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***“Economic Uncertainty – The
Implications for Monetary Policy”***

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

*Keynote Remarks at the Global Interdependence
Center’s Seventh Annual Rocky Mountain
Economic Summit*

Victor, Idaho
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Good morning. Thank you for the invitation to speak with you today. I look forward to the exchange of views and analysis that are hallmarks of these gatherings.

As I begin, I would note as I always do that the views I will express today are my own, not necessarily those of my colleagues at the Federal Reserve’s Board of Governors or on the Federal Open Market Committee (the FOMC).

As the U.S. economy approaches conditions that are consistent with beginning the process of normalizing monetary policy, it is not surprising that financial market participants would prefer simple and unqualified statements about the future path of monetary policy. However, appropriate policy necessarily depends on our forecast of the economy's path in coming months, and that path is always somewhat uncertain. Events that are unfolding of late exemplify the difficulties often faced in making economic forecasts. These events and uncertainties also reinforce the prudence of adhering to the notion of "data dependence" in making monetary policy decisions.

One significant area of uncertainty in the current forecast centers on inflation: why have we not yet seen inflation clearly returning to the 2 percent target?¹ The Federal Reserve policymakers' forecasts in the June Summary of Economic Projections² – the "SEP" – predict that core inflation will return to 2 percent, but that has been the case for earlier SEP forecasts as well and, as yet, the data on core inflation have remained surprisingly weak, even as labor markets have improved. In addition, recent international events highlight that the future path of energy prices and the dollar remain quite uncertain.

A second area of uncertainty stems from events – often difficult to predict – which domestic monetary policy cannot influence. The unfolding events in Greece provide an obvious current example. The emergence in recent weeks of questions about whether Greece and its creditors can reach a viable agreement complicates projections about how economic conditions are likely to unfold over the course of the summer and beyond.

To be clear, while these negative developments have been intensely painful for the Greek people, to date it is not obvious that these events will significantly alter the expected path of the U.S. economy. But they have surely added to the *uncertainty around* that forecast. I will offer my own perspective on that situation in a few moments.

Were the U.S. economy to unfold as I and other policymakers expected in our June SEP forecasts, beginning the policy normalization process later this year might be appropriate. However, the assumption that our current forecasts for labor markets and for inflation will unfold as expected is still subject to considerable uncertainty, a topic to which I will now turn.

Domestic Uncertainty

The evolution of the domestic economy remains somewhat concerning. Perhaps most troubling is the fact that inflation persists in remaining well below the Federal Reserve's 2 percent target. Inflation rates that are too low limit monetary policy's ability to offset the disturbances that often buffet an economy. Hence, one of the conditions that the FOMC stipulated for beginning to raise short-term rates is that the Committee should be reasonably confident that inflation will move back to its 2 percent objective over the medium term.³ Notably, the undershooting of inflation targets has been a problem in many developed countries, with Japan and Europe significantly undershooting their targets as well.

Figure 1 shows how the forecasts of inflation by FOMC participants have fallen over the last three years. The figure provides predictions, made at various times, of core PCE inflation for the fourth quarter of 2015. What you see is the so-called central

tendency of those forecasts, which excludes the three highest and the three lowest forecasts. In late 2012 and early 2013, the forecasts for inflation in 2015 were closely bunched around our 2 percent inflation target. However, as time has progressed, the SEP forecasts have reflected increasing pessimism that we will reach the 2 percent inflation goal in 2015. Over the last year, core PCE inflation has been only 1.2 percent, and the June SEP forecasts for inflation in the fourth quarter of this year had a central tendency of just 1.3 to 1.4 percent.

One reason the inflation rate may be so subdued is that significant slack – that is, excess supply – may remain in the labor market despite the simplest and most widely-reported unemployment rate having fallen to 5.3 percent. An example of potential slack in the labor market appears in **Figure 2**, which shows a steep drop in the percent of the population in the U.S. that is employed. This employment-to-population ratio declined significantly during the last recession and has only marginally improved during the recovery.

However, some of this decline is the result of a significant demographic change occurring in the workforce. Failure to take this demographic change into account would result in an overestimation of the potential slack in the labor market. A close examination of **Figure 3** shows just how dramatic the age-related demographic shift has been in the population over the last two decades. By 2014, the percentage of the population in the three younger age groups had fallen relative to 1994, while the percentage of the population in the three older age groups had risen. This demographic shift is slightly offset by the fact that more older Americans are participating in the labor force than has historically been the case.

An interesting implication of this demographic shift is that the unemployment rate should perhaps be lower at so-called “full employment.” Younger workers tend to have higher unemployment rates, since they are only beginning to acquire the skills needed by employers. Older workers tend to have very low unemployment rates if they remain in the workforce. As a result, the estimates of the unemployment rate at full employment need to consider whether changes in the demographic composition of the workforce have an impact.

This is one reason why I personally have lowered my estimate of the natural rate of unemployment to 5 percent, and I believe it may need to be adjusted even lower if inflation continues to undershoot our forecasts.

Figure 4 shows the employment-to-population ratio for three of the prime-age working cohorts.⁴ Since it is looking at narrow fixed-age groupings, its movement will not be as affected by demographic changes as would the overall employment-to-population ratio. All three age cohorts declined significantly during the recession, and have partially recovered over the past several years. However, they also highlight that in each of the age cohorts, the employment-to-population ratio remains well below levels seen in the decade prior to the recession. Even if we do not fully return to the employment-to-population ratios seen in the decade before the recession, we could still have significant labor market slack to address.

Uncertainty Related to Possible International Shocks

I would also like to provide some perspectives this morning on international shocks. Given the many pressure points around the world – Greece’s debt crisis, China’s

slowing economy, Japan's long-running economic challenges, and areas of geopolitical instability and conflict – we all recognize that a number of international disruptions to the domestic economy are at least possible.

Let me say that I am currently making the assumption that international matters will be resolved in a way that does not meaningfully alter the course of the U.S. domestic economy. However, I will also highlight the situation in Greece as an example of how difficult-to-predict international events can make forecasting the future course of the economy challenging. The situation also calls for some sober reflecting on how best to preserve financial stability in all parties' interests – and to that end I will provide a few of my own perspectives in a moment.

Recent events in Greece have underlined the fact that the Greek people are enduring a very difficult era. **Figure 5** shows that the unemployment rate in Greece has risen dramatically over the past several years, and was over 25 percent this spring, prior to the turmoil of the last few weeks. And unfortunately the modest decline in the Greek unemployment rate is not really a particularly positive development, since it partly reflects reductions in labor force participation as Greek workers have given up on looking for work in their highly depressed labor market.

Some analysts and observers suggest that any problems in Greece are unlikely to have a broader impact simply because of Greece's relatively small size. To that end, **Figure 6** provides some summary statistics. Greece is indeed a small country. With a population of 11 million people, it is small relative to the 334 million people in the Euro Area or the 507 million people in the European Union. Because per capita GDP in Greece is lower than in many European countries, Greek GDP is less than 2 percent of

the GDP of the Euro Area or the European Union. For an American frame of reference, Greece has about the same population as Ohio, and the GDP of Connecticut.

As a general principal I would say that such measures can be a bit misleading when one is calibrating financial stability risks.⁵ The absolute size of an exposure may be less important than whether that exposure is diffusely held or is concentrated with particular investors. Generally speaking, disruption can be amplified when investors are highly leveraged, and when they play a critical role in financial markets functioning smoothly.

At this point, much of the exposure to Greek assets has already been transferred from European banks to the European public sector. In 2011, a key risk was that commercial banks that were important for the stability and functioning of the financial system held highly leveraged exposures to Greece. Factually speaking, that particular financial stability risk is diminished today, as the earlier restructuring of Greek debt means that many of the losses would be borne diffusely by European taxpayers. And as you can see in **Figure 7**, the spread of peripheral countries' 10-year bonds over German bonds has been significantly less volatile recently, compared with 2011 – perhaps reflecting the diminution of that risk.

Figure 8 shows the movement of stock prices in various countries following the announcement of the Greek referendum after the close of stock markets on Friday, June 26. On Monday, June 29 there was a sizable impact (even though the referendum, as announced, would not decide the matter of Greece's future participation in the Euro Area). The decline in stock prices of about 2 percent in the United States, and more than that in other countries, suggests the importance that market participants place on events in

Greece even given its small size. Of course, we do have the caveat that the declines reflect other “news” events that may have occurred during that same time period.

To date, the impact of the situation in Greece has been modest outside of Greece itself. However, the financial market movements that I have highlighted suggest that, in a world with integrated financial markets, even modest disruptions that seem small relative to the global economy have the potential to be enhanced. This argues for thoughtful, proactive work to try to prevent or manage such disruptions.

Potential for Unintended Consequences

Events in Europe are obviously very fluid, but as a longtime observer of financial stability issues and their impact on economic participants, I will offer my perspective. I would underline the desirability of Greece and its creditors finding a reasonable compromise, which would not only help Greece but would avoid some unintended consequences for all parties in the Euro Area.

The Euro Area had been assumed to be a permanent currency union with no prospect of or procedure for countries leaving to reinstate their previous national currencies. If that assumption eroded and it were to become understood, instead, that countries could leave the Euro Area, some of the advantages of the common currency for *all* the members would be diminished. Allow me to give some examples.

One advantage of a common currency is that it eliminates exchange-rate risk. As a result, transactions anywhere in the common currency area can be conducted without concern that the relative currency valuation will change, eliminating the need for firms to

hedge their exchange rate risk. However, if a country were to exit the euro, firms would not be hedged for counterparties in that country.⁶

In essence, the common currency makes it difficult to completely hedge the “tail” risk (meaning a small likelihood, large impact event) of a country leaving the euro, and this applies not just to Greece. The emergence of this new dynamic might encourage firms and financial institutions to reduce their exposure to counterparties in some countries, or to match their assets and liabilities by country. All this would mean that some of the advantages of a common currency would be lost for *all* parties in the currency union.

A second advantage of a common currency relates to inflation discipline. Several of the countries in the Euro Area did not have success controlling inflation prior to joining the euro. However, exiting the union would imply a risk of a sharp reduction in the value of currency – essentially a large inflationary effect. So any country with a risk of exit may have the potential tail risk of much higher inflation (upon exit), and this might discourage some firms from locating in such countries, despite the other advantages.

A third advantage of a common currency is that capital can flow to the highest return projects, regardless of national borders. However, if exit becomes perceived as possible, the prospect of capital controls in countries with exit potential could discourage investment. Similarly, capital flows would be unlikely to move as freely if there is a tail risk of a large currency devaluation.

These are just three examples underlining the fact that exit could have some longer-term implications not only for Greece, but also potentially for other countries in

the Euro Area. Obviously the situation remains fluid and the next few weeks will be important. I raise these issues in the spirit of encouraging a prudent, proactive understanding and management of risks, and as clear an eye as possible to potential unintended consequences.

Concluding Observations

In summary and conclusion, I will first state the obvious: economic forecasting is important for setting appropriate monetary policy. Today, I have emphasized two areas of significant uncertainty in such forecasting.

Despite persistent improvement, the U.S. economy continues to undershoot the Federal Reserve's 2 percent inflation target. As the economy continues to improve, I expect that inflation will begin to move closer to that target, making it appropriate to consider starting to normalize monetary policy later this year. However, as we near our dual mandate goals, monetary policymaking needs to be particularly data dependent. As I have emphasized today, data dependence at this point means, in my view, that we wait for data that gives us greater confidence in our forecast, especially our forecast for inflation. And it also means we wait to get a better handle on how the crisis in Greece gets resolved, so that we can better gauge its potential to impact financial markets and the domestic economy.

Obviously, my hope is that both of these key risks will resolve in a way that supports the Committee's normalization criteria. Fortunately, to date, geopolitical issues and concerns around the world have not significantly altered the outlook for an

improving U.S. economy. Thank you again for inviting me to speak with you today. I look forward to the rest of today's program.

¹ The FOMC's Statement on Longer-Run Goals and Monetary Policy Strategy states: "The inflation rate over the longer run is primarily determined by monetary policy, and hence the Committee has the ability to specify a longer-run goal for inflation. The Committee reaffirms its judgment that inflation at the rate of 2 percent, as measured by the annual change in the price index for personal consumption expenditures, is most consistent over the longer run with the Federal Reserve's statutory mandate." http://www.federalreserve.gov/monetarypolicy/files/FOMC_LongerRunGoals.pdf

² See the June SEP at <http://www.federalreserve.gov/monetarypolicy/files/fomcprojtab120150617.pdf>

³ See the statement at <http://www.federalreserve.gov/newsevents/press/monetary/20150617a.htm>

⁴ While looking at the employment-to-population ratio for narrow age groups significantly reduces the effects of demographic changes, another way to remove the effects of demographics changes on the employment-to-population ratio and to better assess its recovery from the most recent recession is to hold the age mix of the population constant. This exercise – holding the age mix of the population constant as of 2004 – shows that some of the lack of recovery in the employment-to-population ratio can be attributed to the aging of the population. With a constant age mix, the employment-to-population ratio falls by almost an equal amount but recovers more rapidly and would be roughly two percentage points higher as of June, but still well below its previous peak.

⁵ For example, many analysts cited the small size of sub-prime mortgages relative to the size of the U.S. economy in making the argument that their loss in value would have a minimal impact. This perspective was certainly not borne out by events in the United States in 2007 and 2008.

⁶ In the case of Greece, no financial exchange would be immediately available to completely hedge the potential new-drachma exchange-rate risk.