

# Analysis of inflation and money in developed countries

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## **Abstract**

This paper is to investigate whether inflation and money growth correlate positively, as quantity theory of money predicts. I used the data of four developed countries: US, Japan, Britain and France. I show that inflation and money growth substantially correlate with each other from 1970 to 1994, however this relationship diminished or turned into negative after 1995.

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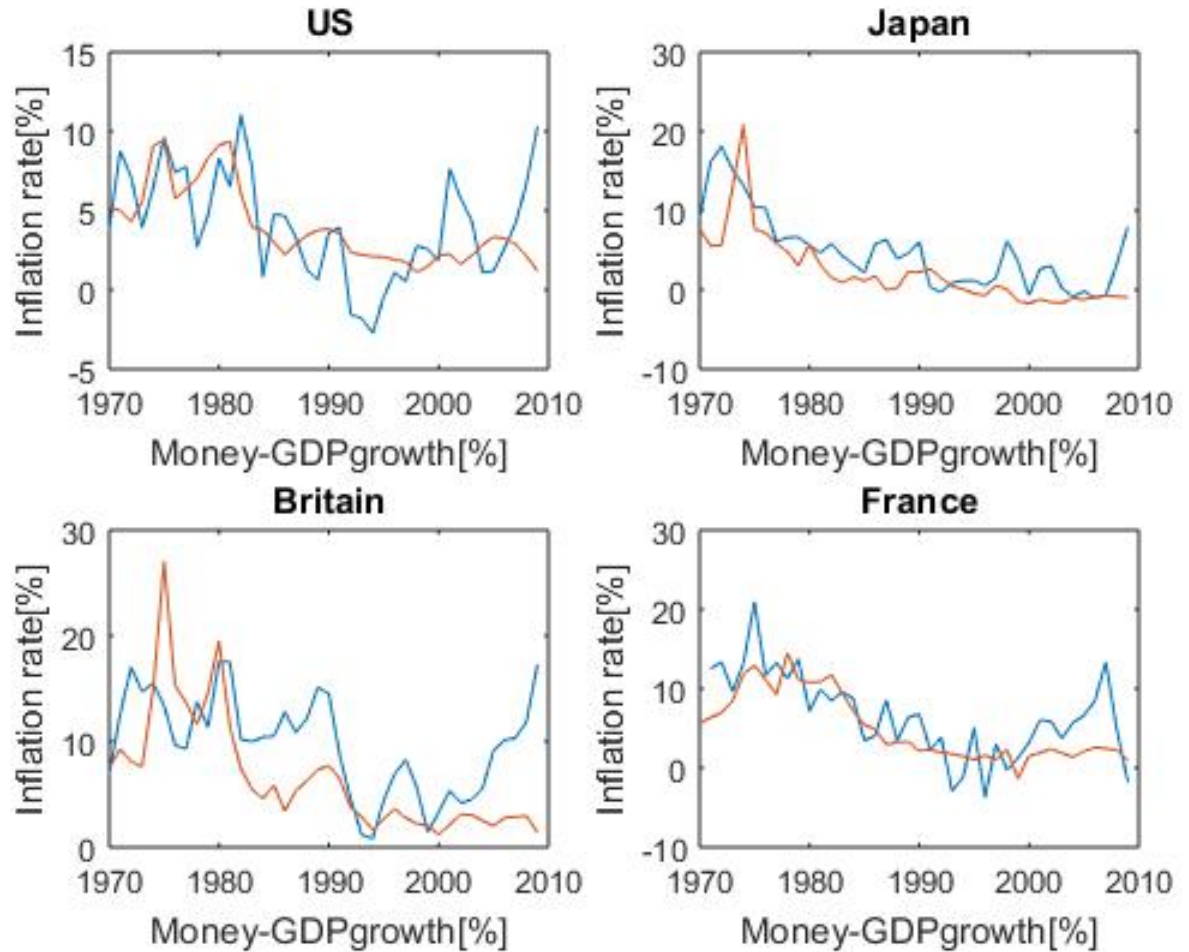
This paper is a short analysis of the relation between inflation and money. Quantity theory of money is represented by the following equation:

$$Mv = PY$$

,where  $M$  stands for the money,  $v$  the velocity of money circulation,  $P$  the price level and  $Y$  the production. Assume  $v$  is constant. If  $Y$  is not affected by  $M$ , which means that real activity is not affected by monetary policy,  $P$  should always moves together with  $M$ . If this is the case, the data should show significantly strong correlation between the inflation rate and the growth of money.

Figure 1 shows the historical data of four developed countries: US, Japan, Britain and France. The horizontal axis represents growth of money net the growth of GDP.

Figure 1: Inflation and money growth in each country



Overall, in each country, these two parameters exhibit positive correlation. However, in a closer look, the two parameters do not comove from around 2000. Indeed, calculating the correlation before and after 1995 shows the change in the trend clear. Table 1 lists the correlation coefficient of inflation rate and money in each country. It is now obvious that inflation rate does not always move together with money supply. It means that money should affect real activities at least in recent years (McCandless Jr and Weber (1995)). This fact is actually what motivates economists to study the real effect of monetary policy.

Table 1: Correlation coefficient of inflation rate and money growth before and after 1995

	1970-1994	1995-2009
US	0.623	-0.309
Japan	0.673	0.207
Britain	0.489	-0.0794
France	0.757	0.420

## References

**Jr, George T McCandless and Warren E Weber**, “Some monetary facts,” *Federal Reserve Bank of Minneapolis. Quarterly Review-Federal Reserve Bank of Minneapolis*, 1995, 19 (3), 2.