



# Economic Letter

## One-Size-Fits-All Monetary Policy: Europe and the U.S.

by Mark A. Wynne and Janet Koech

► *In the eyes of the skeptics, each country is better off setting its own interest rates at levels appropriate for local conditions.*

**T**he ongoing euro-area crisis is seen by many as vindication of skeptics who said that a monetary union encompassing a disparate group of countries is doomed to fail because the countries do not constitute what economists call an optimum currency area. Thus, they argued, a one-size-fits-all monetary policy that goes with participation in an alliance such as the European Economic and Monetary Union (EMU) creates strains that ultimately prove insurmountable.

In the eyes of the skeptics, each country is better off setting its own interest rates at levels appropriate for local economic conditions. Such a contention raises the question: How far apart were the interest rates the European Central Bank (ECB) set for the euro area as a whole from those that would have been more appropriate for individual member states given their local economic conditions?

### Tailored to Domestic Conditions

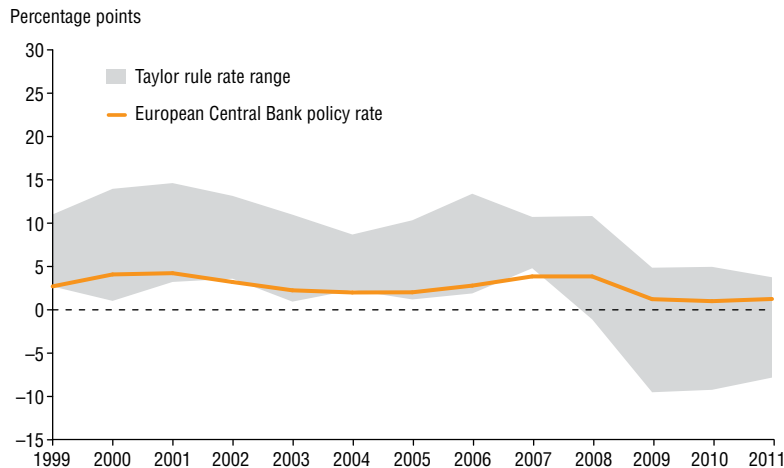
To answer this question, we computed policy rates that would be prescribed by the so-called Taylor rule for the 12 original members of the monetary union, using national data for each country.<sup>1</sup> Stanford University economist John Taylor theorized that the appropriate policy rate depends on a country's economic

output relative to its potential (popularly known as the "output gap") and the deviation of inflation from the central bank's inflation goal.<sup>2</sup> The Taylor rule prescribes higher interest rates when output is above trend and inflation is above target—and lower interest rates when output is below trend and inflation is below target.

Using the Taylor rule, policy rates were calculated for each of the 11 original members of the EMU, plus Greece (which joined the EMU in 2001), based on country-specific output gaps and inflation rates. Following Taylor's original analysis, the output gap was computed using the deviation of real gross domestic product (GDP) from a simple linear trend, and inflation was measured as the annual percentage change in the GDP deflator (a price index used to convert the nominal value of GDP to account for price changes).<sup>3</sup> A 2 percent inflation target is assumed for each country.

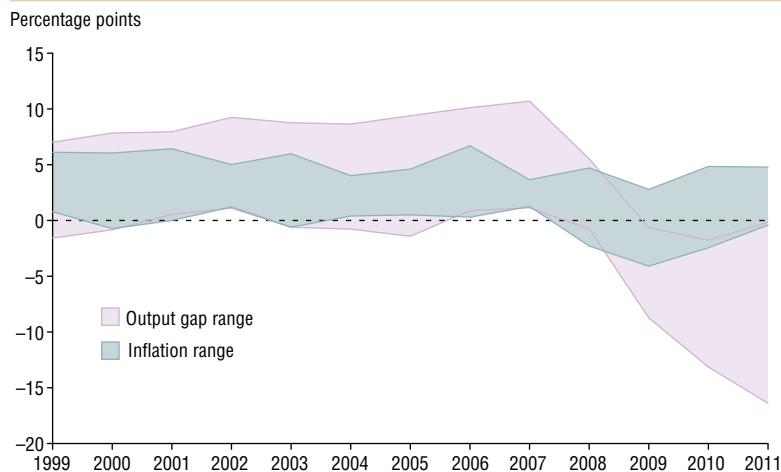
The range of interest rates prescribed by the Taylor rule for the euro area since the launch of the euro in 1999, along with the actual ECB-set rate, is shown in Chart 1. As one might expect, the Taylor rule prescribed much higher interest rates for some countries than were set by the ECB, and much lower rates for others. In fact, the range of prescribed rates averaged 10.6 percentage points from 1999 to 2011. Note also that the level of interest

**Chart 1** Taylor Rule Rate Prescribes Broad Range for Euro 12 Nations



SOURCES: Federal Reserve Board/Haver Analytics; authors' calculations.

**Chart 2** Euro-Area Output Gap Wider than Inflation Range



NOTE: The average output-gap range from 1999 to 2011 is 9.5 percentage points, and the average inflation range is 5.5 percentage points.

SOURCES: Statistical Office of the European Communities/Haver Analytics; authors' calculations.

rates set by the ECB tended to be toward the lower end of the range prescribed by country-specific economic conditions.

The currency union's weaknesses were exposed in the aftermath of the global financial crisis, when the gap between ECB and country-specific Taylor rates widened. Economic conditions in several peripheral euro-area countries deteriorated significantly following the financial turmoil of late 2008. In Ireland

and Spain, housing market bubbles burst, pressuring those countries' banking systems. In Greece, a sovereign debt crisis erupted as past excesses came to light. At the same time, economies in the core euro region rebounded from the global financial crisis, creating large economic disparities within the region and making it harder for one policy to address the economic needs of all countries. In 2011, the Taylor rule policy rate prescriptions

ranged from -7.8 percent to 3.8 percent.

Applying one monetary policy to vastly different economies, with no set mechanisms to even out economic imbalances, has been one of the EMU's major challenges. When the euro was adopted in 1999, Ireland's economy was growing at close to 10 percent, while Germany's was expanding at around 2 percent. The output gaps were 3.2 percent in Ireland and 0.5 percent in Germany. However, because the financial crisis affected Ireland, with its housing sector problems, much more than it did Germany, Ireland's output gap reversed and widened in 2011 to -16.4 percent, compared with Germany's 0.2 percent.<sup>4</sup> ECB policymakers confronted a dilemma: To whose economy should they respond when setting a target interest rate—Ireland's, Germany's or the average of the two?

According to the treaty governing the EMU, the primary objective of the ECB is to maintain euro-area price stability. The ECB has defined price stability as an annual rate of inflation that is "below, but close to, 2 percent over the medium term."<sup>5</sup> In 1999, at the euro's inception, Luxembourg (with an annual inflation rate of 6.1 percent) had the largest deviation from the 2 percent target, while France (with inflation of 0.8 percent) had the lowest.<sup>6</sup> In 2011, Luxembourg still had the highest inflation rate, 4.8 percent, while Ireland experienced deflation of 0.4 percent. The range of inflation across the union was not as large as the difference in the output gap (*Chart 2*).

### Looking at the U.S.

The range of prescribed interest rates seems rather large and suggests that there may be something to the story that the one-size-fits-all monetary policy contributed to the crisis. But to get a better sense of whether the interest rate range is large, consider what the Taylor rule would prescribe for the eight Bureau of Economic Analysis (BEA) regions in the U.S. if each region set its own monetary policy based on its output gap and inflation rate. Using data on real gross state product (GSP) for the regions, an output gap for each was computed with the same procedure used earlier for the euro area.

Region-level inflation was measured in a comparable manner, using the annual change in the GSP deflator.

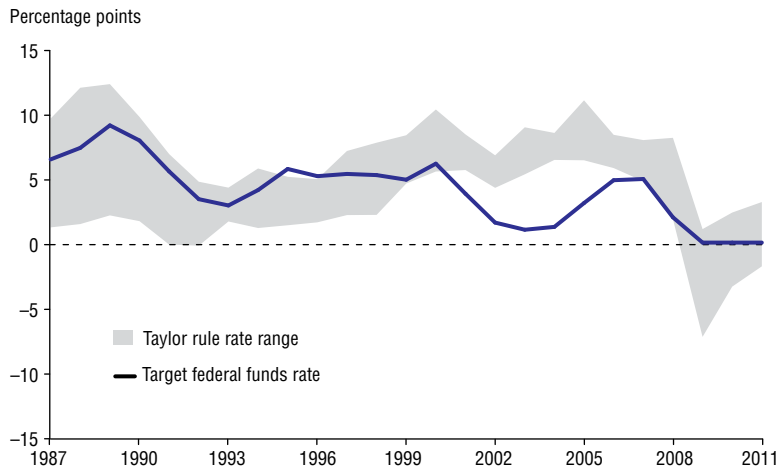
The lower and upper bounds of the recommended rate specification across the eight regions and the actual federal funds rate from 1987 onward are depicted in Chart 3. The starting date of 1987 marked the beginning of Alan Greenspan's Federal Reserve chairmanship. We see that the Taylor rule prescribes a narrower range of interest rates across the U.S. regions than across the countries in the euro area. The average range of prescribed rates for the sample period is about half that indicated for the euro zone—5.2 percentage points versus 10.6 percentage points. Note that, according to these estimates, the actual level of the federal funds rate was not appropriate for a single BEA region in the U.S. in 1995 and 1996. The deviation was even greater from 2001 to 2006.

### Root of the Problem

It's not surprising that the range of prescribed interest rates tailored to local (state) conditions is greater within the euro area than within the U.S., suggesting that a one-size-fits-all monetary policy does not work well for the euro region. The U.S. is a lot closer to being a genuine single market than the euro area, the argument goes, and goods, services and factors of production are quickly reallocated across the U.S. in response to variations in local conditions. A booming Texas will attract workers from a slumping Michigan, for example, damping wage and price pressures in Texas while putting a floor under wage and price declines in Michigan.

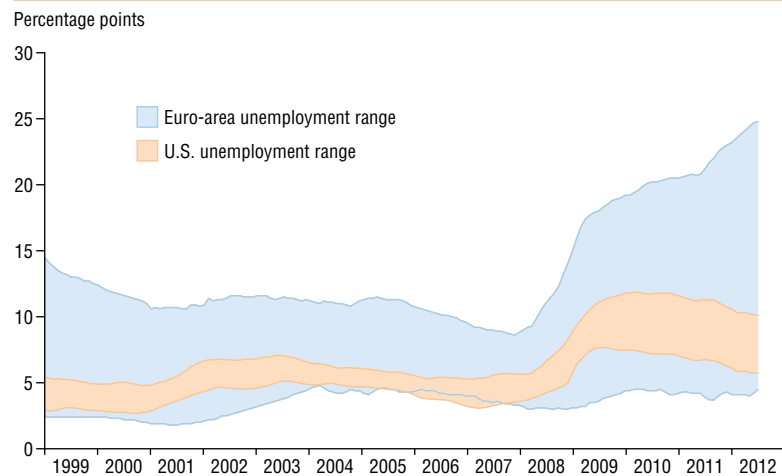
Within the euro area, cultural, language and structural barriers impede labor movements, creating huge disparities caused by diverging economies. The difference became especially pronounced during the 2008–09 global financial crisis and the sovereign debt crises. Recent unemployment rates, for July 2012, varied from Austria's 4.5 percent to Spain's 25.1 percent—a much broader disparity than among U.S. regions, which ranged from 5.9 percent in the Plains states to 10.2 percent in the Far West.<sup>7</sup> The average

**Chart 3** U.S. Policy Rate Outside Taylor Range in 2001–06 Period



SOURCES: Bureau of Economic Analysis; Federal Reserve Board/Haver Analytics; authors' calculations.

**Chart 4** Unemployment Rate Range Narrower in U.S. than Euro Area



NOTE: The average unemployment range from 1999 to 2012 is 2.6 percentage points for the U.S. and 10.2 percentage points for the euro area.

SOURCES: Bureau of Labor Statistics; Statistical Office of the European Communities/Haver Analytics; authors' calculations.

divergence of unemployment rates in the euro area is about four times the average size of the U.S. regions' unemployment rate gap (Chart 4). The smaller divergence in the U.S. is due to its relatively larger factor mobility—in particular, the freer movement of labor.

The average deviation between ECB policy rates and recommended euro-area Taylor rates is twice as large as that in the U.S., highlighting the currency union's

difficulty living with a one-size-fits-all monetary policy and other institutional shortcomings.

Two key institutional differences are apparent between the union of the 50 U.S. states and that of EMU member states. First, 49 U.S. states have constitutional balanced-budget requirements.<sup>8</sup> This limits the potential for the sorts of fiscal excesses that led to the crisis in Greece. Second, the U.S., apart from its monetary union,

has a banking union with federally backed deposit insurance. Thus, when the banking system in the Southwest came under stress during the 1980s, the pain of its resolution was shared among all 50 states rather than placed on citizens of the worst-affected areas. By contrast, when the banking system in Ireland was on the brink of collapse in late 2008, the burden of saving it fell on that country's citizens rather than on all euro-area citizens.<sup>9</sup>

### Reallocating Resources

It is perhaps not surprising that the current crisis in the euro area is prompting European leaders to adopt institutional arrangements similar to those in the U.S.

The so-called fiscal compact, agreed upon in December 2011 and currently undergoing member-state parliamentary approvals, mandates that countries participating in the EMU balance their budgets.<sup>10</sup> It also includes mechanisms to enforce the balanced-budget requirement. Likewise, the crisis has prompted talk of more bank regulation at the European rather than national level and the introduction of euro-area deposit insurance to stave off potential bank runs.

When members of a monetary union experience different macroeconomic conditions, a single policy is unlikely to work in all circumstances. Mobility of production factors such as capital and labor narrow the gap between regions experiencing an economic boom and those in a slump. The wide gaps in the Taylor rule's current recommendations for the euro area show that one size cannot fit all when economic conditions in

two regions are markedly different—especially in an environment in which tools to reallocate resources between regions are limited. The policy gaps in the U.S. are narrower because it relies on fiscal policy and relatively high labor mobility to counter economic weakness.

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### Notes

<sup>1</sup> See "Discretion Versus Policy Rules in Practice," by John B. Taylor, Carnegie-Rochester Conference Series on Public Policy, vol. 39, 1993, pp. 195–214.

<sup>2</sup> Specifically, the Taylor rule prescribes a policy rate  $i$  that depends on a constant (2), the current inflation rate  $\pi$ , the deviation of inflation from target ( $\pi - \pi^*$ ) and the output gap ( $y - y^*$ ):  $i = 2 + \pi + 0.5(\pi - \pi^*) + 0.5(y - y^*)$ .

<sup>3</sup> Measurement of the output gap, the deviation of actual output from potential or trend, presents numerous challenges. The approach we have adopted is the simplest statistical approach to measuring such gaps, but there are many others. It is impossible to know if the results are robust to all possible definitions of trend, but we have verified that they continue to hold if we allow for a time-varying as opposed to constant trend rate of growth.

<sup>4</sup> If actual, short-term GDP is more than potential long-term GDP, there is a positive output gap; if actual GDP is less than potential, there is a negative output gap. Note that starting in 2008, the Taylor rule has been prescribing negative policy rates for some countries in the euro area of -1 percent to -10 percent.

<sup>5</sup> See *The Monetary Policy of the ECB*, Frankfurt, Germany: European Central Bank, 2011. Note that the ECB defines price stability in terms of the annual increase in the Harmonised Index of Consumer Prices, while we measure inflation in terms of the GDP deflator.

<sup>6</sup> The inflation rates reported here are based on year-over-year changes in the GDP deflator.

<sup>7</sup> The Plains states included are Iowa, Kansas, Minnesota, Missouri, Nebraska and North and South Dakota; Far West states are Alaska, California, Hawaii, Nevada, Oregon and Washington.

<sup>8</sup> Vermont is the only U.S. state without a constitutional or statutory requirement of a balanced budget.

<sup>9</sup> The statement released by EU leaders following their June 28–29, 2012, meeting indicated that changes may be coming to ensure that countries across the euro area more broadly share the burden of the Irish banking sector rescue.

<sup>10</sup> The fiscal compact aims to strengthen fiscal discipline through the introduction of automatic sanctions and stricter surveillance by establishing a "balanced budget rule" requirement. Twenty-five of the European Union's 27 member states signed the treaty; the exceptions were the United Kingdom and Czech Republic. The treaty is scheduled to come into force once it has been ratified by at least 12 member states. Seven of the 25 signatory states had ratified it as of August 2012.



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