



Held Back by Uncertainty

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Recoveries are slowed when businesses and consumers are unsure of the future

SOME economists and politicians argue that the two years of harsh times visited on the United States and euro area during the Great Recession of 2008–09 should have been followed by rapid recoveries. Milton Friedman—the late Nobel Prize-winning economist—called this the “guitar string” theory of recessions. When you pull a guitar string down, then release it, the string bounces right back. And the farther you pull it down, the faster it returns.

However, the economic performance in many advanced economies since the Great Recession has not followed that script. Instead, the deep recessions in those economies were followed by recoveries that have been disappointingly weak and slow. It is as if the guitar string was pulled down so hard that it snapped.

These developments are something of a mystery: Why has the current recovery been so slow? Some argue that recoveries following financial crises tend to be slow because

the legacy of the crisis—balance sheet repair, weak credit expansion, and lingering problems in housing markets—weighs on activity (for example, Claessens, Kose, and Terrones, 2012). This argument certainly has its merits, considering the historical record.

However, the ongoing recovery has been different at least in one important dimension from the earlier ones—whether associated with financial crises or not. It has experienced bouts of elevated uncertainty. This suggests a complementary explanation for the anemic recovery, one that emphasizes the roles played by macroeconomic and policy uncertainty in curtailing economic activity. Businesses have been uncertain about the fiscal and regulatory environment in the United States and Europe, and this fear of an unknowable future has probably been one of the factors leading them to postpone investment and hiring. This is clearly illustrated in a recent survey in the United States by the National Association for Business Economics

Measuring uncertainty

It is a challenge to quantify uncertainty because it is not an observable variable but rather one that is deduced from others. In the language of statistics, uncertainty is a latent variable.

But it is possible to gauge it indirectly in a number of ways, using measures that emphasize distinct aspects of uncertainty that an economy faces over time. Some of the measures focus on macroeconomic uncertainty—including the volatility of stock returns, dispersion in unemployment forecasts, and the prevalence of terms such as “economic uncertainty” in the media. Others consider uncertainty at the microeconomic level, which is often measured by various indicators that capture variation across sectoral output, firm sales, and stock returns and dispersion among forecasts by managers in manufacturing firms (Bloom, 2009; Baker, Bloom, and Davis, 2012).

Because we are concerned primarily with macroeconomic uncertainty, we concentrate on four measures based on the volatility of stock returns and economic policy. The first is

the monthly standard deviation of daily stock returns in each advanced economy in our sample of 21 countries, which captures uncertainty associated with firm profits and is also shown to be a good proxy for aggregate uncertainty (see Chart 1). The second is the Chicago Board Options Exchange Volatility Index (VXO), which is an indicator of the implied volatility of equity prices calculated from S&P 100 options. The third refers to uncertainty surrounding economic policies in the United States and euro area and is a weighted average of three indicators: the frequency with which terms like “economic policy” and “uncertainty” appear together in the media; the number of tax provisions that will expire in coming years; and the dispersion of forecasts of future government outlays and inflation (see Chart 2). The fourth, which represents uncertainty at the global level, captures the common movement in the first measure using data for the six major advanced economies with the longest available series (Chart 1).

(*Economic Policy Survey*, 2012), which reported that the “vast majority” of a panel of 236 business economists “feels that uncertainty about fiscal policy is holding back the pace of economic recovery.”

How important is uncertainty in driving economic activity? This article addresses that question by analyzing the main features of uncertainty and its impact on growth.

Here, there, and everywhere

Economic uncertainty refers to an environment in which little or nothing is known about the future state of the economy. There are many sources of economic uncertainty, including changes in economic and financial policies, different views about growth prospects, productivity movements, wars, acts of terrorism, and natural disasters. Although uncertainty is difficult to quantify, recent research has been able to develop a number of measures using a wide range of approaches (see box).

It does not matter which measure is used: it is clear that uncertainty has increased in recent times (see Chart 1). Uncertainty about economic policies in the United States and the euro area has surged since the 2008 recession, and remained stubbornly high ever since (see Chart 2). In the United States, uncertainty has recently been driven primarily by wrangling over fiscal policy, including taxes and government spending, and long-term structural issues, such as health care and regulatory policies and entitlement programs—such as the government-sponsored retirement plan Social Security and old-age health plan Medicare. Interestingly, monetary policy uncertainty does not appear to be one of the major factors behind the recent rise in policy uncertainty, possibly because of low and stable inflation and interest rates.

At the national level, uncertainty about the economy runs contrary to the business cycle. During expansions, macroeconomic uncertainty is, on average, much lower than

during recessions, regardless of the measure we use (see Chart 3). Likewise, microeconomic uncertainty about specific industries or companies, measured by the volatility of movements in plant-level productivity in the United States, also behaves countercyclically and reached a post-1970 high during the Great Recession (Bloom and others, 2012).

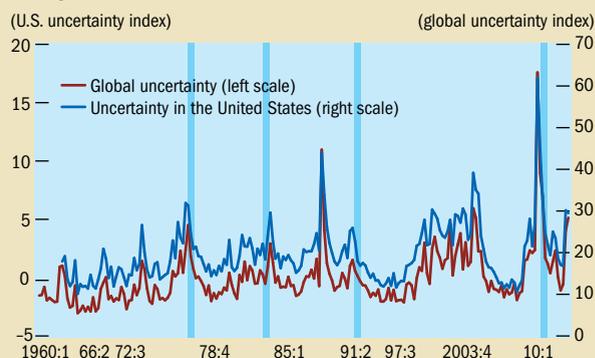
Uncertainty and economic activity

However, it is difficult to establish causality between uncertainty and the business cycle. Does uncertainty drive recessions or do recessions lead to uncertainty? Although it is hard to provide a conclusive answer to this question, economic theory does point to clear channels through which uncertainty can have a negative impact on economic activity.

Chart 1

Uncertainty rising

Uncertainty rises during recessions and did so dramatically during the Great Recession.



Sources: Kose, Loungani, and Terrones (2012); and authors' calculations.

Note: Shaded areas denote periods of global recession (1975, 1982, 1991, 2009). The U.S. index gauges macroeconomic uncertainty and measures stock market volatility. The global index focuses on common movements in stock market volatility for six major advanced economies—France, Germany, Italy, Japan, the United Kingdom, and the United States.

Chart 2

Stubbornly high

Policy uncertainty in the United States and the euro area has remained high since 2008.

(policy uncertainty index, January 2008 = 100)



Sources: Baker, Bloom, and Davis (2012); and www.policyuncertainty.com.

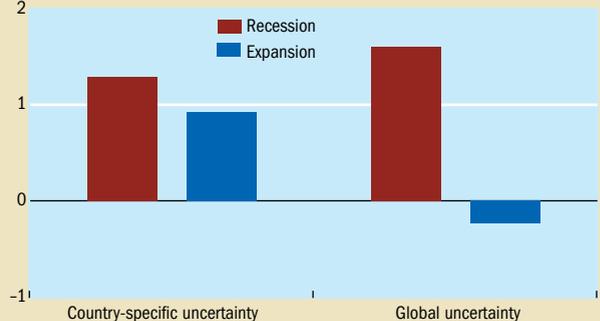
Note: Index gauges macroeconomic uncertainty and measures stock market volatility; media mentions of "economic policy" and "uncertainty"; the number of tax provisions expiring in coming years; and the dispersion of forecasts of future government outlays and inflation.

Chart 3

Cyclical variation

During recessions uncertainty is much higher than during expansions—whether about the prospects for a specific country or the global economy.

(uncertainty index)



Source: Kose and Terrones (2012).

Note: Country-specific uncertainty is the monthly deviation of daily stock returns in each of the advanced economies. Global uncertainty is the common factor of the country-specific uncertainty for six economies (France, Germany, Italy, Japan, United Kingdom, United States). The data cover the period 1960–2011.

On the demand side, for example, when faced with high uncertainty, firms reduce investment demand and delay projects as they gather new information, because investment is often costly to reverse (Bernanke, 1983; Dixit and Pindyck, 1994). The response of households to high

Moreover, a relatively small, 1 standard deviation, increase in uncertainty is associated with a decline in output growth of between 0.4 and 1.25 percentage points, depending on the measure of macroeconomic uncertainty (Kose and Terrones, 2012).



It does not matter which measure is used: it is clear that uncertainty has increased in recent times.

uncertainty is similar to that of firms: they reduce their consumption of durable goods as they wait for less uncertain times. On the supply side, firms' hiring plans are also negatively affected by higher uncertainty, reflecting costly adjustment of personnel.

Financial market problems, such as those we have witnessed since 2007, can amplify the negative impact of uncertainty on growth. For example, uncertainty leads to a decline in expected returns on projects financed with debt and makes it harder to assess the value of collateral. As a result, creditors charge higher interest rates and limit lending during uncertain times, which reduces firms' ability to borrow. The decline in borrowing causes investment to contract, especially for credit-constrained firms, and results in slower productivity growth because of reduced spending on research and development. These factors together can translate into a significant reduction in output growth.

Empirical evidence suggests that uncertainty tends to be detrimental to economic growth. The growth rate of output is negatively correlated with macroeconomic uncertainty.

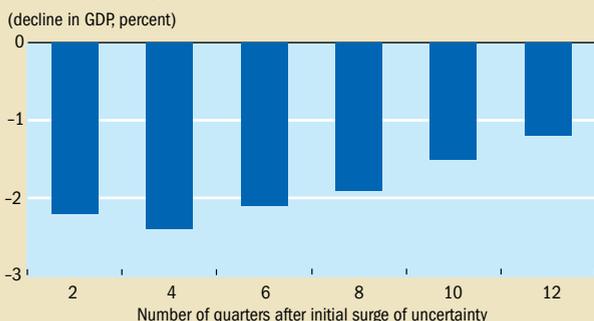
Policy-induced uncertainty is also negatively associated with growth, with policy uncertainty increasing to record levels since the Great Recession. Specifically, the sharp increase in policy uncertainty between 2006 and 2011 may have stymied growth in advanced economies (Bloom, 2009; Baker and Bloom, 2011; Bloom and others, 2012; Hirata and others, forthcoming). Empirical evidence indicates that such a large increase in policy uncertainty is associated with a highly persistent and significant decline in output (see Chart 4).

The degree of economic uncertainty also appears to be related to the depth of recessions and strength of recoveries. In particular, recessions accompanied by high uncertainty are often deeper than other recessions (see Chart 5). Similarly, recoveries coinciding with periods of elevated uncertainty are weaker than other recoveries. The unusually high levels of uncertainty the global economy experienced since the latest financial crisis and the associated episodes of deep recessions and weak recoveries play an important role in explaining these findings. Moreover,

Chart 4

Depressing effect

A large increase in policy uncertainty is associated with a highly persistent and significant decline in output.



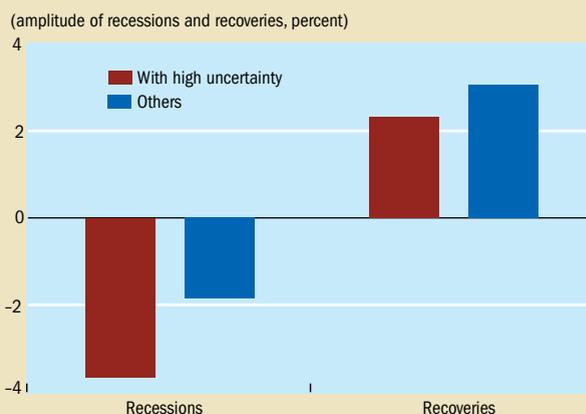
Sources: Baker, Bloom and Davis (2012); and www.policyuncertainty.com.

Note: This chart shows that GDP declines 2.2 percent in the second quarter in response to an increase in uncertainty in the first quarter, 2.4 percent in the fourth quarter, and so on. The increase in uncertainty is assumed to be equal to the change from 2006 (the year before the global financial crisis) until 2011. These results are based on an econometric model called vector autoregression (VAR). The VAR model is estimated using quarterly data from 1985 to 2011 and includes the following variables: the uncertainty index, GDP, the S&P 500 index, the federal funds rate, employment, investment, and consumption.

Chart 5

Uncertainty matters

Recessions accompanied by high uncertainty are often deeper than other recessions, and recovery is slower.



Source: Kose and Terrones (2012).

Note: The amplitude of a recession is the percent decline in output from peak to trough. The amplitude of a recovery is the one-year change in output from the trough of the recession.

the ongoing recovery in advanced economies has coincided with lower cumulative growth in consumption and investment along with a sharp and sustained contraction in investment in structures as uncertainty has stayed elevated (Kose, Loungani, and Terrones, 2012).

Policymakers can help

High uncertainty historically coincides with periods of lower growth. The recent pickup in uncertainty increases the likelihood of another global recession. It is difficult for policymakers to overcome the intrinsic uncertainty economies typically face over the business cycle. However, uncertainty about economic policy is unusually high, and it appears to contribute significantly to macroeconomic uncertainty. By implementing bold and timely measures, policymakers on both sides of the Atlantic can reduce policy-induced uncertainty. This can in turn help kick-start economic growth in the euro area and strengthen the recovery in the United States. ■

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