Should the monetary authority have as its primary objective price stability?

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The monetary policy structure of EU

From 1979 with the introduction of European Monetary System (EMS) Europe showed us the monetary strategy is going to follow. The countries agreed the "borrow" the Deutsche bank's reliability in order to achieve low inflation rates and price stability which was a major problem in 1980's decade.

With the agreement of the Maastricht treaty the European countries agreed the monetary policy Euro is going to follow the Economic and Monetary Union (EMU). In that treaty they agree the structure of European Central Bank's (ECB) objectives. The primary goal of ECB is the price stability of the common currency and the inflation must be around 2%.

According to the Maastricht treaty the ESCB monetary policy object is:

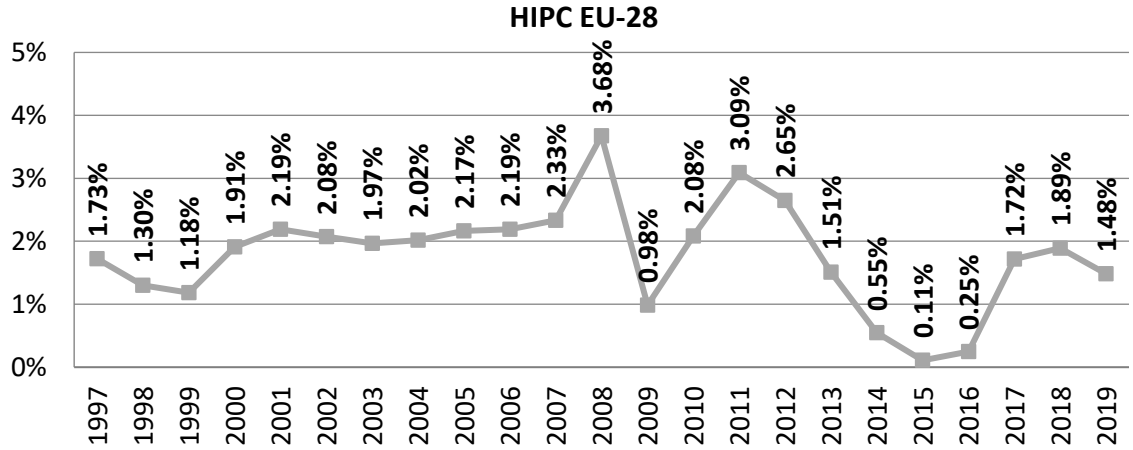
"The primary objective of the ESCB shall be to maintain price stability. Without prejudice to the objective of price stability, the ESCB shall support the general economic policies in the Community with a view to contributing to the achievement of the objectives of the Community as laid down in Article 2. The ESCB shall act in accordance with the principle of an open market economy with free competition, favouring an efficient allocation of resources, and in compliance with the principles set out in Article 3a."

In addition, primary criterion of a nation to join in the Economic and Monetary Union (EMU) is:

"The criterion on price stability referred to in the first indent of Article 109j(l) of this Treaty shall mean that a Member State has a price performance that is sustainable and an average rate of inflation, observed over a period of one year before the examination, that does not exceed by more than 1 $^{1}/_{2}$ percentage points that of, at most, the three best performing Member States in terms of price stability. Inflation shall be measured by means of the consumer price index on a comparable basis, taking into account differences in national definitions."

Until now ECB primary goal of monetary policy is to maintain the inflation rates of below, but close to 2%.

We can see below the inflation rates of EU-28 from 1997 until 2019. Until 2007 the inflation rates were close to the goal but from 2008, we can notice a great instability due the great recession which stroke the European Union.



The average value of the HIPC from 1997 until 2019 is **1,78%**, the variance is **0,0069%** and standard deviation is **0,83%**.

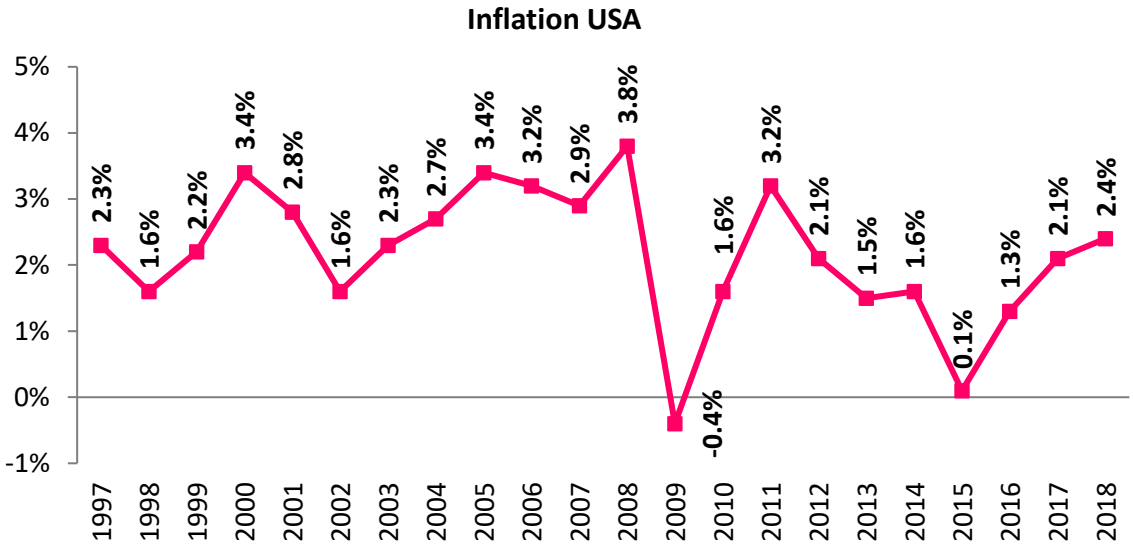
The monetary policy of FED

The United States central bank known as Federal Reserve System (or FED) was an entirely different structure from ECB. The primary goal of monetary policy of FED is the management of the availability and cost od credit and the level of short-term interest rates as complements fiscal policy to support economic growth. The American Congress set three goals in priority order:

1. Maximum employment
2. Stable prices
3. Moderate long-term interest rates

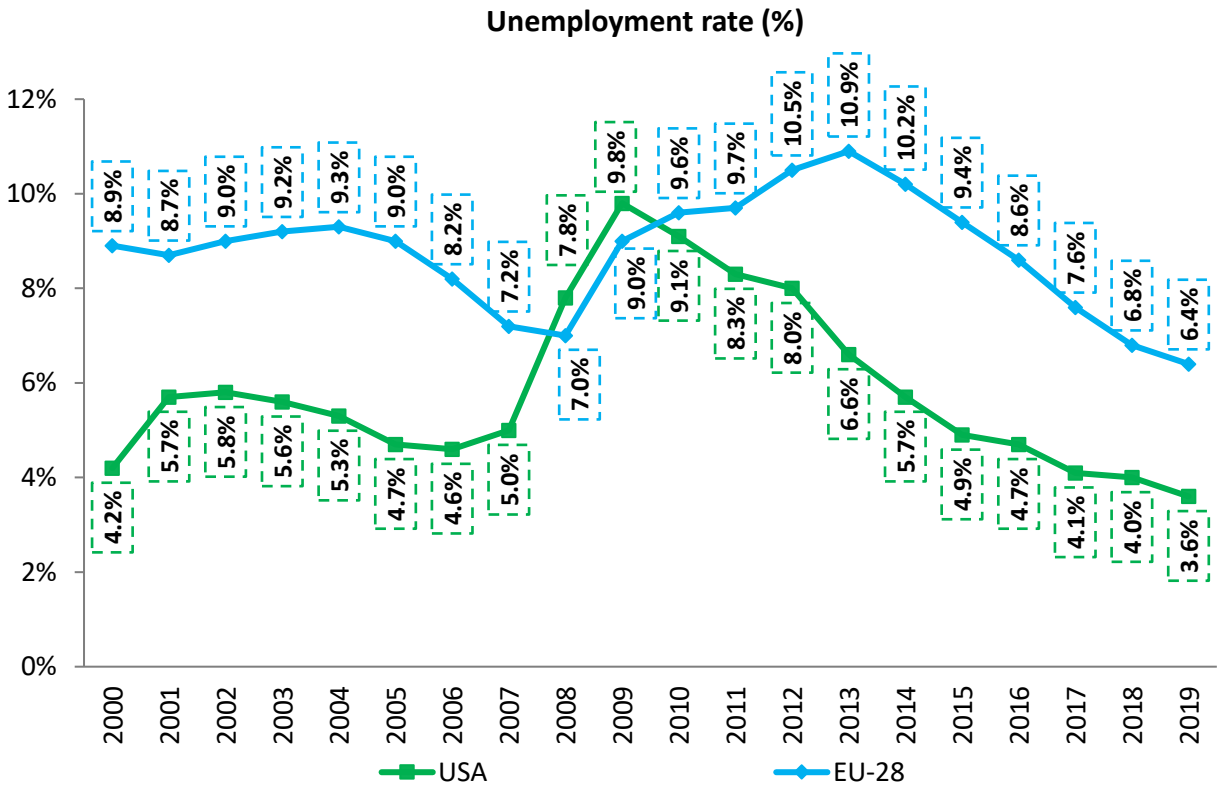
We can notice that FED has to use the monetary policy in order to decrease the unemployment and stabilize the prices of the USA's economy instead of ECB which only goal is to keep the inflation around 2%.

Even though FED policy is quite different of ECB the inflation rates of United States is slightly higher. We can observe that inflation of USA has a bigger fluctuation than EU but it never exceeds 4%. In addition, financial crisis of 2008 affect the inflation of USA only in short term.



The average inflation of USA from 1997 until 2018 is **2,2%** with the variance is **0,010%** and standard deviation is **1,040%**.

On the other hand, unemployment rates of those two entities is quite different. USA's unemployment is quite lower that EU-28 almost all years of new century, except of 2008 and 2009 (the financial crisis of United States and the bankruptcy of Lehman Brothers).



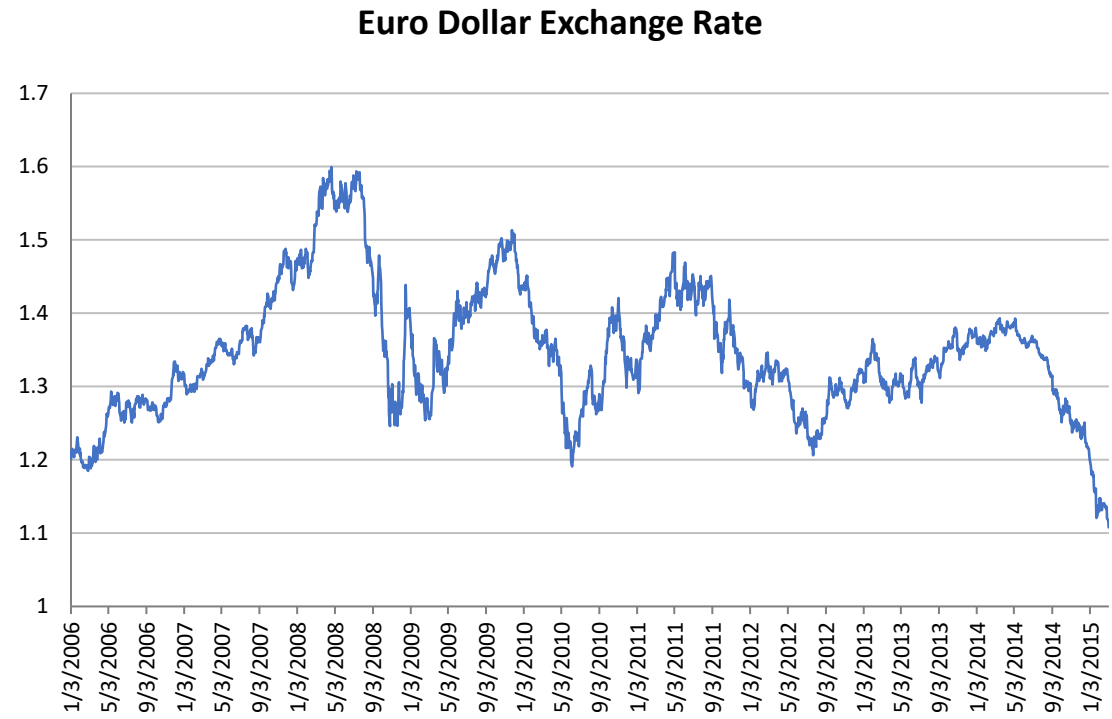
The EU-28 average unemployment rate is **3,9%** bigger than USA's (EU-28 average is **8,8%**, USA average is **5,9%**). EU-28 variance is **0,02%** and standard deviation is **1,2%**. USA variance is **0,03%** and standard deviation **1,8%**.

The core on low inflation strategy

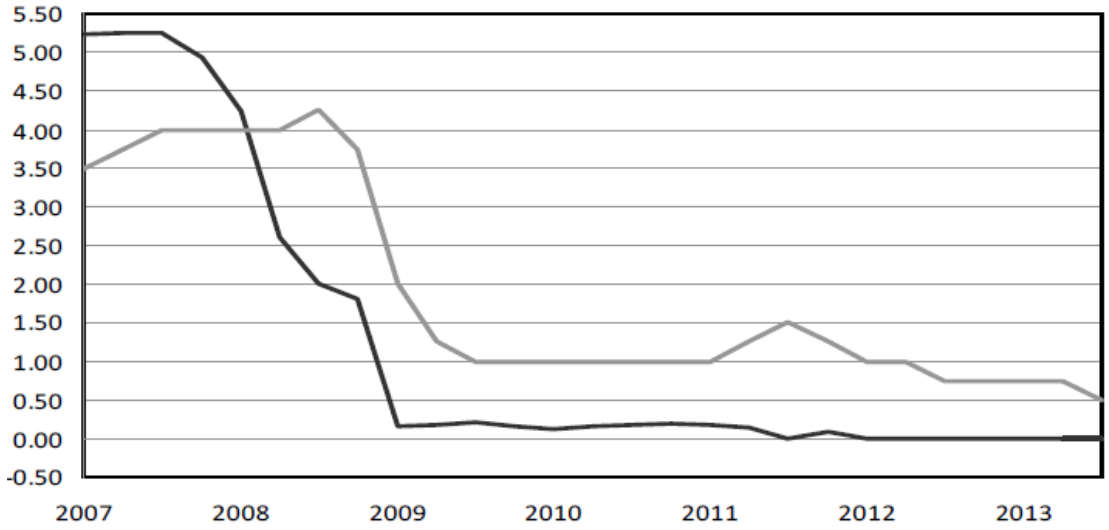
The strategy of low inflation comes back to 1920 – 1923 where Germany faced one of the biggest Hyperinflation crisis in history. On 20 November 1923, Germany ended inflation by pegging the mark's foreign exchange value at its prevailing value of 4,200 billion marks to the dollar. However, many economists, between the Joseph Stiglitz, believe that a financial crisis, which cause an accumulated loss of GDP of trillions of dollars in 2009 crisis, is way more dreadful than an uncontrollable inflation crisis. The ECB target only for stable inflation and the ECB's non-commitment to the unemployment rate leads to a bigger unemployment and a bigger gap between the actual and the potential GDP. In 2008 economic crisis FED took advantage the ECB's one-dimensional focus only to inflation lead the Euro to a currency appreciation and made a competitive devaluation over Eurozone products. Former Federal Reserve Board Chairman Alan Greenspan (1987-2006) has said that he believes "We will be at price stability when households and businesses need not factor expectations of changes in the average price level into their decisions."

From the following graph we see the timeline of Euro/Dollar exchange rate from 2006 to 2015. We can notice the euro appreciation in the USA banking crisis during 2007 – 2008 with the peak of **1,5936** euro to 1 dollar at 11/7/2008. In average the Euro/Dollar exchange rate was

1,09 from 4/1/1999 to 30/3/2007, **1,42** from 1/4/2007 (New Century Financial Corporation bankruptcy) to 6/3/2009 (Dow Jones lowest hit 6.443,27) and **1,23** from 7/3/2009 to 25/2/2020.



The same thing we can notice through the interest rates of both central banks. Even though both central banks cut their interest rates FED did that quicker and with bigger intense that ECB. Until 2013 the interest rates were lower than ECB. The monetary policy of ECB's target of 2% inflation rates kept the interest rates higher than FED which policy aims at high economic growth, low inflation rates and low interest rates.



The reliability factor

Even though we saw that the use of a median term of inflations dealt a big blow on Eurozone economy ECB's target was the reliability of the inflation. Mervyn King (1999) argues that central banks with inflation objectives will be held accountable in such a way as to make the time horizon irrelevant. As King notes, if a central bank has a 2% target, then after 10 years the question will be whether inflation averaged less than 2% over the entire period. The overriding issue is that longer time horizons give somewhat more flexibility in responding to short run real factors. Nevertheless, the strict structure and the late response of ECB made Eurozone's economy to struggle even more.

Philips Curve data

Philips Curve is a controversial theory testing the correlation between inflation and unemployment stating that those two variables have an inverse and stable relationship. This theory is high criticized through the evolution of inflation and unemployment which both variables have high values during a long period of time (especially in the 1970s). Many economists states through the rational expectation theory that the Philips curve has only short-term effect due to the inflexibility of prices but in a long term period the inflation only increase only the prices of goods and has no effect in the unemployment rates.

Nevertheless, some empirical researches show us some different results on Philips Curve with the latest available data. The econometric tables (in the following page) measuring the quarterly behavior of core inflation, as measured by the median weighted median core inflation and the inflation rate excluding food and energy prices (XFE inflation) a very common measure of the core inflation. The core inflation is determined by expected inflation and the level of slack in the economy. In first two tables we measure the slack with the gap between output and potential output.

We assume that quarterly core inflation is determined by:

$$\pi_t = \pi_t^e + a\overline{(y - y^*)}_{t-1} + e_t \qquad (1)$$

where is the annualized core inflation rate, π^e is expected inflation, and $\overline{(y - y^*)}_{t-1}$ is the log difference between the four-quarter averages of actual and potential output from t − 4 through t − 1. In assuming that quarterly inflation depends on slack over four quarters.

The results of the regressions of Phillips curve show us very good results. Specifically, the $\overline{R^2}$ is equal to 0,64 without a constant and when the constant is added it is small and statistically insignificant and the coefficient on the output term is 0,23.

Next, we add the $\left(\overline{\pi^h - \pi}\right)_t$ in equation (1) (where π^h is headline inflation and π is core inflation). The results are even better than before with $\overline{R^2}$ is now equal to 0,76 and the added term is highly significant too but only without the constant term.

$$\pi_t = \pi_t^e + \alpha\overline{(y - y^*)}_{t-1} + \epsilon_t$$

	Median Inflation		XFE Inflation	
Constant		-0.052		-0.320
		(0.060)		(0.086)
α	0.228	0.221	0.238	0.194
	(0.024)	(0.025)	(0.037)	(0.031)
$\overline{R}^2$	0.643	0.646	0.207	0.459
S.E.of Reg.	0.345	0.343	0.540	0.447

$$\pi_t = \pi_t^e + \alpha\overline{(y - y^*)}_{t-1} + \beta\overline{(\pi^h - \pi)}_t + \epsilon_t$$

	Median Inflation		XFE Inflation	
Constant		-0.066		-0.356
		(0.047)		(0.100)
α	0.209	0.200	0.243	0.183
	(0.017)	(0.019)	(0.038)	(0.037)
β	0.341	0.349	-0.095	0.121
	(0.065)	(0.062)	(0.157)	(0.123)
$\overline{R}^2$	0.755	0.764	0.209	0.467
S.E.of Reg.	0.286	0.280	0.540	0.443

We also check the same function (1) changing now the a$\overline{(y - y^*)}_{t-1}$ term for a$\overline{(u - u^*)}_{t-1}$ term where is the log difference between the averages of unemployment and its natural rate from t – 1 through t – 4. This time the results are good but not so good than before with the coefficient of determination $\overline{R^2}$ falls from 0,64 to 0,53. The coefficients on the unemployment gap are negative and highly significant, confirming the tradeoff between slack and inflation.

In the modified function we add again the $\left(\overline{\pi^h - \pi}\right)_t$ term. $\overline{R^2}$ falls again from 0,76 to 0,67.

$$\pi_t = \pi_t^e + \alpha\overline{(u - u^*)}_{t-1} + \beta\overline{(\pi^h - \pi)}_t + \epsilon_t$$

	Without Headline-Inflation Shocks	With Headline-Inflation Shocks
α	-0.312	-0.286
	(0.037)	(0.027)
β		0.378
		(0.083)
$\overline{R}^2$	0.527	0.666
S.E.of Reg.	0.397	0.333

As a conclusion of this econometric statistics we clearly saw that Phillips curve is explain the fluctuations in weighted median inflation in Eurozone only on core inflation but not in XFE inflation.

Conclusion

The policy of ECB was copied by Deutsche bank which main target is low inflation rates. That was an optimal strategy at the past decades due to the big economic growth of the world overall but during the big recession of 2008 that policy made the European zone to suffer even more. The economic crisis and the catastrophic result for EU-28 should teach us that the economic tools have to focus not only to inflation but to economic growth too. Finally, instead of a fixed optimal inflation which can't be optimal in long-term ECB's inflation target should be an optimal variable low inflation rate which can change through years.

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