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Regulating the Financial Industry: No Free Lunch!

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One of the items in the economic agenda of the new U.S. Administration is to revise the Dodd-Frank Act (DFA), formally known as the Dodd-Frank Wall Street Reform and Consumer Financial Protection Act of 2010. The DFA is an inviting target for reformers because of the regulatory burden and complexity it has imposed on financial institutions. These regulations have proven to be particularly onerous for the small community banks and many argue that they have impeded the flow of credit in the economy.

Two main alternative proposals to the DFA have emerged over the past year: the Financial CHOICE Act (FCA), proposed by the House Financial Services Committee, and the Minneapolis Plan to End Too Big to Fail, championed by the Federal Reserve Bank of Minneapolis.

In this note, we provide a succinct overview of the DFA and the two alternative proposals, highlighting their principal merits and pitfalls. Despite the many differences in the scope of the three regulatory frameworks, there is a common core of agreement across all of them that, in order to safeguard the financial system, the banks' capital requirements have to be significantly higher than those applied prior to the Great Recession. In that sense, one of the main disagreements across the plans is *how high* these capital requirements should be in order to avoid a repeat of the financial crisis of 2007-2008. The range of the capital requirements resulting from the three plans is significant and begs the question of what the societal implications of each one of them would be. At the end of the day, the banking sector provides leverage to the economy by extending credit. Increasing the capital requirements of banks decreases the amount of leverage they can provide to the economy. One implication of reduced leverage in the economy is a reduced pace of GDP growth, relative to the case of higher leverage and lower bank capital ratios. The unknown in this equation is how much growth is impaired by higher bank capital requirements. Higher leverage means more risk so the choice of capital ratio that the banks should be mandated to maintain translates into a choice between the amount of leverage we want to have in the economy and how much of a reduction in GDP we are willing to accept in order to decrease the risk of another financial crisis. In other words, there is no free lunch –

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we can't both safeguard the financial system and keep leverage in the economy at pre-2007 levels. Something has to give.

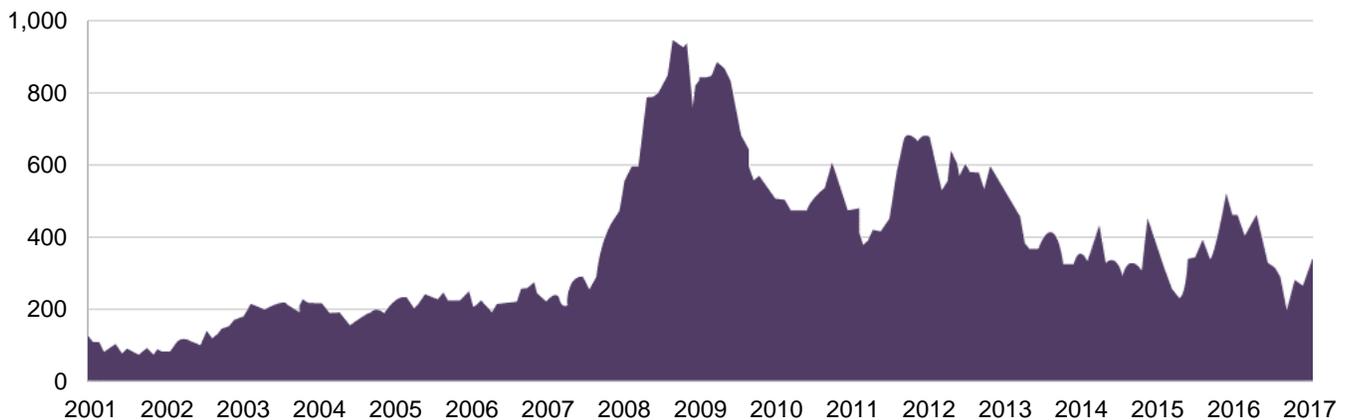
In what follows, we elaborate on this argument and discuss its implications.

Systemic Risk

The main threat to the stability of the financial system is the accumulation of systemic risk – the risk of collapse stemming from interconnected financial risks. This was the root cause of the 2008 crisis that necessitated the government-led bailouts of several large financial institutions. Those bailouts were met with widespread public outcry, since taxpayers' money was used to salvage overleveraged financial institutions. The goal of the DFA, as well as the alternative proposals that have emerged since its passage, is to put in place regulations that would prevent future financial crises, and forestall the need for bailouts of “too-big-to-fail” institutions.

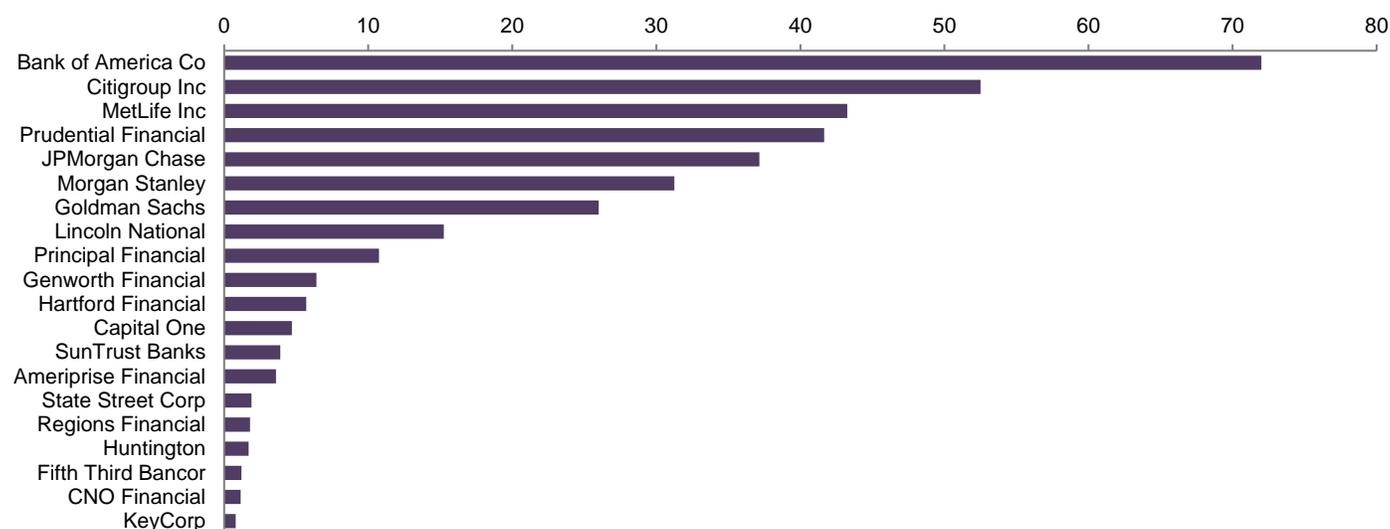
The NYU Stern Volatility lab has developed a systemic risk measure based on the estimated capital shortfall that banks would experience in a “tail event” or crisis. Figure 1 below depicts the evolution of systemic risk for U.S. financial institutions over time. As can be seen from the graph, systemic risk among U.S. financials has declined in the aftermath of the Great Recession, but remains elevated and above its pre-crisis levels. Therefore, one may argue that while the DFA may have helped curb some of the systemic risk in the economy, it hasn't returned it to pre-crisis levels or lower.

FIGURE 1: UNITED STATES – TOTAL SYSTEMIC RISK (USD BILLIONS)



Source: NYU Stern Volatility Lab

Figure 2 below shows the breakdown of systemic risk across financial institutions. Bank of America and Citigroup remain the most systemically important U.S. banks. In the event of a crisis, the capital shortfall for Bank of America stands to be greater than \$70 billion and Citigroup is above \$50 billion.

FIGURE 2: UNITED STATES – SYSTEMIC RISK ACROSS FINANCIAL INSTITUTIONS (USD BILLIONS)

Source: NYU Stern Volatility Lab

The Dodd-Frank Act

The DFA is a broad and complex piece of legislation. We will not attempt to review it in its entirety here, but rather provide a brief account of its most important points.

The DFA's objective is to identify the sources of systemic risk and the financial institutions deemed systemically important. It established ways of monitoring systemic risk in the financial system and limiting excessive risk-taking by financial institutions. It also created a roadmap for resolving insolvent institutions. To achieve these goals, the DFA created the Financial Stability Oversight Council (FSOC), tasked with monitoring systemic risk and identifying Systemically Important Financial Institutions (SIFIs). The DFA mandated the increase of capital requirements for financial firms (with additional requirements imposed on SIFIs), and forced financial institutions to conduct annual stress tests to assess the adequacy of their capital in a crisis.

The scope of the DFA is obviously enormous. It outlines 390 rulemaking requirements, and apart from attempting to address the goals discussed above, it also deals with topics as varied as consumer financial protection and executive compensation. It even includes legislation for topics completely *unrelated* to the financial industry, such as the origins of "conflict minerals."

With nearly seven years of additional perspective since the DFA was enacted, it is becoming an increasingly consensus view that the DFA has resulted in a highly complicated regulatory structure which may be inadequate to forestall the next financial crisis.¹ The capital requirements it imposes on financial institutions may not be high enough to protect them in a time of crisis and many banks remain too big to fail. Furthermore, the regulatory burden that it imposes on financial institutions is blamed for the demise of many small community banks and the decline in bank lending. A key component of the DFA is the Volcker Rule which mandates the separation of banking and proprietary trading activities. This feature has proved monumentally difficult to implement and no evidence suggests that banks' proprietary trading and investment activities per se were at the root of the financial crisis. In addition, the DFA limits the lender of last resort (LOLR) authority

¹ Early critiques were Acharya, Viral, Thomas Cooley, Matthew Richardson and Ingo Walter, eds, *Regulating Wall Street: The Dodd Frank Act and The New Architecture of Global Finance*, Wiley, 2011, Acharya et. al, *Dodd-Frank One Year on*, VoxEY 2012

of the Fed, constraining its ability to respond to a crisis. Ironically, the DFA also does not address the problems of the Government-Sponsored Enterprises (GSEs) that led the U.S. government to also bail out Fannie Mae and Freddie Mac in September 2008 and put them into conservatorship.

Bailouts

The DFA established an Orderly Liquidation Authority (OLA) for insolvent institutions and declares government bailouts illegal. OLA has been criticized as unlikely to work in a big systemic event and the idea that bailouts will never be used is simply not credible. A government facing the dilemma of rescuing a failing SIFI and risking the collapse of its financial system and enormous damage to the economy, will always choose to rescue the SIFI. Declaring bailouts illegal as the DFA does, is simply wishful thinking.

A current example of the futile nature of ruling out bailouts can be found in the brewing banking crisis in Italy. While the new European banking regulations enacted in January 2016 preclude bailouts before creditors and depositors absorb significant losses (bail-in provision), the Italian government has found ways to circumvent these rules, with the implicit and explicit consent of its banking regulator, the ECB. The rationale again is to avoid contagion in the country's banking system which can easily spread well beyond its borders and damage the nascent economic growth of the Eurozone.

A better way to avoid future bailouts is to have in place banking regulations that would make it highly unlikely that bailouts will ever be needed again. The two candidates to replace the DFA aim to do exactly that. However, as we will see, the costs associated with the proposed alternative regulations can be very large.

Bank Capital and Alternatives to Dodd-Frank Financial Regulations

Both the FCA and the Minneapolis Plan are based on a simple and appealing idea: if the banks hold sufficient equity capital and are well managed, they will not require the detailed oversight that is a cornerstone of the DFA. Moreover, with a simpler regulatory structure, small community banks will be relieved of the costly burden of the DFA which has rendered many of them unprofitable. Equity capital is first line of defense against shocks to a firm. The higher it is the larger the resistance to shocks.

The Financial CHOICE Act

Under the FCA proposal, financial institutions with a simple leverage ratio – core capital divided by assets – greater than 10%, which are also deemed to be well-managed, would be offered an “off-ramp” from the DFA regulations and would no longer need to undergo annual stress tests evaluations.

There are three main issues with the FCA proposal. First, the definition of leverage ratio is important. The FCA proposal relies on “generally accepted accounting principles” (GAAP) for its definition. Under GAAP, globally, systemically important U.S. banks already have an average leverage ratio of 8.24%, implying that the further capital increase prescribed by the plan is minimal. However, under “international financial reporting standards” (IFRS), which use gross derivatives positions instead of netting them out as GAAP does, their average leverage ratio is only 5.75%. It can be argued that since the goal is to minimize systemic risk and the need for future bailouts, the IFRS are more appropriate. Generally, at a time of crisis, netting of offsetting derivatives positions may not be feasible, and therefore, counting on this feature may result in an overly optimistic scenario for the adequacy of a bank's capital. Second, relevant empirical and quantitative evidence suggests that a 10% leverage ratio is at the very low end of what might be an adequate level of capital to

forestall a crisis.² Lastly, the plan makes it very hard to ensure that banks remain adequately capitalized once they have been “off-ramped” from regulatory supervision.

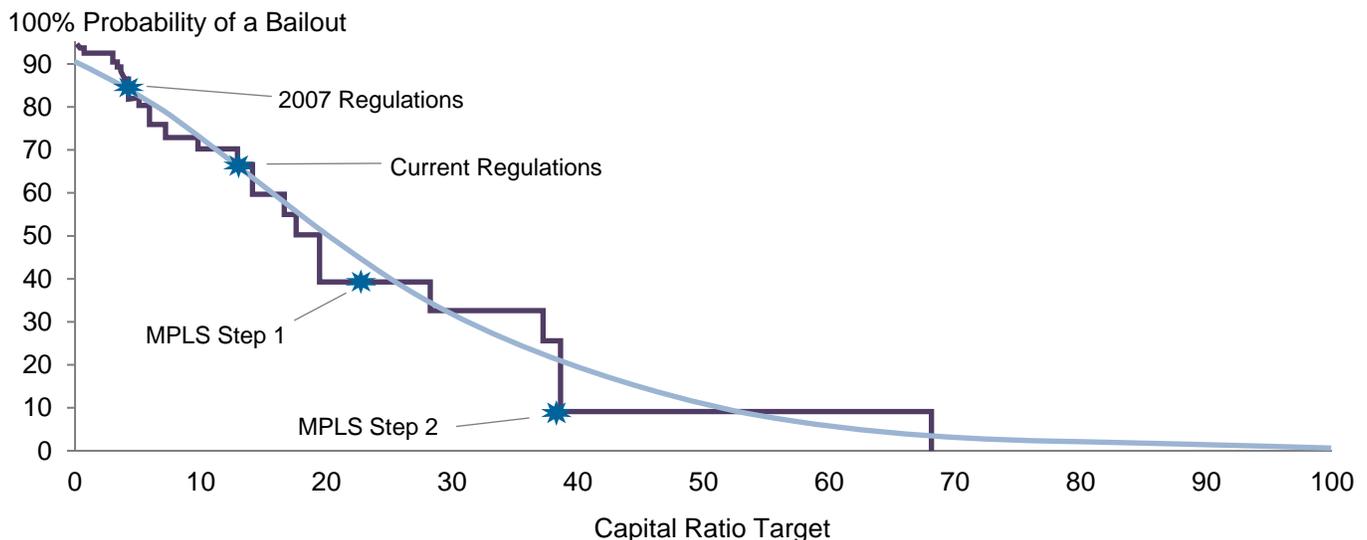
The FCA also advocates cutting back on the monitoring of systemic risk and replacing the OLA with a new chapter of the Bankruptcy Code. The first of these would be a serious mistake and the second requires a much longer discussion than we can provide here.

The Minneapolis Plan

The Minneapolis Plan also endorses the idea that more capital provides extra cushion against shocks. Recognizing that raising the capital requirements of banks entails costs, the plan evaluates the trade-off between the cost of raising and holding more equity capital against the probability of a crisis in the next hundred years. In order to perform this analysis, it uses historical data on crises, compiled by the IMF, to calibrate the connection between the level of equity capital and the probability of a future crisis. Figure 3 illustrates these findings.

Their calculations estimate that to lower the probability of a crisis to less than 9% in the next hundred years, the biggest banks would need to issue common equity equal to 23.4% of risk-weighted assets (RWA), and maintain a corresponding leverage ratio of 15% – a dramatic increase from where it is now (see Figure 3). The second phase of the Minneapolis Plan would require the Treasury Secretary to certify that individual banks are no longer systemically important. If they fail to be approved for this certification, they will be required to raise additional equity capital of 5% of RWA a year, up to as much as 38%. The objective of this provision is to incentivize those banks to fundamentally restructure their business in order to make themselves less risky. An obvious way to achieve that is for big banks to break up into smaller entities, eliminating the risk of being too big to fail.

FIGURE 3: MINNEAPOLIS PLAN’S ESTIMATIONS OF THE PROBABILITY OF A BAILOUT IN THE NEXT 100 YEARS



Source: Calculations by the Federal Reserve Bank of Minnesota

² Admati, Anat and Martin Hellwig (2013), *The Bankers New Clothes: What's Wrong with Banking and What to Do about it*, Princeton University Press. , Begeau, Juliane. "Capital Requirements, Risk Choice, and Liquidity Provision in a Business Cycle Model." Working Paper Harvard Business School. (Revised September 2016.)

No Free Lunch: The Impact of Tighter Banking Regulations on Economic Growth

While the recommendations made by the Minneapolis Plan regarding increases in banks' capital ratios may look conservative, one of the contributions of the plan's study is to provide a systematic evaluation of the trade-off between higher bank capital ratios and the cost they may have in terms of reduction in economic growth.

Table 1 summarizes some of the plan's key findings. It is striking that increasing the capital ratios to 23.4%, as part of the plan suggests, will shave off 1.52% of the country's GDP. Note that these are assumed real effects based data from the IMF. This is many times larger than the increase in GDP that might have materialized through the Fed's expansive monetary policy. It also highlights that tighter banking regulations don't come free.

TABLE 1: EVALUATION OF MINNEAPOLIS PLAN RELATIVE TO ALTERNATIVES

Minimum Capital Requirement	Chance of Bailout (next 100 years) (%)	Chance of Bailout (annual) (%)	Amount of Capital needed to Raise (\$billion)	Annual Reduction in GDP (%)	Present Value of Reduction in GDP (%)	Increase in Loan Rates (bps)
2007 Regulations	84	1.79	-692	-0.52	-10.93	-51
10%	~70	1.19	-231	-0.17	-3.63	-17
Current Regulations	67	1.09	0	0	0	0
Minneapolis Plan Step 1	39	0.50	807	0.60	12.60	60
Minneapolis Plan Step 2	≥9	0.10	1,921	1.52	29.69	143

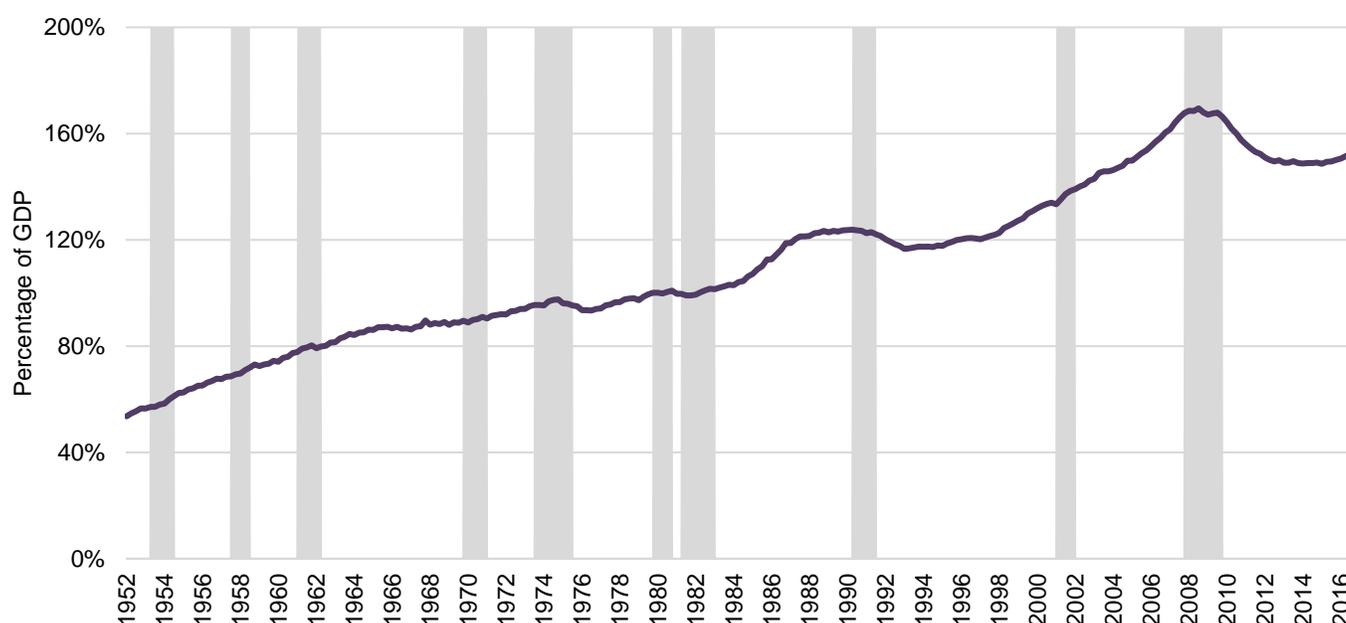
Banks benefit society by providing liquidity to the economy. In particular, they supply liquid claims (such as loans) to economic participants (enterprises, households, etc.) that have constrained access to capital markets. Unlike manufacturing firms that produce goods, banks generate value in the economy by using financial claim assets (such as deposits) to construct new financial claim securities (such as loans) that have features demanded by a particular clientele. If they are mandated to have higher equity capital, the liquidity they would be able to provide to the economy will be proportionally reduced. A basic theorem in finance – the Modigliani-Miller Theorem – holds that a firm's capital structure should, under certain circumstances, make no difference to its value. In practice, we know that the capital structure of a firm affects its value to the extent that it affects the firm's investment decisions and business model. If banks lend less when they have to maintain higher capital ratios, then their reduced lending activities will result in a less levered economy which will produce lower GDP.

One of the main motivations for higher bank capital ratios resulted from the public outcry following the need for the U.S. government to bail out a number of financial institutions during the 2008 financial crisis. Public opinion viewed those bailouts as a result of reckless lending practices on behalf of the banks and the profiteering of highly-paid banking executives. While it is undeniable that many excesses and some malpractice existed in the financial sector prior to the crisis, it is also undeniable that consumers and business benefited, at least temporarily, from the banks' reckless lending by increasing their consumption to levels that were not compatible with their income prospects. In that sense, some of the GDP growth that was observed prior to the financial crisis, was precisely due to that high leverage in the economy provided by the excessive lending from banks. To that point, as Table 1 shows, the Minneapolis Plan research estimated that the

increased bank capital ratios currently in place under the DFA, have reduced the country's GDP growth by 0.52% per annum relative to what it would have been under pre-2007 bank regulations.

The above discussion implies that the question of *what constitutes an appropriate level of capital ratios for banks is equivalent to the question of how levered we want the economy to be*. As Figure 4 shows, bank credit was greatly increased in the 1990s, and saw further expansion during the decade that preceded the 2008 financial crisis. Following the Great Recession, credit contracted significantly, but it remained at elevated levels compared to previous decades. Furthermore, bank credit has been expanding again in the last couple of years, suggesting that the observed consumption is partly supported by the new increase in leverage in the economy.

FIGURE 4: TOTAL CREDIT TO NON-FINANCIAL CORPORATIONS, HOUSEHOLDS AND NON-PROFIT INSTITUTIONS SERVING HOUSEHOLDS AS A PERCENTAGE OF GDP, QUARTERLY, NOT SEASONALLY ADJUSTED



Source: Bank for International Settlements

In that light, and in the absence of an increase in productivity, higher GDP growth is likely partially the result of higher credit expansion. Reducing the banks' leverage will likely reduce the country's GDP, proving that there is no free lunch. *We cannot have both safe banks and high leverage.*

Shadow Banking

One of the most predictable consequences of new forms of regulation is that firms will engage in regulatory arbitrage. Nowhere has this been more apparent than in the financial services. Financial regulation has given rise to a vast "shadow banking" sector. These are activities that involve transformations of liquidity, maturity and credit in institutions that do not fall under the regulatory umbrella or have explicit access to public sources of liquidity or credit backstops. In the financial crisis this sector was hugely important. The growth of the shadow banking system permitted financial institutions to engage in maturity transformation with too little transparency, capital or oversight. Large, short-term funded, substantially interconnected financial firms came

to dominate key credit markets. Huge amounts of risk moved outside the more regulated parts of the banking system to where it was easier to increase leverage. The Federal Reserve had to step in during the crisis to provide liquidity for key markets.

Neither the DFA nor the FCA directly address the systemic risk arising from the shadow banking sector. The Minneapolis Plan, to its credit, directly addresses the shadow banking sector. The plan proposes a tax on borrowing by shadow banks that would be calibrated to equalize the cost of funds across the regulated banks and shadow banks. If shadow banks were still found to be systemically risky then the tax would be set higher accordingly.

Conclusions

The DFA has helped reduce some of the systemic risk in the economy, but has not resolved the too-big-to-fail problem in the financial industry. Alternative plans aim to tackle the issue by proposing further increases in the capital requirements of banks. While further increases in banks' leverage ratios will make them more resistant to shocks, it can mean less expansion of credit. Therefore, the decision of how much equity the banks should hold has to be made in conjunction with the decision of how levered we want the economy to be. Addressing these two questions in isolation from each other can lead to misguided decisions. Estimates of the impact of higher capital requirements on growth differ and many economists argue that it is small. But the choice is effectively between a possibly lower GDP growth path and the risk of periodic economic value destruction due to potential future crises. The Minneapolis Plan is likely to result in a safer banking system but at some cost. The FCA may actually render the system more risky than it currently is because it underestimates the importance of monitoring and measuring systemic risk.

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