

CENTRAL BANKS

# The financial stability mandate strikes back

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- Financial stability reemerged as a monetary policy objective after the Great Recession
- Evidence suggests that the impact of financial variables on the macroeconomy is time-varying
- The Federal Reserve has paid equal amount of attention to financial stability under both Yellen and Bernanke’s leadership

Before the Great Recession caused by the global financial crisis of 2007-09, the Federal Reserve's dual mandate, namely maximizing employment and stabilizing prices, had been regarded as the most successful practice for central banks. This dual mandate is formally stated in the Federal Reserve Act, which was amended in 1977, as:

*"The Board of Governors of the Federal Reserve System and the Federal Open Market Committee shall maintain long run growth of the monetary and credit aggregates commensurate with the economy's long run potential to increase production, so as to promote effectively the goals of maximum employment, stable prices and moderate long-term interest rates."*

Although the dual mandate appeared to be successful in the years of the Great Moderation (1985-2006), the 2007-2009 Great Recession brought the objective of financial stability into central bankers’ sight. One important lesson from the recession is that central banks should act more aggressively against growing financial imbalances. Smets (2014) has conducted an excellent survey examining different views on how central banks can mitigate threats of financial crisis by incorporating financial stability into their objectives. The author argues that financial stability should be an explicit objective of monetary policy. This view is also shared by many top researchers and central bankers, notably Woodford (2012), Reinhart and Rogoff (2013), Yellen (2014), and Diamond and Kashyap (2015).

Chart 1  
Selected Timeline of Federal Reserve Mandates



Source: Reinhart & Rogoff (2013) & BBVA Research

Moreover, the emphasis on financial stability may remind us of the early days of the Federal Reserve Bank. Back when President Wilson signed the original Federal Reserve Act in 1913, financial stability was the primary mandate of the Federal Reserve Bank. After suffering financial crises in 1893 and 1907, and being repeatedly bailed out by the finance mogul J.P. Morgan, the United States eventually reintroduced the Federal Reserve Bank as the “lender of last resort”,<sup>1</sup> with the duty to act as a stabilizer of the financial system and to mitigate threats of financial panics. The financial stability mandate for the central bank was clearly expressed in the original Federal Reserve Act, which actually had the long title of “*An Act To Provide for the Establishment of Federal Reserve Banks, to Furnish an Elastic Currency, to Afford Means of Rediscounting Commercial Paper, to Establish a More Effective Supervision of Banking in the United States, and for Other Purposes.*”

### Time-varying linkages between the financial sector and the macroeconomy

Before the Great Recession, the stability of the financial sector was not one of the primary concerns for central banks, whose workhorse models mostly ignored the role of financial intermediaries.<sup>2</sup> Such lack of interest in the financial sector reflects the dominance of the so-called “Jackson Hole consensus,” which holds that the main task for the central bank is to maintain price stability by both implicit and explicit inflation targeting and expectation guidance and that over-regulation of the financial sector may generate an undesirable outcome.

Yet the devastating impact of the financial crisis during the last recession suggests that central banks should expand their scope and take on more responsibility of “macro-prudential supervision”. That is, the central bank should more proactively monitor the robustness of the financial sector and prevent severe financial imbalance from happening. Two notable examples are the regulatory framework of the Comprehensive Capital Analysis and Review (CCAR), which was imposed by the Federal Reserve to assess the capital adequacy and the internal capital planning processes, and the Dodd-Frank Act Stress Testing rules, which require enhanced prudential supervisory standards to mitigate the threat to financial stability.

Despite growing interest in the role of financial stability in the macroeconomy, studies on how financial conditions affect the macroeconomy still remain relatively limited, and the case is further complicated by the time-varying patterns of the financial and macroeconomic variable linkages. That is, the impact of financial variables may be insignificant during economic expansions, but can rise tremendously when the economy is in a recession.

We use scatter plots to illustrate the time-varying relationships between real GDP growth and financial variables (growth of S&P 500 Index, CBOE Volatility Index (VIX), term spread and bond credit spread). As these charts show, the time-varying linkages are robust over our choice of financial variables. Chart 2 shows that the growth of the S&P 500 and real GDP don’t have a strong correlation during economic expansions. On the other hand, the correlation is highly significant during economic recessions. Similarly, Chart 3 shows time-varying correlation between the GDP growth and VIX, the “fear gauge” for the equity market. Charts 4 & 5 show GDP growth’s time-varying correlation with the treasury notes’ term spread and the credit spread of the high yield bond market—two popular measures for the health of the economy.

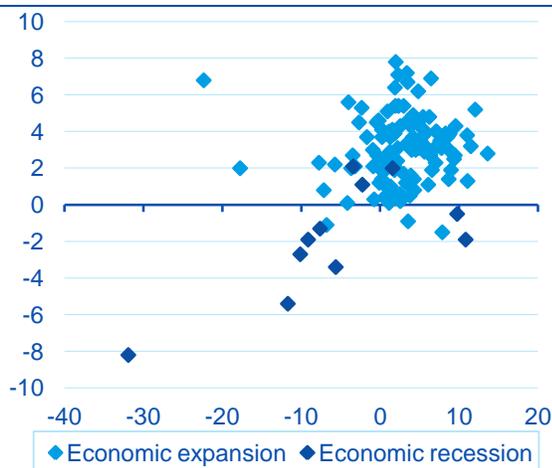
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<sup>1</sup> The previous central bank (the Bank of the United States) failed to renew its charter under President Andrew Jackson, and became a private institution in 1837. Consequently, the U.S. had no central bank between 1837 and 1913.

<sup>2</sup> One influential study by Smets and Wouters (2007) provides a comprehensive analysis on the workhorse models used by global major central banks before the Great Recession. Those models belong to the New Keynesian or New Neoclassical Synthesis (NNS) framework, and are largely based on Christiano, Eichenbaum, and Evans (2005), which does not contain the banking sector.

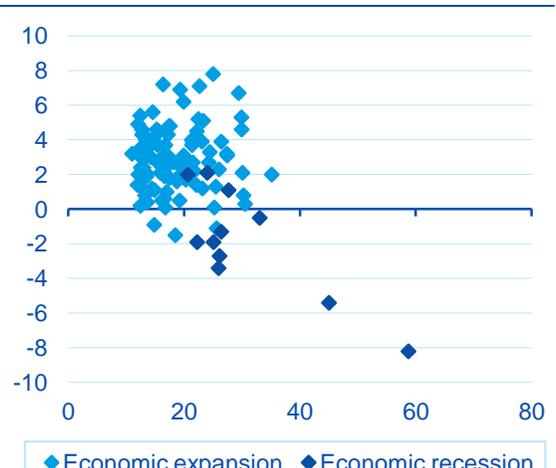
We further conducted a vector auto-regression (VAR) analysis with GDP growth and the above financial variables, and we use dummy variables to capture the extra impact of financial variables when the economy is in recession. Our variance decomposition shows that financial variables can only account for less than 10% of income growth in expansionary periods, while they can account for more than 40% in contractionary periods. It is worth noting that our result is consistent with the finding of Davig and Hakkio (2010) that the negative effect of financial stress on economic activity is larger and longer-lasting in a distressed economy. In addition, our results are in line with Prieto et al. (2016), who use a Bayesian time-varying parameter VAR and argue that financial shocks contributed 20% to GDP growth fluctuation in normal times, and 50% during the Great Recession in the U.S.

Chart 2  
**Real GDP Growth & S&P 500**  
%



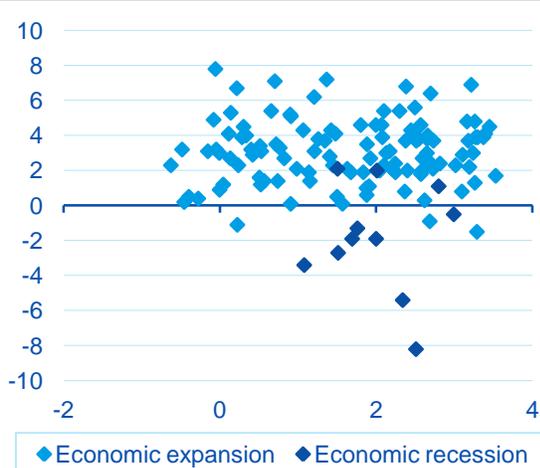
Source: Haver & BBVA Research

Chart 3  
**Real GDP Growth & VIX**  
% & index



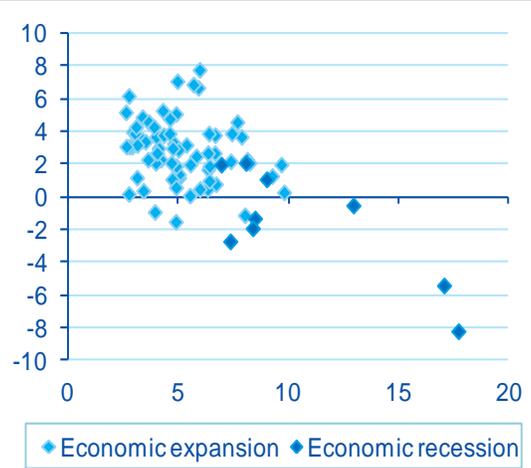
Source: Haver & BBVA Research

Chart 4  
**Real GDP Growth & Treasury Term Spread**  
%



Source: Haver & BBVA Research

Chart 5  
**Real GDP Growth & High Yield Bond Term Spread**  
%



Source: FRED & BBVA Research

### Monetary policy and financial stability: models and words

Largely because of the complexity of the financial sector, explicitly incorporating financial stability into central banks’ structural models still remains a major challenge for monetary policymakers.<sup>3</sup> Today, one of the most widely used models to address the financial stability issue is the “financial accelerator” model developed by Bernanke, Gertler, and Gilchrist (1999). This model supports the view that small changes in financial and credit conditions can lead to large changes in the economy, and stresses the role of the feedback loop between the real economy and the financial intermediaries. In other words, when the economy is in normal times, banks charge lower interest rates to firms because of their relatively strong balance sheets. The firms are then able to increase their investments and contribute to economic growth. However, when there is a negative financial shock, this loop works in reverse, creating an adverse feedback loop. The so-called “financial accelerator” channel implies that even insignificant financial stress can be propagated to serious problems and damage the real economy. Therefore, the central bank should watch out for any events that could stimulate financial market deterioration in order to avoid an economic recession.

Another way to understand the decision-making process of the Federal Reserve Bank is to study the FOMC meeting minutes with text mining techniques. Analyzing word patterns in the 33 minutes released during former Federal Reserve Chairman Bernanke’s tenure and in the 15 minutes during current Chairperson Yellen’s time in office thus far, we can gauge how much stress they place on stability, financial markets, labor, inflation and other economic indicators during recessionary and expansionary periods. In Bernanke’s 33 meeting minutes, the words “financial” and “stability” were mentioned in 842 and 482 instances, respectively. Placed in the context of the largely recessionary period of Bernanke’s term, the heavy use of these terms seems appropriate to the situation. On the other hand, during Yellen’s term, “financial” was used 372 times and “stability” 211 times in just 15 meeting minutes—matching Bernanke’s average number of mentions of these words per minute. The Fed’s use of these words during Yellen’s term hints that it is paying equal attention to the financial stability mandate despite the current expansionary period.

Chart 6  
Word cloud of FOMC Minutes in Bernanke era



Source: FRB & BBVA Research

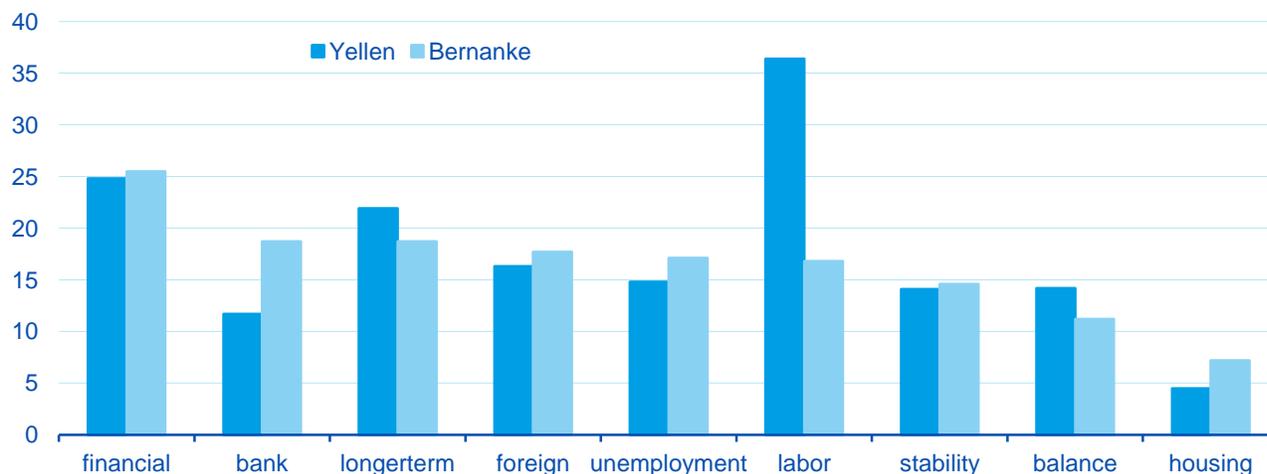
Chart 7  
Word cloud of FOMC Minutes in Yellen era



Source: FRB & BBVA Research

<sup>3</sup> For example, the Bank of England’s most recent workhorse model, COMPASS, still does not contain financial sector, and therefore the financial stability issues have to be indirectly modeled in the so-called “suite” models.

Chart 8  
Word frequency per FOMC meeting minute



Source: FRB & BBVA Research

As explained above, financial market performance shows little correlation with GDP growth during expansionary periods. However, happenings on Wall Street have a larger influence on the Fed’s decisions than they had before 2007. Although the Fed appears to overstress the financial situation in the Yellen era, the emphasis on financial stability could be an attempt to stay mindful of events that might trigger another recession in order to adhere to the Fed’s financial stability mandate.

### Bottom line

Financial variables, such as stock market performance, corporate credit spread and term spread, show high correlation to GDP growth in recessionary periods, but little correlation to the macroeconomy in expansionary periods. That said, despite the fact that the economy is currently in recovery, the Fed is attaching just as much significance to financial stability as it did during the recession, as reflected in the wording of its meeting minutes. This points to the expansion of the Fed’s mandate, particularly after the Great Recession, to include the constant monitoring of the financial sector in order to prevent financial imbalance and future economic contraction. As a result of the Fed’s broader mandate, we expect that the minutes of the Fed’s April meeting will continue the trend of emphasizing financial variables, such as the most recent decline in market volatility.

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