A Closer Look

Debt Dynamics and Modern Monetary Theory in a Post COVID-19 World

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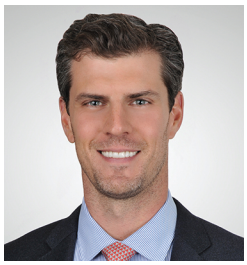

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In Brief

- **U.S. and other developed economy debt levels are elevated relative to history, sparking questions over the sustainability of the debt and governments' ability to continue spending to combat the economic impact of the novel coronavirus.**
- **The U.S. post-crisis experience has the potential to differ from that of Japan's after the 1990s banking crisis as a result of markedly different banking systems.**
- **A post World War II style deleveraging in the U.S. seems less likely given growth dynamics; current labor, capital, productivity, and spending trends are obstacles to such a swift deleveraging.**
- **Unprecedented fiscal and monetary support in the wake of COVID-19 creates many questions about how governments can finance large spending programs over longer time horizons.**
- **While the coordinated fiscal and monetary response to the crisis includes aspects of Modern Monetary Theory (MMT), a full implementation remains unlikely. However, a review of the theory can be instructive in thinking about these issues and possible policy responses.**

Governments and central banks around the world have deployed massive amounts of stimulus in an effort to cushion economies from the devastating effects of the COVID-19 pandemic. Clients, understandably, are concerned about what this could imply over the longer term from a debt and deficit perspective. While humanitarian issues are the top priority in a crisis, and spending more now likely means spending less in the future, the financing of these expansionary policies must be considered. Going into the crisis, the U.S. already ranked in the 10 highest debt-to-GDP ratios across the globe (Exhibit 1). As of this writing, the U.S. has enacted $2.5 trillion, or about 12% of GDP, in fiscal spending and the Federal Reserve's (Fed's) balance sheet has expanded by $2.9 trillion from February to mid-May.

Given the increased spending, the U.S. debt-to-GDP ratio is already estimated to be above 100% of GDP by the IMF's methodology. However, this is not the first time that America's debt-to-GDP ratio has been above 100%; in the years following World War II, the U.S. debt-to-GDP ratio reached 106.1%. Nonetheless, the capital, labor, and productivity trends following World War II were much more supportive for growth when compared to where they stand currently. With a shrinking labor force and a well-developed capital base — suggesting diminishing returns from current levels — productivity will have to take the reins in order to support faster economic growth rates in the United States. We explore the feasibility of such an acceleration in productivity in the sections to follow.

While U.S. debt levels are elevated relative to history, a number of other developed economies find themselves in a similar situation. Japan is perhaps the most striking example, with a debt-to-GDP ratio that stands over 200%. The Japanese growth experience over the past 30 years, which we discuss in more detail in the next section, highlights the crucial importance of a well-functioning

Exhibit 1: Estimated Debt-to-GDP Ratios, Major Global Economies

Japan	238%
Greece	171%
Italy	134%
Portugal	115%
Singapore	115%
United States	108%
France	99%
Spain	95%
Canada	85%
United Kingdom	85%
Germany	56%
Korea	43%
Australia	42%

As of May 2020. Reflects gross general government debt.

Source: International Monetary Fund, World Economic Outlook Database, October 2019

banking system following an economic crisis. As the U.S. financial system remains well capitalized and healthy following the Global Financial Crisis (GFC) of 2008 to 2009, it is likely that credit creation will continue once the COVID-19 pandemic passes. This stands in stark contrast to Japan following its banking crisis in the late 1990s, after which credit creation never recovered.

In this *A Closer Look*, we investigate historical debt dynamics and explore an alternative theory of government deficit spending, Modern Monetary Theory (MMT), as it relates to the U.S. The theory sparked discussion among economists and investors after the Green New Deal — a large government spending program aiming to tackle climate change and rising inequality — was proposed in March 2019. While the implementation of MMT is unlikely given the current political climate, understanding the theory behind it can be instructive as we think about how the government will manage these increasing debt loads. For further information on our views on municipal bonds in the midst of the COVID-19 crisis, we encourage you to read our *Investment Insights* publications "Stabilization in the Municipal Bond Market" and "Addressing Municipal Market Volatility"; we will continue to provide updates, in particular regarding states' financial health.

Elevated Debt-to-GDP Ratios: Post World War II and Present Day

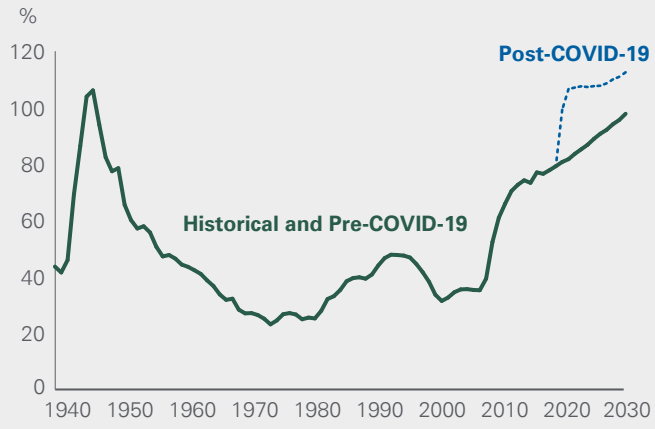
The enormous global fiscal response to the COVID-19 shock has accelerated the increase of debt-to-GDP ratios in developed economies. Pre-COVID-19 budget estimates from the Congressional Budget Office (CBO) saw U.S. debt-to-GDP rising toward 100% by 2030. Instead, as a result of recent fiscal expenditures, the U.S. debt-to-GDP ratio currently stands over 100%, and it is likely that the U.S. debt-to-GDP will rise to 110% within the next decade (Exhibit 2).[1]

The last time the U.S. debt-to-GDP ratio stood above 100% was in the aftermath of World War II; in 1946, U.S. debt-to-GDP was 106.1%. However, over the next 30 years, this ratio would fall to 23%. When considering the circumstances that allowed for this swift decline in the nation's debt burden, we find that the current backdrop is markedly different.

In the aftermath of World War II, the rates of increase in capital, labor, and productivity growth were all supportive of higher U.S. growth rates. Additionally, federal spending represented a smaller burden on debt levels. Specifically, between 1946 and 1974, U.S. real GDP growth averaged 3.7% per year as labor force

Exhibit 2: U.S. Government Debt to GDP

Key Takeaway: In the wake of COVID-19-related fiscal expenditures, U.S. government debt is set to rise to historic levels.



As of May 2020.

Source: Bessemer Trust, Bureau of Economic Analysis, Congressional Budget Office

[1] Source: RDQ Economics

growth averaged 1.6% per year, productivity growth averaged 2.8% per year, and federal spending growth averaged 17.5% per year.

In contrast, between 1990 and 2020, U.S. real GDP growth averaged 2.5% per year, labor force growth averaged 0.4% per year, productivity growth averaged 2.0%, and federal spending growth averaged 20% per year. Given an aging population in the U.S., federal spending is likely to increase going forward as a result of healthcare and social security costs. As a result, it will be crucial to see productivity levels increase in order to boost future GDP growth based upon the estimates of labor force growth. While this is not an impossible task given the technological advances and efficiency gains being realized across corporate America, it remains very difficult to forecast.

While the post World War II period suggests that a path toward improved fiscal ratios can be achieved due to stronger economic growth and reduced spending, a similar result does not appear to be a realistic forecast for the post-COVID-19 period. True productivity growth would require dramatically new innovation along the lines of what was seen post World War II. However, this time around, innovations are unlikely to be seen in physical productivity gains and are more likely to emanate from digitization, robotics, and increased efficiency from cloud computing.

Higher Debt Levels: Differences Between the U.S. and Japan

Japan's experience has supported the thesis that high debt levels coincide with weak economic growth. After all, its 64% debt-to-GDP ratio in 1990 rose to 238% in 2019. As Reinhart and Rogoff stated in their 2011 paper, *Growth in a Time of Debt*, "The relationship between government debt and real GDP growth is weak for debt/GDP ratios below a threshold of 90 percent of GDP. The observations with debt to GDP over 90 percent have median growth roughly 1 percent lower than the lower debt burden groups and mean levels of growth almost 4 percent lower."[2] While there is likely nothing special about the specific 90% debt-to-GDP threshold, developed economies over the past 30 years certainly provide support to the Reinhart-Rogoff view that higher debt levels weigh on growth.

Fed Lending and the Money Supply: Ensuring that Credit Creation Continues

As Fed Chair Jerome Powell has mentioned during Federal Open Market Committee press conferences, the Fed has lending powers, not spending powers, as a result of the Federal Reserve Act of 1913. What the Fed has done since the start of the COVID-19 crisis is expand the scope of its lending operations to include not only banks, but money market funds, investment grade corporations, small- and medium-sized businesses, and municipalities. This expansion in lending helps to ensure credit continues to flow smoothly in the economy.

It's important to emphasize that these are loans made by the Fed that must be paid back, unlike those of the Paycheck Protection Program, which Congress enacted. The credit creation process is similar to how a commercial bank operates, with the main difference being that the government takes any losses on the loans, not the private sector. By doing this, the Fed ensures credit continues to flow in the economy when the private sector pulls back from lending. While these are loans, the line between Fed lending and spending is getting blurred the more it continues to expand its balance sheet. For example, if the Treasury issues debt to finance increased unemployment insurance benefits, and the Fed purchases that debt with printed money, is the Fed lending or spending?

By purchasing or selling securities in the open market, the Fed can adjust the amount of base money in the economy. When Fed bond purchases are increased, the whole financial system can expand lending as commercial banks see increased deposits, assuming that regulations are not so stringent as to impede credit creation.

When a commercial bank lends, it creates more money via the fractional reserve banking system. For example, after taking in deposits, banks issue loans with a fraction of the pooled deposits. These loans become other deposits, which become other loans, and so on. Through this process of financial intermediation — the lending of deposits — additional money is created on top of the base money stock that was created by the Fed.

Lowering reserve requirements — note that reserve requirements were eliminated on March 15 in order to encourage lending — allows banks to lend out more money. This lending would create more deposits and allow the fractional reserve banking system to create an increasing quantity of money in circulation. Conversely, if the Fed were to increase reserve requirements, the process would work in reverse; deposits would contract, and money supply would shrink.[3]

[2] Reinhart, C., & Rogoff, K. (2010). *Growth in a Time of Debt*

[3] Source: RDQ Economics

However, Japanese bank failures in the late 1990s contrast sharply with the U.S. banking system following the 2008/2009 financial crisis and during the current health crisis. U.S. banks currently hold very high levels of liquid capital, deposits as a percentage of liabilities are at historical highs, and a number of regulations have been relaxed to allow for greater lending capabilities during the current crisis (See Appendix for further detail on the relaxation of bank regulations). As a result, while Japanese credit creation failed to recover following the country's banking crisis, it seems unlikely that U.S. credit conditions would be as impaired as those seen in Japan due to the health of the U.S. banking system. The bottom line here is that, with a healthier banking system, conditions are more favorable for a stronger recovery in economic growth in the U.S. when compared with Japan.

Balance Sheet Expansion and Inflation: A Different Backdrop Than Previous Crises

The lack of inflation throughout the 10-year recovery that followed the 2008/2009 GFC has led many pundits to forecast disinflation and even deflation as a result of the Fed's latest balance sheet expansion. However, the U.S. banking sector was severely capital impaired following the GFC, and even once the economy and consumer behavior stabilized, banks remained impaired by higher levels of regulation. Despite a near quintupling of the monetary base following the GFC, increased banking regulation in the aftermath of the GFC suppressed the velocity of money, resulting in low inflation.

Given that the U.S. banking system is very well capitalized currently (Exhibit 3), banking sector regulations have been relaxed to encourage banks to lend, and money supply is growing rapidly as a result of Fed policy, there is a higher potential for inflation over the medium term than the U.S. has experienced following prior crises. Once the economy and consumers find their footing following the COVID-19 shock, banks that are already comfortable lending to corporations are likely to become comfortable lending to households, which should increase the velocity of money. Nonetheless, we would expect any inflationary potential to be years away, even in the scenario of a quick economic recovery.

Exhibit 3: Tier 1 Capital Ratios

Key Takeaway: U.S. banks are currently well capitalized, having improved their balance sheets following the global financial crisis of 2008 to 2009.

As of May 2020. Reflects Tier 1 risk-based capital as a percentage of risk-weighted assets.

Source: Federal Reserve Bank of New York

Increased Treasury Issuance to Finance the U.S. Budget Deficit

It is undeniable that U.S. debt levels remain on a rising trajectory as a result of the recently increased fiscal deficit. We note that, typically, governments would tackle rising debts and deficits with increasing taxes, issuing longer-term debt, and decreasing spending. Today, the gap between the amount of cash that will be raised via the current Treasury debt issuance schedule and the U.S. deficit financing needs is very large. For 2020, this gap stood above $3.5 trillion as of May 1, 2020.[4] As such, the Treasury will surely be increasing auction sizes and issuing longer-dated maturities going forward. Given the investor demand that we have seen for corporate debt following the spread widening incited by COVID-related global economic shutdowns, we would expect demand for U.S. Treasuries to remain robust. However, should private investors balk at the large Treasury supply, the Fed would likely increase its Treasury purchases to ensure that the market functions smoothly.

[4] Source: RDQ Economics

Taking an alternative view, what if the U.S. deficit could be financed by printing money while inflationary pressures could be managed via increased taxation (pulling money out of the private sector) and interest rates could be controlled through bond issuance (adjusting bank reserves in the financial system)? These options are exactly what proponents of Modern Monetary Theory (MMT) would recommend. MMT has been considered unconventional as an economic theory — but now that the Fed and Treasury are more closely coordinating their actions, its principles may not be so farfetched. It is important to give it a closer look to better understand the policy actions governments may take over time.

The MMT Economy

MMT highlights that, subject to certain constraints, if a government has the ability to print money, it can always cover its spending and can never be forced into default (for a detailed explanation of MMT, please see What Is MMT?). Bond issuance and taxation would not be needed to fund government expenditures; bond issuance would be used to maintain interest rates at a chosen level while taxes and spending would be adjusted to maintain full employment and stable prices. The government would employ monetary and fiscal policy to achieve desired economic results, without regard for balancing the budget.

What Is MMT?

While a lot of the attention that MMT receives revolves around theoretical policies, it is a broad framework for how money operates in a "modern" society. Simply put, MMT argues that money represents a record of debt from one party to another. Importantly, in this type of monetary society, the state has the ability to define both the unit of account and print the "thing" which represents it. This gives the state the power to purchase anything in its own currency.

However, the existence of state money alone is not sufficient for this; the population must use the state's unit of account. As a result, the ability to levy taxes, which can only be paid in a government's proprietary currency, allows a government to build natural demand for its currency.

Crucially, government purchases can be funded by printing money. Likewise, if a government issues debt (borrows) in its own currency, it can always repay its creditor by printing money. In contrast, governments that issue debt denominated in a foreign currency cannot print money to cover this debt and can be forced to default. This has happened to a number of emerging market economies, including Argentina and Venezuela more recently, which defaulted on their U.S. dollar debt. In sum, a government with the ability to print money can never be forced to default. While there have been a few governments to default on debt issued in their own currency, this was due to a policy decision rather than an inability to pay.

Following this logic, MMT suggests that taxes for revenue are unnecessary if a government can create new money at will. A government that does not promise to convert its currency to anything — including gold or another currency — does not need to tax or borrow in order to cover its spending.

The levy of taxes has a dual purpose within the MMT framework: to produce demand for government money and to drain money from the private sector in order to combat inflationary pressure. As the government spends, new money is forced into the economy and accumulated by the private sector as savings. As this new money is spent and its velocity increases within the economy, there is the potential for the demand for goods to exceed the supply of goods, which would be inflationary. The MMT framework suggests that taxes should be levied in this instance in an effort to reduce the money supply and stabilize prices.

Furthermore, newly created money flows into the banking system as reserves — the cash balances held by banks. Banks typically lend out their reserves to earn interest. However, if banks' reserve supply exceeds borrowers' demand, interest rates would be pressured lower. In order to mitigate this reserve supply imbalance and prevent interest rates from falling too low, the government could issue debt. Issuance would drain reserves from the system as banks would purchase government debt with excess reserves. In turn, the downward pressure on interest rates would abate.

Today, it's even easier for the government to stop interest rates from falling too low. After the GFC, the Fed began paying interest on the excess reserves banks held. Banks no longer have to lend out reserves to earn interest; instead, they can just hold them at the Fed. The rate the Fed pays, called the IOER rate, essentially becomes a floor for interest rates since banks could always earn this rate. In theory, then the government could adjust the IOER rate in lieu of issuing bonds.

Theoretically, the government would spend or adjust taxes in an effort to eliminate any slack in the economy without causing inflation. For example, with an economy below full employment, the government would cut taxes or increase spending. On the other hand, if inflation were to rise, then it would raise taxes or reduce spending (or some combination of the two). In the end, the impact of these actions on the government's budget would not matter; any resulting deficit would be financed by printing money, not by issuing bonds.

MMT'S View of Debts and Deficits

Traditional economists think of the tradeoff between fiscal and monetary policy much differently than MMT advocates. Traditional economists argue that increases in government deficits lead to higher interest rates, based on the notion that investors need to be compensated with higher interest rates in order to purchase additional debt. Further, traditional economists worry that higher interest rates will crowd out private investment. MMT's view, by contrast, is that deficits are financed by money printing, which increases bank reserves, pushes down interest rates, and stimulates the economy.

Along the same lines, many traditional economists worry about debt sustainability. With interest rates higher than economic growth rates, debt ratios increase and investors could refuse to purchase a country's debt. Historically, the only way to break this feedback loop has been to balance the budget through austere fiscal measures. Typically, this leads to economic contraction, which is, understandably, not favored by politicians or the general population.

Proponents of MMT would likely focus on the interest rate as a way of solving debt service issues. Specifically, the government could set interest rates below the growth rate of the economy, which would halt the rise in the debt ratio.

Structural Implementation Issues

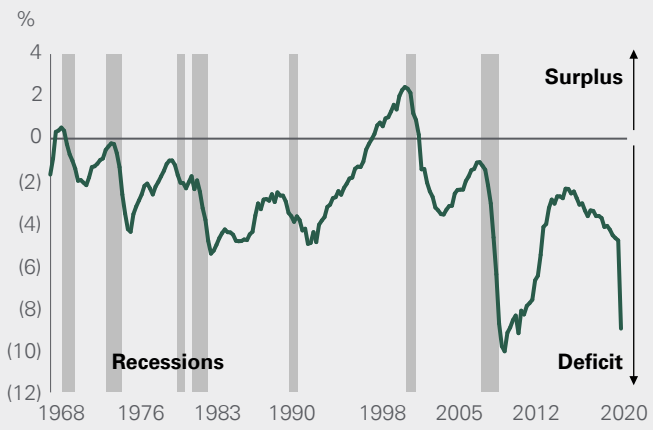
The current structure of the U.S. government would make MMT implementation extremely difficult, if not impossible. The Federal Reserve's dual mandate of promoting full employment and stable prices would be given to Congress; politicians would be tasked with constantly adjusting spending and taxes in order to maintain stable prices and full employment as the business cycle turned. As a result, Fed independence would be eliminated.

Currently, various rules limit the ability of Congress to increase government deficits. Given that the MMT framework relies upon unlimited spending for the benefit of the economy, spending constraints would have to be removed. Additionally, analysis of government spending would require restructuring. Proposed bills are now analyzed by the CBO for their cost and revenue impacts. By contrast, in the MMT framework, focus would shift to a bill's potential inflationary influence.

In MMT theory, automatic stabilizers serve to offset economic fluctuations without direct policy intervention, and this is largely done through tax and transfer systems. For example, if personal incomes fall, tax liabilities fall, and government spending increases as more families become eligible for transfer programs, like food stamps or unemployment insurance. Exhibit 4 illustrates how the current structure of the government budget acts as an automatic stabilizer; the budget deficit increases during a downturn and decreases as the economy recovers. However, if we go back to the GFC of 2008/2009, the

Exhibit 4: U.S. Federal Budget Deficit/Surplus as a Percentage of GDP

Key Takeaway: Budget deficits currently act as economic stabilizers, increasing during recessions and decreasing during recoveries. Policies based on MMT would require more powerful stabilizers to be enacted.



As of May 2020.

Source: Bloomberg

unemployment rate in the U.S. reached nearly 10% by the end of 2009. Despite the existence of automatic stabilizers, additional stimulus from Congress, and interest rates dropping to zero, the unemployment rate did not recover to the pre-crisis level of 4.5% until mid-2017. As a result, MMT policies would likely require more powerful stabilizers to support the economy during downturns. Otherwise, politicians would have to adjust spending and taxes in real time to ensure the economy remains at full employment and prices are stable.

Lessons From MMT Thought Experiments

Given the expanse of questions surrounding the efficacy of MMT and the many obstacles related to its implementation, it seems unlikely there will be a wholesale change in government policy toward this framework anytime soon. However, the MMT framework can be helpful in drawing insights into policy actions and possible issues that might arise in the current downturn.

One of the crucial implications of MMT is that the framework shifts business cycle management from monetary policy to fiscal policy. While monetary and fiscal policy are currently both working to cushion the sudden stop of the global economy, limited monetary policy space going forward increases the likelihood of more fiscal action.

Fed Chair Jerome Powell has noted the need for monetary and fiscal policy to work in concert during a downturn, but he has not gone so far as to mention that he embraces the broader tenets of MMT. At his latest press conference in April, Powell noted the following:

> *I have long time been an advocate for the need for the United States to return to a sustainable path from a fiscal perspective at the federal level. We have not been on such a path for some time, which just means that the debt is growing faster than the economy. This is not the time to act on those concerns. This is the time to use the great fiscal power of the United States to do what we can to support the economy and try to get through this with as little damage to the longer run productive capacity of the economy as possible. The time will come, again, and reasonably soon, I think, where we can think about a long-term way to get our fiscal house in order. And we absolutely need to do that.*

While fiscal policy will likely have to assume a greater role during the downturn, a complete shift toward MMT remains unlikely. This means that stimulus measures will likely result in higher taxes or other spending cuts in the future to bring government debt to a sustainable level.

With both the Fed and Congress working in tandem to support the economy, fears have increased that inflation could rise in the medium to long term. While disinflation is more of a worry in the near term due to the massive demand shock being experienced, we continue to monitor for any pick-up in inflation. This risks spiraling into a period of rising prices and slowing economic growth, or stagflation, if the virus reduces the productive capacity of the economy and U.S. growth dynamics do not improve. As the overall supply of money has increased markedly since the start of the crisis, we continue to look for any inflationary impact and remain focused on the velocity of money in the financial system. If inflation were to materialize over the medium term, the Fed could raise interest rates to combat it, as long as it remains an independent entity.

Bessemer Portfolio Implications

Analysis of debt dynamics is an ongoing and critical component in the development of our macroeconomic views at Bessemer. In the near term, massive monetary and fiscal stimulus are helping to mitigate some of the damage done by COVID-19, providing a boost to equity markets. Globally, interest rates are likely to remain low, or fall further, as central banks continue easing measures and the demand shock from the virus pushes down inflation. Bessemer fixed income portfolios are positioned with a longer duration, or higher sensitivity to interest rate movements, than their benchmarks. Additionally, credit selection in both the municipal and corporate sectors is focused on high-quality issuers that have the wherewithal to endure the current crisis. Bessemer's analytical staff is constantly monitoring holdings and assessing the credit impact of any new developments.

We continue to see the near-term outlook as uncertain, and volatility is likely to persist. Over the longer term, a strong and unencumbered financial system should continue to support activity long after consumers and small businesses regain their footing. While risks will always loom on the investment horizon, businesses with strong management teams, predictable earnings growth, and the ability to innovate will continue to be held within client portfolios. We continue to view this quality and growth bias as a key component of the investment process at Bessemer.

Appendix: Abbreviated List of Relaxed Bank Regulations in 2020

March 15: Reserve requirement eliminated.

March 23: Allowed firms to use their Total Loss Absorb Capacity (TLAC) to promote lending.

March 24: Reduced examinations and allowed additional time to resolve non-critical supervisory findings.

March 26: Encouraged banks, savings associations, and credit unions to offer responsible small-dollar loans to consumers and small businesses in response to COVID-19.

March 26: Regulatory reporting relief to small financial institutions.

March 27: Allowed early adoption of a new methodology on how certain banking organizations are required to measure counterparty credit risk derivatives contracts.

March 27: Provided an optional extension of the regulatory capital transition for the new credit loss accounting standard.

March 31: Delayed by six months the effective date for its revised control framework. These are rules for determining when one company controls another company for purposes of the Bank Holding Company Act and Home Owners' Loan Act. If a company has control over a banking organization, the company generally becomes subject to the board's rules and regulations; effective date now September 30 versus April 1.

April 1: Treasuries and bank reserves excluded from calculation of the supplementary leverage ratio.

April 6: Lowered the community bank leverage ratio.

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