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***“Financial Stability and Regulatory Policy in a
Low Interest Rate Environment”***

Eric S. Rosengren
President & Chief Executive Officer
Federal Reserve Bank of Boston

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*The views expressed today are my own, not necessarily those of my colleagues on the Federal Reserve Board of
Governors or the Federal Open Market Committee.*

Good afternoon. I would like to thank the Norges Bank for inviting me to participate in this timely and important conference. As someone with a background in both economic research and bank supervision, I believe the conversations taking place over these two days around re-examining bank regulation and financial stability are very important. It is particularly important at this stage of the business cycle to assess whether our economies are prepared for a hypothetical next downturn, and consider whether policymakers have built sufficient resilience into the financial system – so it can withstand the kinds of stability problems that were so prevalent in the last recession.

One significant difference between now and previous cycles is the low level of interest rates in the United States, Germany, and Japan. The low-rate environment is particularly striking because it occurs at a time when all three countries' labor markets remain relatively tight by historical standards.

Policy rates in the United States are currently quite low. This is partly a result of low equilibrium real rates globally, and low inflation targets. But it is also due to the Federal Reserve setting its policy rate quite low, to offset risks to the U.S. economy stemming from tariffs and the global slowdown. Although core PCE inflation is 1.7 percent and the unemployment rate sits near a 50-year low, nominal interest rates have been reduced and short-term real rates are now negative.

With rates this low, there is very little room to reduce short-term rates should the economy stumble, as the Fed normally cuts rates well over 4 percentage points during a recession. Similarly, the 10-year U.S. Treasury rate has declined, which limits the room to push long-term *sovereign* rates down in a hypothetical economic downturn.

Taken together, one might characterize the situation as one where monetary policy “buffers” have been diminished quite significantly. This limitation on monetary policy’s ability to buffer the economy in a downturn is a key consequence of economies operating in a low interest rate environment. In the U.S., the likelihood that this low interest rate environment will pose a persistent challenge for conventional interest rate policy is one reason the central bank has begun to re-examine its monetary policy framework.¹

And the Federal Reserve is not the only developed-economy central bank facing this issue. Increasingly, there are questions about whether too much is, even now, being asked of monetary policy in Germany and Japan, for example. In these countries, the room for monetary policy to react to significant negative shocks is even more meager than in the U.S., given that both short-term and long-term nominal interest rates are already negative.

With the constraints on traditional monetary policy’s ability to buffer or help reduce the effects of a downturn, many countries have begun to re-examine other ways monetary policy can be pursued to stimulate their economies. Besides the tools that have already been deployed at the effective lower bound, I would suggest that the low rate environment and the diminished capacity of *monetary* policy to offset shocks implies that we also need to just as carefully examine *regulatory* and *financial stability* tools.² Today, I will argue that policies and tools that may have been appropriate in a high interest rate environment will likely not be sufficient in the current environment.

For several reasons, a low interest rate environment makes it more difficult to exit recessions. This difficulty is due not just to the smaller monetary policy buffer, but also to the

fact that a low interest rate environment encourages greater household and firm leverage that will amplify the severity of a downturn, should it occur.

The consequences of a low rate environment also make it difficult for monetary policy to play a solo role in countercyclical policy. A low-rate environment implies a greater need to utilize countercyclical *fiscal* policy, as well as a need for larger regulatory and financial-stability buffers. For example, the recent and prospective decline in some capital ratios puts banks in a less advantageous position, particularly if one expects a low interest rate environment to prevail for some time.

In short, the low interest rate environment that many developed countries face requires policymakers to re-examine other economic buffers. And those buffers, in my view, are not adequate at present in many countries represented at this conference.

Low Interest Rates and the Implications of a Diminished Monetary Policy Buffer

Figure 1 shows the short-term policy rates in the United States, the Euro Area, and Japan. In the U.S., prior to the last recession, the federal funds rate was over 5 percent. On average over the past six recessions, the Fed has lowered the funds rate by about 5 percentage points. Had the Great Recession not been quite so severe, the 5 percentage points of federal funds decrease available at its start might have been sufficient to offset the downturn. But because of the financial crisis and the severity of the ensuing recession, despite dropping the federal funds rate quickly to zero, the recession was still historically severe and sustained. The funds rate was pinned at just above zero for seven years, far longer than any model predicted would be necessary before the recession. Even as the eleventh year of the recovery begins, the

federal funds rate has never exceeded 2.4 percent, and as I noted a few moments ago, the Fed has once again lowered the funds rate to mitigate the risks of a global slowdown and trade disputes.

As a result, while the macroeconomic environment in the U.S. is relatively benign, short-term interest rates in the U.S. have limited room to react to a significant adverse shock. In Germany and Japan, where the economic outcomes have not been as encouraging, short-term rates remain negative, despite being over a decade from the financial crisis.

So how is policy to respond?

One reaction to the limitations on lowering *short-term* policy rates in the wake of the Great Recession has been for central banks to use their balance sheets to push down *long-term* rates. These quantitative easings and maturity transformations could be considered the “traditional nontraditional” policies. However, **Figure 2** shows that the buffer for this alternate monetary policy tool is also in a somewhat diminished state. In the U.S., the 10-year Treasury rate has fluctuated recently between 1.5 and 2 percent, below the Fed’s 2 percent inflation target. In Germany and Japan, 10-year nominal rates are already negative, providing very little, if any, capacity for monetary policy stimulus using balance sheet actions.

While we don’t know exactly how long low rates will last, some of the underlying factors producing low equilibrium rates are likely to persist. Slowing population growth and aging populations are with us for the duration. We can hope for improved productivity gains, and that may happen, but we do not see signs yet of a convincing resurgence in trend productivity growth.

Figure 3 provides the median and central tendency around what the Federal Open Market Committee (FOMC), the U.S. monetary policy decision-making body, expects the federal funds rate to be in the longer run. The estimate of the longer-run nominal federal funds rate has

declined significantly just since 2014, and the most recent median estimate of 2.5 percent is the lowest it has been over the past five years.

The implications of the diminished monetary policy buffer are significant. Monetary policy has been the tool of choice to provide countercyclical stimulus during much of the postwar era. Given the current diminished monetary policy buffer, recessions may be deeper and recoveries slower than what we have experienced historically, unless additional buffers are provided by fiscal, regulatory, and financial stability policies and deemed appropriate to utilize by policymakers.

Implications for the Banking System

One implication of a low interest rate environment with limited monetary policy buffers is that recoveries from future recessions may be more shallow, possibly resulting in a prolonged period of relatively poor economic performance, and an extended episode of policy rates at the effective lower bound. The implications for the banking system are important to consider. Many bank stress tests, such as those conducted in the U.S., do not capture the effects of prolonged economic underperformance on banks, as the tests often consider a span of only a couple years (in the U.S., nine quarters). If the tests underestimate the full impact of sluggish recoveries in a low rate environment, they might correspondingly indicate capital buffers that are insufficient to protect banks against losses.³

Figure 4 shows the path of three capital ratios for U.S. Global Systemically Important Bank Holding Companies, or GSIBs. Equity capital to total assets and the tier 1 leverage ratio both leveled off in early 2016 and have declined somewhat since then. The common equity tier

1 risk-based capital ratio is now modestly higher than in 2016. It's worth recalling the equity capital and tier 1 leverage ratios were focal points for many investors during the financial crisis. The recent declines in these key capital ratios raise the question of whether the level of capital represents an adequate and appropriate buffer, if a low interest rate, constrained monetary policy environment continues.

Figure 5 shows the profitability of the largest banks in the United States, the Euro Area, and Japan. In both the Euro Area and Japan, the challenging macroeconomic environment has resulted in very depressed interest rates. In the U.S., which is no longer at the effective lower bound, the macroeconomic environment has been more favorable. Differences in bank profitability reflect, in part, the impact of these macroeconomic differences. In an environment of a hypothetical global recession, it is unlikely that the profit opportunities would be any better – in fact, the loan losses could provide a very challenging environment.

With capital ratios in the U.S. leveling off – and in some instances falling – and profitability depressed in certain regions, it is important to ask whether the financial system is prepared for a hypothetical global economic downturn. In addressing that question, it is interesting to consider banks' payout ratios, as shown in **Figure 6**. In the United States, even as dividends have been increasing, share repurchases have also been accelerating, resulting in quite high payout ratios (specifically, dividends and repurchases as a share of net income). If the stress test no longer requires U.S. banks to pre-fund dividends and share buybacks – that is, if banks are no longer required to meet capital ratios after payouts in stress conditions – one can expect payout ratios to rise further, dissipating the volume of capital that would be available to ensure solvency.⁴

One way to avoid such a difficult operating environment for banks is to activate the Countercyclical Capital Buffers (CCyB).⁵ By increasing capital requirements during an economic expansion, the CCyB would put banks in a better position to handle an economic downturn in an era in which monetary policy buffers are limited. Hopefully, better-capitalized banks would help compensate for limited monetary and fiscal policy buffers.

Figure 7 shows the CCyBs currently in effect and announced by jurisdiction.⁶ There is often a long transition period between the announcement of a Countercyclical Capital Buffer change and its implementation. The chart shows that many countries have increased their CCyBs, and some are planning further increases. In the U.S., in sharp contrast, the CCyB remains at zero.

In my view, proposals that would substitute CCyBs for capital adequacy buffers could have undesirable effects.⁷ Although the CCyB could provide an offset for the lack of monetary policy buffer in a low interest rate environment, banks would likely be undercapitalized at the trough of the economic downturn once the CCyB has been reduced – due to the lower capital requirements going into a recession.

In the last recession, banks were unwilling to stop dividend payouts in a proactive way. This is not surprising; no bank wants to signal it is in distress, but this potential reputational risk results in banks being slow to retain needed capital. Regulatory stress tests can help by requiring all banks to be able to fund dividends and share buybacks in stressed situations. Given the likely inability of banks to raise funds sufficient to pre-fund high dividend payouts, this would likely result in most banks reducing payouts to meet the regulatory pre-funding requirement as their capital is eroded.

Indeed, **Figure 8** examines the 2007-2010 period and compares cumulative cash dividends paid on common stock by the largest banks to the capital infusions they received through the Capital Purchase Program. The chart illustrates that roughly half of the capital infusions into the largest banks during the financial crisis could have been avoided with a more proactive reduction in dividend payouts as economic problems arose.

There is little reason to believe that banks will be more proactive in the next crisis if they are no longer required to pre-fund payouts as a means of managing the risk attending stressed conditions. I also see the historical record arguing against the recently proposed change to no longer require pre-funding of payout amounts.

In summary, I am not sure that recent developments and proposals in bank regulation properly reflect the risks we are likely to face in a low interest rate environment that challenges bank profitability and provides less by way of monetary policy buffers. Specifically, capital buffers should be rising now so that there is more room for them to decline if the economy falters. While this is true for the United States, it may be even more true in Japan and Europe.

Leverage in the Corporate Sector

In a low interest rate environment with robust capital market conditions, corporations are incented to take on more leverage. And leverage potentially amplifies the economic problems that arise in a downturn.⁸ Outside the U.S., in some jurisdictions, there are more opportunities for regulators to influence or limit excessive leverage. I believe U.S. policymakers would do well to explore ways that policies could be used to prevent the buildup of leverage in a low-rate

environment, hopefully reducing the macroeconomic spillover that could result from over-levered households and firms.

Figure 9 shows the ratio of nonfinancial corporate business debt to GDP in the U.S. This ratio now exceeds its peak prior to the last recession and is at an all-time high for the series. As worrisome as this level of debt is, as the financial crisis highlighted, the distribution of risks to leverage across types of borrowers may be as important as the level of leverage itself.

Figure 10 shows the share of investment grade bonds rated BBB, the lowest rating that still qualifies as investment grade. Prior to the past two recessions, the share of BBB-rated investment-grade bonds was much lower, and then increased significantly during and following the recession. In those episodes, the rising share of BBB-rated debt initially reflected, in part, downgrades of what were formerly higher-rated securities. However, as this long recovery has progressed, the share of BBB securities has instead risen steadily, as firms have chosen to issue significant quantities of debt securities.

Figure 11 shows the share of loan issuances with high leverage, used here to refer to six or more times earnings before interest, taxes, depreciation, and amortization (EBITDA). While the share of highly leveraged loans out of total loans has increased significantly since 2010, the share of highly leveraged loans used to finance leveraged buyouts has risen even more dramatically. In the United States, guidance – including the leveraged loan guidance – is not itself legally enforceable on banks. In addition, unlike in other countries where regulators may limit leveraged lending for financial stability reasons, the suite of macroprudential tools is more limited in the U.S. and U.S. bank regulators have sought to address banks' provision of leveraged loans through consideration of safety and soundness of the individual banks. As a

result, we see that the low interest rate environment, and the global willingness to “reach for yield,” have provided a ready market for corporations issuing highly leveraged loans.

Thus, corporations are not only becoming more leveraged relative to GDP, but the distribution of credits is much more skewed towards the riskier credits than in the past. In sum, one implication of this low interest rate environment has been that it appears to have encouraged lenders to look for higher-risk and higher-return loans. That desire has been met by a ready market for corporations willing to fund themselves with this riskier debt. Unfortunately, this state of affairs is likely to lead to more corporations being in financial distress – or even being in bankruptcy – in a hypothetical recession because they are no longer able to service their high debt levels. Greater corporate losses in a downturn, in turn, will exacerbate the negative outcomes relative to those that would have occurred with a less risky state of leverage. The limited monetary policy buffers available magnify the problem. So I consider it important to ask whether such high leverage, and the potential collateral damage it may cause in a downturn, requires more significant public policy responses.

Concluding Observations

While a low interest rate environment has implications for the sufficiency of monetary policy buffers – a topic of the current monetary policy framework discussion in the United States – it also has implications for regulatory policies and financial stability policies. A low interest rate environment is likely to depress bank profits and, separately, make monetary policy less able to offset shocks. This combination suggests a higher capital buffer is required now than what would be needed in a higher interest rate environment, so that capital ratios will have more room

to decline during a downturn. At least to date, it is my view that capital regulations may not fully reflect this increased risk.

Similarly, financial stability concerns stemming from leverage in the economy may require some rethinking in a low interest rate environment. To date, in the U.S. there is no comprehensive way for public policy to address the incentives to increase corporate or household leverage in a low interest rate environment. There is, however, more latitude to influence leverage in some other countries.

In sum, I would suggest that the potential costs of the excessive leverage that arise in a low interest rate environment deserve more research and, I suspect, more focused and proactive policy actions.

Thank you.

¹ See <https://www.federalreserve.gov/monetarypolicy/review-of-monetary-policy-strategy-tools-and-communications.htm>

² For additional discussion, see April 18, 2018 remarks by Eric S. Rosengren, “[Monetary, Fiscal, and Financial Stability Policy Tools: Are We Equipped for the Next Recession?](#)”

³ Also see “[Understanding the Effects of the U.S. Stress Tests](#)” by Donald Kohn and Nellie Liang.

⁴ For a different view on the matter of pre-funding dividends and buybacks, see Sept. 5, 2019 remarks by Federal Reserve Vice Chair for Supervision Randall Quarles: <https://www.federalreserve.gov/newsevents/speech/quarles20190905a.htm>

⁵ See [Regulatory Capital Rules: The Federal Reserve Board’s Framework for Implementing the U.S. Basel III Countercyclical Capital Buffer](#).

⁶ The Bank of England’s FPC applies a 1% CCyB when economic conditions reflect a “standard risk environment.”

⁷ For a different view on the matter, see Sept. 5, 2019 remarks by Federal Reserve Vice Chair for Supervision Randall Quarles: <https://www.federalreserve.gov/newsevents/speech/quarles20190905a.htm>

⁸ Especially as the need to de-lever plays out.