

Policy Paper: Revisiting the Implicit Subsidy Debate After the Failure of Silicon Valley Bank
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March 10th, 2023, saw the largest bank failure in the United States since the 2007 Financial Crisis. The Federal Deposit Insurance Corporation (FDIC) stepped in to guarantee Silicon Valley Bank (SVB) and cover any losses among depositors. The FDIC agreed to make up losses by increasing fees on other banks rather than using Treasury funds; however, the U.S. government's guarantee of depositors' funds beyond the insurance deposit threshold of \$250,000 raises questions about the government's willingness to let banks fail, let alone the largest financial institutions, and the implications for future implicit subsidies. In this paper, I revisit the public policy of implicit government guarantees for systemically important financial institutions (SIFIs). I argue that implicit subsidies have persisted since the 2007 Financial Crisis in the US despite regulatory efforts to address laissez-faire financial markets. Furthermore, I predict implicit subsidies may grow following the resolution of SVB. Section I defines implicit subsidies and their importance. Section II outlines the empirical evidence for the existence of an implicit subsidy and maps subsidy levels before, during, and after the crisis. Then, Section III reviews the policy approaches available to policymakers to address the implicit guarantee and section IV analyzes the Dodd-Frank Act in the context of those policy approaches. Finally, section V provides a way forward and section VI concludes.

I. The Implicit Subsidy and its Implications

Implicit subsidies result from market participants' expectations about state support for banks deemed too-big-to-fail (TBTF) (Ueda and di Mauro 2013). The TBTF doctrine was

adopted in the 1980s with the unprecedented bailout of Continental Illinois National Bank and Trust Company and testimony from Todd Conover professing to the U.S. government's insufficient reserves to pay out deposit insurance should any of the largest U.S. banks fail. Following the government's explicit guarantee of government support for the TBTF banks and prior to the 2007 Financial Crisis, the US policy towards implicit subsidies has been one of "constructive ambiguity" (Ueda and di Mauro 2013).

Economic theory suggests that the implicit subsidy arises out of a policy choice by the US government to provide financial assistance to impaired or insolvent financial institutions because the financial assistance implicitly reduces the costs of failure for institutions with perceived systemic importance (Acharya, Anginer, and Warburton 2013; Ueda and di Mauro 2013; Koszner 2016). In other words, because of the government's bailout guarantee, expectations of future financial assistance for institutions reduces the credit risk among large systemically important financial institutions, which in turn allows them to enjoy a lower cost of doing business. Because the risk associated with credit from SIFIs is diminished, SIFIs and shareholders can demand lower interest rates on deposits, bonds, and securities since the government's guarantee reduces all or part of the return demanded by investors to cover credit risks. In short, creditors do not bear the full cost of insolvency and as a result, are willing to invest with little attention paid to the risk profile of the institution, which encourages excessive risk taking (GFSR 2014) and results in a wealth transfer to shareholders (Acharya, Anginer, and Warburton 2013).

Therefore, scholars and policymakers' interest in the implicit subsidy is twofold: the competitive advantage it provides to the largest financial institutions compared to smaller banks and non-banks as well as the negative externalities caused by the comparative advantage given to

TBTF institutions. Beyond the wealth transfer to shareholders of TBTF institutions, implicit subsidies also weaken market discipline, encourage excessive leveraging, and create competitive distortions (Schich 2018). All of these factors promote a negative feedback loop that incentivizes banks to grow and take on more risk at the expense of the public sector and societal welfare (GFSR 2014).

It was evident that policymakers needed to address the issue of the implicit subsidy, but due to the implied nature of the subsidy, it is both difficult to measure and perhaps more difficult to limit. In order to fill this need, several methodologies have been developed to estimate the implicit subsidy for the purpose of designing policy to reduce its negative effects on society. Scholars have employed three primary approaches to assess the implicit subsidy and measure its value, including a bond spread differential, a contingent claims analysis (CCA), and a ratings-based approach (Kroszner 2013).

II. Measuring the Implicit Subsidy in the Post Crisis Era

The bond spread differential methodology compares bond yields of systemically important banks to non-systemically important banks. Using this methodology, The IMF's Global Financial Stability Report (GFSR) (2014) found an average funding cost advantage of about 25 basis points in advanced economies and a 125-basis point advantage within emerging economies from 2003 through 2013. The results suggested a rise in funding cost advantages among banks during the financial crisis. The bond spread approach, however, ignores certain differences between the larger and smaller banks that could explain some of the bond differential, including economies of scale, moral hazard, and the characteristics of bonds issued by large and small banks (GFSR 2014 p. 108).

In comparison, the CCA methodology controls for these differences by using observed and fair-market valued CDS spreads that naturally incorporate differences between systemically important institutions and those that are not. The fair-value CDS spread is estimated by using equity price information that does not consider the possibility of government support, acting as a baseline, while the observed CDS spread considers the possibility of financial distress and the implied government support to manage distress (GFSR 2014). The IMF GFSR (2014) found that the implicit subsidy provided a 30-basis point advantage for large institutions in advanced economies from 2003 to 2013 and peaked around 60 basis points in 2009. Using the CCA approach, Acharya (2013) found that the funding cost advantage among US institutions was about 28 basis points on average from 1990 to 2010 with a maximum of 120 basis points in 2009.

In line with the previous results, methodologies using the ratings-based approach have found that implicit subsidies have declined since the crisis but remain high. Ratings-based approaches utilize rating agencies' valuation of the rating uplift for banks to determine the long run average subsidy value. A potential drawback of this methodology is that it relies on rating agencies criticized in the past for providing misleading assessments during the Financial Crisis. The GFSR report found that an implicit subsidy of 15 basis points among institutions in the U.S. (GFSR 2014). Similarly, Ueda and di Mauro (2011) examined the credit ratings of banks in major countries and found a larger basis point jump of about 60 points in 2007 and 80 basis points in 2009. The differences align with empirical evidence that suggests European banks generally having higher implicit subsidy than US banks.

A separate study performed by the Government Accountability Office (2014) using econometric analyses overwhelmingly found that TBTF institutions had smaller funding costs

compared to smaller financial institutions in the years leading up to crisis, and half of the models found that the TBTF institutions had smaller funding costs compared to smaller financial institutions.

Overall, the evidence suggests a sizeable implicit subsidy among financial institutions. While the three methodologies for measuring the subsidy suggest a wide range of implicit subsidies across countries and over time, researchers have generally found a significant implicit subsidy preceding the 2007 Financial Crisis that peaked in 2009 and subsided to levels equal to or higher than pre-crisis subsidy values. While caution should be taken discussing the relative dollar value of the implicit guarantee, the empirical research suggests an implicit subsidy consistent with investors' expectations of a government guarantee. As such, policymakers have taken steps to address the implicit subsidy and the TBTF dilemma.

III. Policy Options in the Implicit Guarantee Debate

Following the Global Financial Stability Report (2014), policy approaches to limit implicit subsidies and systemic risk generally fall into four categories: 1) Structural measures to reduce size and activity; 2) Increasing capacity and/or supervision to reduce the probability of institutional impairment; 3) Enhance transparency to limit the probability of a bailout; and 4) Resolution measures that minimize public transfers.

Structural measures reducing size and activity of TBTF institutions attempt to provide the regulatory framework to prevent the issue of systemic importance ex ante. Although in theory limiting commercial and investment banks' activity and size is the most direct way to reduce the systemic importance of banks and prohibit activities that expose the entire financial system to impairment, in practice structural reform has proven difficult since it is difficult to measure the

appropriate size of an institution, and over-regulation may reduce economies of scale and limit economic activity.

On the other hand, capital and liquidity requirements as well as supervisory techniques take an alternative approach. Capital and liquidity buffers directly increase the loss-absorption capacity of institutions to reduce their probability of impairment while increased supervisory provisions allow regulators to provide more oversight of the financial system. Alongside supervision, enhanced transparency and disclosure provide help to reduce unnecessary bailouts and may reduce the probability of distress as transparency increases awareness of systemic implications of a failed institution.

Finally, policy measures to facilitate resolution are generally designed to either reduce the costs of or prevent future of bailouts. Specifically, bail-in provisions typically attempt to facilitate resolution and may offset the implicit subsidies. In contrast, policy proposals that require bank contributions for the implicit subsidies they receive are meant to minimize systemic risk, future public transfers, and reduce the incentive for banks to become systemically important.

IV. US Legislation in Response to the 2007 Financial Crisis and the Implicit Subsidy

In the wake of the 2007 Financial Crisis, it was clear to US policymakers and regulators that the TBTF dilemma must be addressed (Bernanke 2010). Because of the systemic importance of financial institutions, the government bailed out Bear Stearns to rescue the financial sector and ensure financial stability. The Federal Reserve provided a \$29 billion loan to Bear Stearns, and with it, an implicit guarantee (Skeel 2018). In the aftermath of the crisis, US policymakers designed the Dodd-Frank Act to regulate the financial sector with an explicit no-bailout

guarantee. The goal was to end the TBTF dilemma by heeding expectations of a government guarantee and provide a policy framework that both reduced the probability of institutional distress and eliminated future public transfers to the financial sector. Specifically, the Dodd-Frank Act provided structural measures to reduce the size and activity of financial institutions, increased the capacity for regulators to monitor the financial sector, enhanced transparency among the non-bank financial sector, and increased resolution mechanisms (Kraft 2023).

First, the Dodd-Frank Act created the Financial Stability Oversight Council (FSOC), which provide supervisory and regulatory measures to the Council to reduce institutions' size and expand their monitoring capabilities (Kraft 2023). Specifically, the FSOC is tasked with monitoring the systemic importance of financial institutions, including bank and non-bank financial institutions and has the power to break up TBTF institutions or require the institutions to sell lines of business with a two-thirds vote. Further, the FSOC has the power, under Title II of the Dodd-Frank Act, to place systemically important institutions under receivership of the FDIC. The regulatory powers assigned to the FSOC alone appeared significant in the aftermath of the Financial Crisis as they allowed US government regulators to monitor SIFIs and provide regulators teeth to break up TBTF institutions and expanded the regulatory umbrella to non-bank financial institutions. In addition to the regulatory and supervisory capabilities of the FSOC, the Dodd-Frank Act allowed the Securities and Exchange Commission (SEC) to monitor credit ratings agencies and required hedge funds to register and report limited information to the SEC.

Second, the Dodd-Frank Act included several provisions designed to improve institutions' strength and increase their capacity to absorb losses during crises. Principal among these were the expanded capital and liquidity buffers. For example, the Act increased liquidity coverage ratios and net stable funding ratios requirements to ensure that financial institutions

could absorb losses during economic downturns and make large cash outflows that help prevent against bank runs and fire sales (Kraft 2023).

Another component of the Dodd-Frank Act was the Volcker Rule, which was created specifically to reduce excessive risk taking of financial institutions by limiting investment activities. The Volcker Rule provision explicitly targeted excessive leveraging by eliminating proprietary trading and the ability of financial institutions to invest in hedge funds. This provision attempted to clearly delineate between investment and commercial banking activities, similar to the previously repealed Glass-Steagall Act, and limit risky investment activities that expose financial institutions to greater risk.

Finally, the Act provided certain resolution mechanisms to resolve crises efficiently and reduce bailout costs. The resolution mechanisms included a provision for living wills and created the Orderly Liquidation Association (OLA) (Kraft 2023). Living wills are a resolution plan outlining how a bank would liquidate should it become insolvent. Similarly, the OLA provides a fund for the FDIC to use for the liquidation of a financial institution's assets that are placed under FDIC's receivership.

Overall, the Dodd-Frank Act represented a monumental piece of legislation in response to the Financial Crisis, outlining policymakers desire to curb systemic risk and increase financial stability. The legislation addressed the TBTF dilemma through a regulatory framework that sought to restrict the size of TBTF financial institutions, limit risky activities, expand oversight and regulatory capabilities to the non-bank financial sector, increase the capacity to absorb losses, and promote mechanisms to facilitate resolutions. The Act instilled market and supervisory discipline that created a more efficient and stable financial system; however, few provisions outlined in the Act directly deal with the government's implicit guarantee to rescue

financial institutions in distress, particularly when they are deemed systemically important (Acharya, Anginer, and Warburton 2016). While certain provisions, such as the capital and liquidity requirements or the size and activity restrictions, likely reduced the implicit subsidy by decreasing incentives to become systemically important and preventing banks from becoming larger, the Act generally fails to eliminate those incentives for banks to build systemic risk in the first place. Furthermore, despite the explicit no-bailout guarantee, the Act also signals the potential for future bailouts to investors and the public through provisions that allow for FDIC receivership of failing institutions and resolution mechanisms designed to reduce bailout costs. Therefore, we would expect the Dodd-Frank Act to have an overall small negative net effect on the implicit subsidy, and as research suggests, levels of implicit subsidies have remained at or above pre-crisis levels, suggesting that the Dodd-Frank Act provided moderate regulatory control over a laissez-faire US financial system with limited impact on the implicit subsidy (Acharya Anginer, and Warburton 2016).

V. The Way Forward: Policy Insights and Proposals

Effectively addressing the implicit subsidy requires a policy approach that corrects for underpricing risk resulting from an implicit guarantee. The Global Financial Stability Report (2014) highlighted that preventative measures have worked well in reducing subsidy value because they reduce the probability of distress (p. 125). Therefore, capital and liquidity buffers should continue to be used to prevent distress among institutions; however, appropriately correcting for underpriced risk among SIFIs should further limit excessive risk taking, reduce SIFIs size, and eliminate the monetary benefit provided to systemically important institutions.

Acharya, Anginer and Warburton (2013) suggest a Pigouvian styled tax commensurate with the implicit subsidy they receive from underpriced risk. A corrective tax or capital surcharge levied on SIFIs not only financially offsets the monetary benefit, but it also realigns bank size incentives, and places a cost on excessive leveraging that can later be pooled into resolution funds for potential future failures (GFSR 2014). Based on the magnitude of the estimated implicit subsidy, policymakers could price a capital surcharge according to the expected implicit subsidy of SIFIs. For example, assuming SIFIs receive an implicit subsidy of about 10-20 basis points in non-crisis years and a subsidy of about 60-100 basis points during crises, policymakers could assess SIFIs about 15-30 basis points of their liabilities and use these funds for future crises (GFSR 2014). In this manner, the US government would be recouping subsidies provided to SIFIs ex-ante and simultaneously reduce associated excessive leveraging and risk taking associated with the implicit guarantee (Acharya, Anginer, and Warburton 2016). However, adoption of a subsidy tax or capital surcharge has been limited among policymakers around the world and in the US. Because it is difficult to measure over time, we lack a consensus regarding the appropriate measure of the implicit guarantee's value (Kroszner 2016), and valuing the implicit guarantee itself could reinforce the perception that one exists (Schich 2018).

Scholars have proposed other policy measures to alter market perceptions to reduce implicit subsidies and reduce the negative effects including contingent capital and altering market perceptions. For example, requiring contingent capital raises available capital in the event of insolvency. Specifically, policymakers can require institutions to hold a certain amount of debt instruments that are automatically converted to capital during a crisis (Acharya, Anginer, and Warburton 2016). Other scholars have promoted a similar contingent insurance strategy where institutions purchase an insurance policy that would pay out during the onset of financial distress

(Kashyap, Rajan, and Stein 2008). The contingent capital or insurance approach likely also reduces excessive risk leveraging and other negative externalities of TBTF institutions since it also holds shareholders more accountable for losses.

Alternatively, Schich's (2018) review of the implicit guarantee since the Financial Crisis identifies failure resolution instruments as effective approaches to limiting perceptions of the implicit guarantee. For example, in a cross-country study, Schafer et al (2016) found that failure resolutions in the form of creditor bail-ins increase the CDS spread, implying a reduction in the implicit guarantee. Failure resolution mechanisms appear to reduce market perceptions, which is a significant driver of the implicit guarantee and one that, to date, policymakers have been willing to adopt. In March of 2023, we witnessed the resolution of SVB when the FDIC took receivership of the bank. SVB's shareholders lost everything, and other banks bought their deposit liabilities and some of their assets. At this point, it is unclear what impact this had on the implicit subsidy, but scholars should seek to analyze the impact of SVB's failure on SIFIs implicit subsidies. For example, Paul Krugman in an op-ed with the New York Times (2023) called the failure resolution a bailout, implying that the FDIC's resolution, which brokered agreements with other banks to cover SVB's deposits and assets, would eventually result in the costs of the bailout being passed onto taxpayers in the form of higher costs of services and interest rates on loans. Therefore, future research should follow Kroszner's (2016) recommendation to employ a difference-in-difference strategy to measure funding cost advantages and provide greater confidence that the funding cost advantage, in addition to the negative externalities associated with it, are attributable to perceptions of government support to large banks to help inform policymaker's legislative efforts end the TBTF dilemma.

Overall, policy approaches going forward will benefit from instituting ex ante preventative measures to correct and compensate for the negative externalities of implicit guarantees of SIFIs through a Pigouvian tax, contingent capital, or failure resolution approach. The best approach, while politically controversial, is likely the Pigouvian tax levied on the estimated implicit subsidy that bank owners receive. Contingent capital requirements as well as failure resolutions appear to work as well, although future research should measure the implicit subsidy among SIFIs following the failure resolution of SVB.

VI. Conclusion

The empirical findings imply a momentous implicit subsidy exists across financial markets around the globe. The largest financial institutions in the world experience a cost advantage due to investor's pricing of perceived risk, and expected rescue, of institutions that are systemically important to the health and stability of the financial system and the economy. In the US, estimates suggest a large range, between \$15 and \$70 billion (Acharya, Anginer, and Warburton 2013), but of sufficient magnitude to warrant a policy response. The Dodd-Frank attempted, among other things, to address the implicit guarantee after the Financial Crisis, but failed to fully minimize incentives for financial institutions to grow beyond efficient economies of scale and failed significantly alter investors' expectations of government support (Acharya, Anginer, and Warburton 2016). Instead, with the recent bank run on SVB, US regulators indicated a stronger and more profound implicit guarantee among institutions that are considered systemically important. This implicit subsidy introduces systemic risk, creates inefficiencies, and constitutes a form wealth distribution from taxpayers to wealthy, for profit shareholders and financial institutions. Therefore, future policy approaches must incorporate measures to reduce

incentives for excessive risk taking by offsetting subsidies with taxes, amend mechanisms to reduce the probability of distress, and change long run market perceptions about future bailouts.

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