding Market Exit

The ultimate aim of a TBTF regime is to prevent SIBs from experiencing a market exit and avoid systemic consequences. The TBTF regime must thus be justified based on the high social costs associated with the market exit of SIBs. These costs make it socially unacceptable for a bank to exit the market in case of failure. However, free market exit is vital for the efficient functioning of the market. It is a fundamental aspect of the freedom to compete and participate in economic activities. In the case that a conventional company is unable to meet its financial obligations and becomes insolvent, it undergoes a bankruptcy process, which involves the orderly resolution of its affairs and a forced market exit. In this case, the company leaves the market without significant barriers or constraints.

According to Schumpeter (1911), market exit is an important aspect of the process of creative destruction, fostering innovation, productivity, and overall economic growth. When unsuccessful firms exit the market, resources are freed up and can be reallocated to a more productive use. By ruling out market exit, the TBTF regime undermines this important function of market economies. The TBTF regime restricts the reallocation of resources from poorly managed banks to more prudently managed banks. Hildebrand (2009) expresses this dilemma as follows: "If we are committed to a market-based system, the financial system of the future must expose financial institutions of all sizes and structures to the ultimate test of the marketplace. The very definition of a market economy is that it must allow for failure as a sanction for excessive risk-taking or managerial incompetence. In the event that large, systemically relevant financial firms face the threat of failure in the next crisis, the financial system of the future must allow for their orderly resolution. Such a system needs to ensure that the failure of a large bank does not have serious negative consequences for the provision of financial services to the real economy."

3.2 Social Costs of a Bank Failure

In the context of a TBTF regime, policymakers and regulators assess the social costs associated with the failure of a SIB. They evaluate whether the social costs of allowing a bank to fail are acceptable. If these costs reach a socially unacceptable threshold, a bank bailout should be implemented. The social costs of the failure and consequently the market exit of a bank comprise internal and external costs (Kellermann, 2010). Internal costs include the common

costs associated with the firm's bankruptcy, which are borne by the owners, creditors, depositors, and employees of the bank. External costs are passed on to society. The failure of banks can disrupt the financial system and generate costs for other financial institutions through contagion. From a macroeconomic perspective, bank failures can lead to recessions, higher unemployment rates, and reduced economic growth. Bankruptcies can result in layoffs, leading to increased demands for unemployment benefits and retraining programs for employees. A credit crunch can place a massive strain on growth. Central banks often find it challenging to implement and execute monetary policy during financial crises, which can lead to difficulties in controlling inflation, managing interest rates, and maintaining overall financial stability. Furthermore, disruptions to the payment system can have adverse effects on the real economy (Swiss Federal Council, 2008).

In the fiscal context, a further category of costs arises. The government's ability to collect tax revenues, meet budgetary targets, and implement fiscal policies can be severely impaired. Indirectly, fiscal costs arise due to growing needs for state expenditure on socio-political measures. This potential burden on the public budget generates fiscal repercussions. Governments may also be forced to intervene with emergency measures, such as providing liquidity support to firms. These support measures can strain public finances, increase government debt, and potentially limit the government's ability to pursue its fiscal objectives.

3.3 Policy Measures to Prevent a Bank Failure

The TBTF regime aims to prevent bank failure or avoid the described high costs associated with the failure of a SIB. Stern and Feldmann (2004), distinguish three policy measures as central feature of a TBTF regime: *Firstly*, measures taken by the central bank in providing liquidity to banks and maintaining financial stability. One of the primary functions of a central bank is to act as the *lender of last resort* (Heller and Kuhn, 2009). Central banks also use open market operations to inject liquidity into the banking system, they can adjust reserve requirements and maintain a discount window, which is a facility where banks can borrow directly from the central bank in times of need. Central banks also provide standing facilities, such as the overnight lending facility or the deposit facility. They further may offer longer-term loans or special liquidity programs to support banks facing sector-specific challenges or liquidity shortages due to external shocks. The goal of these liquidity-providing measures is to maintain the stability and smooth functioning of the financial system.

Secondly, governments can provide financial support to troubled banks by injecting capital directly into the institution. This can be done through the purchase of preferred shares, common equity, or other financial instruments. The governments´ aim is to bolster the bank's capital base and to increase its solvency to restore confidence in the institution.

Thirdly, governments may further provide guarantees on a bank's assets, such as loans or securities to stabilize the bank's balance sheet and prevent a sudden withdrawal of funds by depositors. In extreme cases, governments may even temporarily nationalize a troubled bank to protect depositors, and prevent a complete collapse. Once the bank's condition improves, it may be reprivatized or restructured.

4. Approaching the Threshold of "Too big to save"

In this chapter, we discuss the issue of TBTF in light of recent events: In May 2023, a bank of gigantic proportions emerged in Switzerland after the merger of UBS and Credit Suisse (CS). The fusion, driven jointly by the SNB, and Financial Market Supervisory Authority (FINMA), creates a significant concentration risk for the Swiss economy. For Switzerland the TBTF problem thus has intensified. If the new UBS were to encounter a crisis, Switzerland would most likely face massive macroeconomic and fiscal imbalances. Thus, the question arises whether the new megabank is sustainable for Switzerland and the Swiss safety net. Would Switzerland be capable of rescuing the new behemoth in case of emergency or could it be that the new Megabank has become too big to save?

The term "too big to save" or "too big to rescue" suggests that even though financial institutions may be considered too big to fail, their size and complexity make them difficult or costly to rescue or bail out in times of financial distress. The concept of TBTS is related to the idea that certain institutions or entities can become so large, complex, or interconnected that it becomes extremely challenging or impractical for governments or regulators to effectively rescue or bail them out in the event of a crisis or financial distress (Pozen, 2010). In this case, size and complexity of an institution exceed the capacity of the government to intervene and provide financial assistance. The banks stress can then cause significant problems for its host country and even challenge its monetary and fiscal autonomy (Figure 1).

4.1 Too Big to Save and Country Size

Different challenges may potentially restrict the ability of governments to provide adequate support or bailout packages to institutions of significant size and complexity. Let's briefly summarize the main challenges: Firstly, the legal frameworks governing bailouts can pose obstacles to rescuing SIBs. These frameworks may have limitations or conditions that make it difficult for governments to intervene effectively. Secondly, political considerations and public opinion can reduce the willingness of governments to intervene in the rescue of SIBs. The fear of public backlash or the perception of rewarding risky behaviour can create hesitancy in providing support. Furthermore, governments may be reluctant to intervene due to concerns about encouraging moral hazard behaviour. The existence of TBTF regimes can make SIBs more prone to taking on excessive leverage and engaging in risky activities. To avoid moral hazard, governments try to limit their support to banks. However, the problem of TBTS is particularly valid for small countries or those with deteriorating public finances. Small countries with large banks are particularly vulnerable because their relatively limited financial resources may prevent them from providing adequate support or bailout packages to institutions of significant size and complexity (Demirguc-Kunt and Huizinga, 2008).

An illustrative case is Iceland's banking crisis, which exemplifies a situation where the authorities considered the banks too big to save. The crisis, occurring in 2009, was a complex event with multiple contributing factors. The three largest banks in Iceland, Glitnir, Landsbanki, and Kaupthing, had grown rapidly and accumulated significant debt, leaving them highly vulnerable to the global financial turmoil. The size and interconnectedness of these banks played a role in the challenges faced during the crisis, alongside factors such as excessive risk-taking, regulatory weaknesses, and external shocks (Baudino et al., 2020). The Icelandic government faced significant challenges in rescuing these banks due to their size and the magnitude of their financial difficulties. Eventually, the decision was made not to bail out the banks, leading to their collapse. The authorities believed that the banks had become too big and too intertwined with the rest of the economy, posing a risk to the country's financial stability. Concerns about burdening taxpayers and the risk of moral hazard influenced the decision to opt for alternative measures such as capital controls, currency devaluation, and prioritizing domestic depositors over foreign creditors. This approach differed from the traditional bailout strategies employed by other countries during the global financial crisis (Boyes, 2009).

The Icelandic case clearly illustrates how the insolvency of a systemically relevant bank can jeopardize a country's fiscal autonomy and its currency. Iceland sought financial assistance from the IMF and implemented realignment measures under the terms of a standby arrangement with the IMF (IMF, 2008). The OECD (2009) recommended that if Iceland were to become an EU member, it should join the euro area to benefit from the economic advantages, including the credibility of the European Central Bank and lower risk premiums. In conclusion, the challenges faced in providing support or bailout packages to large and complex institutions highlight the need for careful consideration of alternative approaches and regulatory tools to effectively address the TBTF problem.

4.2 Too Big to Save and Market Discipline

From a theoretical perspective, large banks should suffer from being located in a small country or a country that runs large government deficits. Both limit the location's capacity to insure the bank against insolvency. Governments may be forced to resolve bank failures in a way that implies large losses to bank creditors. In this case banks may gain shareholder value by downsizing or splitting up. In downsizing banks reduce risks for themselves and stay able to rely on the financial safety net. Thus, one would expect banks in small countries to face market pressure to downsize until they escape the TBTS status. However, Demirguc-Kunt and Huizinga (2008) find that banks – independent of their specific location - grow beyond the size that maximizes their implicit subsidy from the financial safety net. The research suggests, that relying on the disciplining forces of the market seems to be the wrong way to solve the TBTS. Rather, the TBTS problem highlights the importance of appropriate regulatory tools. Adequate policies that address the risks posed by excessively large and interconnected institutions need to be developed and implemented in time.

The TBTS problem emphasizes the need to rethink the TBTF regime. The dilemma facing policy makers is that if ongoing reforms do not credibly eliminate the ‘too big to fail’ problem the ‘too big to save’ problem may become the cause of an inability to deal effectively with the resolution of SIBs in an upcoming crisis. In case of emergency, to orchestrate a rescue without creating further instability or contagion effects can become overwhelming for authorities. Vanberg (2009) therefore proposes that state liability guarantees for G-SIBs as part of a TBTF regime be transferred to supranational bodies. FINMA CEO Urban Angehrn states in July 2023: “*The events surrounding Credit Suisse show how important it is to make concrete preparations*

for crises. This meant that the authorities had options on the table with the restructuring plan and with the emergency plan that simply did not exist ten years ago. At the same time, it is clear that there are important lessons to be learned from the Credit Suisse crisis for future crisis preparations."

5. Size Ceilings as Regulatory Tools

In general, economists take one of the following three positions regarding the TBTF problem: Each of these approaches can be assigned a specific regulatory strategy (Fisher, 2010). *Too big to fail is too big to exist*: The TBTF characteristic should not be allowed for any financial institution. This can be achieved either by developing specific resolution procedures for systemically important banks (FINMA, 2009; FSA, 2009; Kunz, 2010) or through size limitations. Advocates of this position as Fisher (2010), Hoenig et al. (2009), Johnson and Kwak (2010), and Reich (2010) argue for direct or indirect size limitations on SIBs. *Too big to fail is here to stay*: Some economists, such as Krugman (2009), believe that the TBTF problem cannot ultimately be addressed through size limitations. Classic market discipline or "autopilot" as Krugman calls it cannot be implemented even if banks are limited in size due to the specific network character of the banking system. It generally has to be accepted that certain institutions are TBTF. Regulatory efforts must thus focus on reducing the probability of impending insolvency for banks. Possible regulatory instruments for this purpose include stricter capital and liquidity requirements, increased transparency in financial markets, and improved and internationally coordinated supervision (BCBS, 2009). The third position some economists take is "*TBTF pays"*. They emphasize the macroeconomic benefits of large banks and the danger of overregulation (Dimon, 2009; Rajan, 2010). In good times, these benefits are gladly enjoyed by national economies. Big banks are considered a source of wealth and prosperity. However, these benefits do not come without risks. The empirical literature provides numerous studies that demonstrate risk transfer between the state and the banking sector. Using Data on CDS on bank and government bonds interlinkages become visible (Claessens et al., 2010; Völz and Wedow, 2009).

Each of the three positions has its justification and deserves to be considered in the policy debate. The problem becomes more straightforward when assuming systemically important banks that have reached a size which stretches the rescue capacities of its host country to the limits. If the TBTF problem evolves into the TBTS issue, the policy interest should be to reduce

bank size. Regulation should aim on constraining the size or scale of banks below the TBTS-threshold, where governments' abilities to stabilize the banking system cannot be doubted.

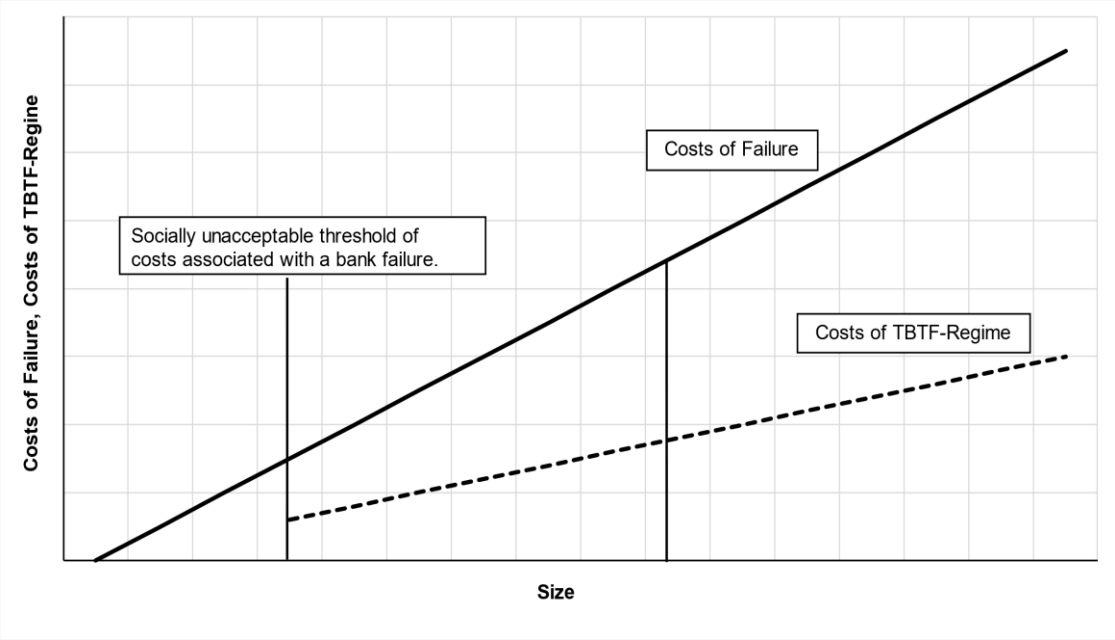

Figure 1

Costs of Failure and Costs of TBTF-Regime

Direct and indirect measures are suggested (Hoenig et al., 2009): *Indirect size limitations* aim to amplify business-related disadvantages of larger sizes. This can be achieved through progressively size-dependent capital and liquidity requirements. It is also conceivable to impose special taxes on large banks. Indirect size limitations thus leverage the steering function of taxes and regulatory costs (Acharya et al., 2010). Explicitly removing liability limitations for owners and managers of banks can also create incentives for size reduction. *Direct size limitations* directly intervene in the decision-making space of an enterprise. The TBTS problem suggests the implementation of ceilings or maximum threshold on the size of a bank. This can be done through the implementation of "Limits of Scope," such as the Volcker Rule, the Glass-Steagall Act, etc., and through the implementation of "Limits of Scope".

Nevertheless, size limitations are generally regarded as the last resort of financial market regulation. Currently, they do not play a major role in the debate on financial market regulations (King, 2009). In the past decade, there have been only a few attempts to implement bank size limitations. Following the financial crisis of 2008, Iceland implemented restrictions on bank size and activities to reduce systemic risks. In 2013 the US senators Warren and John McCain

proposed the "21st Century Glass-Steagall Act", a bill aimed to restrict the size and activities of financial institutions to avoid risks associated with "too big to fail" institutions. Switzerland held a referendum in 2018 on the "Vollgeld" initiative, which proposed limiting bank size and aimed to limit the ability of commercial banks to create money through lending. However, the initiative was rejected by a majority of voters.

5.1 Optimal Bank Size from Business versus Societal Perspective

In the ordoliberal tradition of economic governance, there is no doubt that the optimal size of a company from a business perspective can differ from the economically optimal operating size. In a market economy, the size of a company should primarily be determined by business factors, such as its specific business model. However, if the home country bears the risk of a bailout there is a legitimate public interest in preventing the bank from growing beyond a socially acceptable and sustainable size. This can lead to a discrepancy between private and public interests, forming a welfare-economic justification to curb the growth incentives of private enterprises. Often risks are linked to explicit or implicit government guarantees. Explicit liability guarantees, are jeopardize the sustainability of public finances and macroeconomic stability in times of crisis. Government guarantees can be interpreted as subsidies. By implementing appropriate size limitations, a misallocation induced growth incentives resulting from explicit or implicit government guarantees can be corrected. From the perspective of potential creditors, SIBs benefit from the TBTF regime, as it indirectly insures the bank against the consequences of entrepreneurial risks. The subsidy nature of the TBTF regime creates growth incentives for banks and exacerbates the problem of SIBs (Brewer and Jagtiani, 2009). The growth incentive is based on the expected government assistance in times of crisis and exists regardless of whether the bank actually receives a bailout. The mere expectation of government assistance distorts the behavior of banks and their creditors (O'Hara and Shaw, 1990). Additionally, government guarantees not only affect the risks of the favored banks but also influence the risk choices of their competitors (Cordella and Yeyati, 2003; Hakenes and Schnabel, 2009; Gropp et al., 2010). The TBTF regime creates allocative distortions throughout the financial system, extending beyond the realm of TBTF banks. Particularly for small economies with significant financial industries, the question of size limitations on SIBs is relevant. This applies to both G-SIBs and D-SIBs. as well as implicit government guarantees, known as state liability.

5.2 How to Determine Size Ceilings

The question is how to determine the threshold beyond which a bank is not allowed to expand. It is reasonable to discuss these issues based on theoretical approaches in institutional economics (Erlei et al., 2007). When determining size ceilings, factors such as the national social risk preference or the national ability to externalize the risks of a bank collapse into the international arena should be considered. Two criteria can be used to determine the socially acceptable size of a financial institution:

- *Externalization of risks and the systemic risk induced by SIBs*: According to Richardson et al. (2010), SIBs represent the most pressing systemic risk. This applies not only to small economies but also to the United States, where banks with a balance sheet total of $100 billion are already considered systemically relevant. Size limitations could prevent banks from becoming a systemic risk due to their size. Size ceilings prevent externalization of risks induced by the TBTF regime. They should depend on a bank´s systemic relevance.
- *Sustainability and bailout capacities (TBTS)*: Through explicit or implicit government guarantees, the state assumes obligations that can exceed its fiscal and macroeconomic bailout capacities. Prominent examples are Iceland and Ireland, two countries that faced significant difficulties during the financial crisis. The maximum bailout costs that can be sustained in times of crisis could provide guidance for potential size limitations. Banks should not be allowed to grow beyond the TBTS threshold (Figure 1).

From an empirical perspective, there is little evidence, that speaks against size limitations. Clark (1988), finds no size advantages beyond a deposit volume of only $100 million. Hughes and Mester (2008) also find little empirical evidence of size advantages. At the same time, they provide evidence that TBTF guarantees generate growth incentives to banks. The Geneva Report (Ferguson et al., 2007) shows that in the past, consolidations in the banking sector did not lead to efficiency gains. Only TBTF subsidies prevented efficiency losses from bank mergers (Johnson and Kwak, 2010). Haldane (2010) asserts that in large banks with balance sheet totals exceeding $100 billion, no size advantage can be observed.

6. Discussion and Conclusions

According to the Swiss Federal Department of Finance (2023b) bankruptcy of Credit Suisse would have had drastic consequences for the Swiss economy. In April 2023 the Swiss economy just run the risk of grinding to a halt. The bankruptcy of CS could have resulted in a situation, were small and medium enterprises (SMEs) and households throughout Switzerland had found it almost impossible to function economically. The acquisition of Credit Suisse by UBS prevented the disaster, albeit at high costs for Swiss taxpayers. Disappointingly, Switzerland's TBTF legislation proved useless in a critical moment: a blunt weapon in the fight against a fire-breathing dragon.

Against this background, the article critically examined the fundamentals of the TBTF regime. It demonstrates that when large banks are protected from insolvency by a TBTF regime, the market can no longer fulfill its disciplining function. TBTF undermines the foundations of the competitive system and market discipline. At the same time, the TBTF regime implies high risks for society and carries the danger of unforeseen costs caused by a bailout. In Switzerland, the acquisition of Credit Suisse by UBS and thus the merger of two G-SIBs creates a mega-bank with a balance sheet total approaching 200% of Swiss GDP. The article raises the question, whether this new UBS is "Too Big to Save”. A bank that has reaches a size that exceeds the state's capacity for rescue in times of crisis jeopardizes the fiscal and macroeconomic autonomy of the country where the bank is headquartered. The article advocates for the adoption of size ceilings for banks as a crucial regulatory tool to significantly enhance the effectiveness of the TBTF regime.

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