

# International Money and Banking: 6. Problems with Monetarism

Karl Whelan

School of Economics, UCD

Spring 2020

# The Basic Elements of Monetarism

- Last time, we discussed the monetarist school of thought, associated with Milton Friedman, which argued that central banks should control the economy via maintaining a steady growth rate of the money supply.
- Monetarism's policy recommendations rested on three different ideas
  - ① **Predictable Money Multiplier:** It would be wrong to argue that monetarists believed in the simplistic version of the money multiplier presented in the previous lecture. But they did believe that changes in the money multiplier were predictable enough that central banks could adjust the monetary base to control the broader money supply.
  - ② **Predictable Velocity:** Again, monetarists didn't necessarily believe the pure quantity theory, in which velocity was constant, but they did believe velocity was predictable enough to allow central banks to link the growth rate of nominal GDP to the growth rate of the money supply.
  - ③ **Money and Inflation:** For monetarists, inflation “was always and everywhere a monetary phenomenon” and central banks should expect a tight medium-term relationship between money growth and inflation.
- Here, we will show that none of these ideas ended up working well in practice.

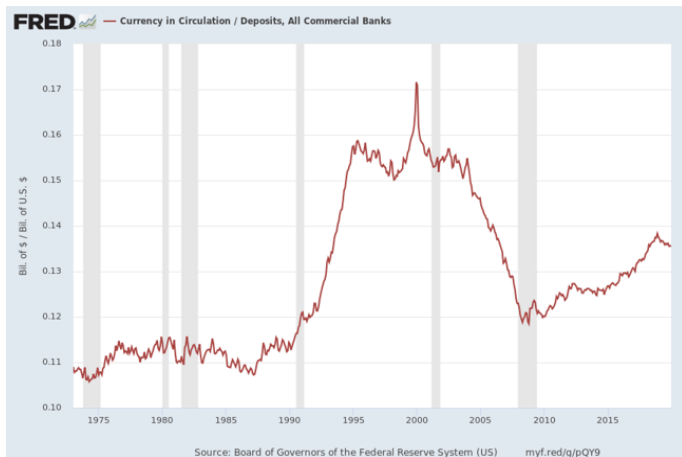
# Part I

## The Uncertain Money Multiplier

# The Money Multiplier Model's Banks Are Not Realistic

- The simple models of the money multiplier described in the previous lecture had a strange and restrictive view of the banking sector.
- For starters, the banks in the money multiplier examples never have any equity capital (which would be illegal in the real world.)
- But they also view the process of credit creation as mechanical. In the model, a bank that has excess reserves will always want to loan these to someone. But what if there is limited demand for credit from customers? What if the bank decides it wants to keep the money on reserve at the central bank.
- Many central banks have moved to paying interest on reserves, so the idea these are a bad asset that is worse than loans isn't necessarily always correct. They may earn a low interest rate but they have no credit risk and are useful for coping with potential liquidity problems.
- There may also be variations over time in the tendency of the private sector to use currency rather than deposits, which as we have seen, also affects the money multiplier.
- Taken together, these complications mean the link between the monetary base and the broader money supply is weaker than assumed by monetarists.

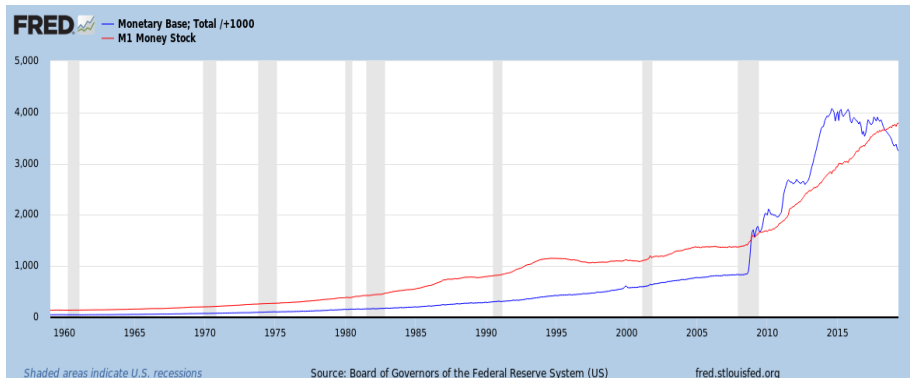
# The Ratio of Currency to Deposits in the US



# The Money Multiplier After QE

- QE programmes over the past decade have seen very large increases in the monetary base.
- These were not followed by proportional increases in M1 or other monetary aggregates, so money multipliers fell sharply when QE began, only partially recovering in later years: See the graph for the M1 multiplier in the US.
- In theory this runs counter to the money multiplier model, though in reality the step-by-step process of loan creation and redepositing in the banking sector would take time and so you might expect to see a temporary decline in the money multiplier.
- But there also appears to have been a significant increase in the desire by banks to hold central bank reserves. During the crisis years, this may have reflected a preference for low risk investments over investments with credit risk. Now it appears to reflect tougher liquidity regulations.
- The key point here: The money multiplier is not a fixed constant and how it behaves can depend on the circumstances of the economy. We cannot just assume a given increase in the monetary base will simply “multiply up” to give a broader increase in M1 or M2.

# The Monetary Base and M1 in the US

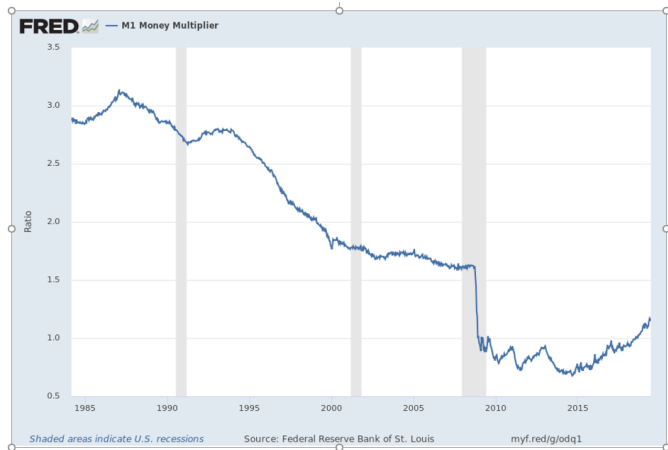


# Reserve Balances of US Banks



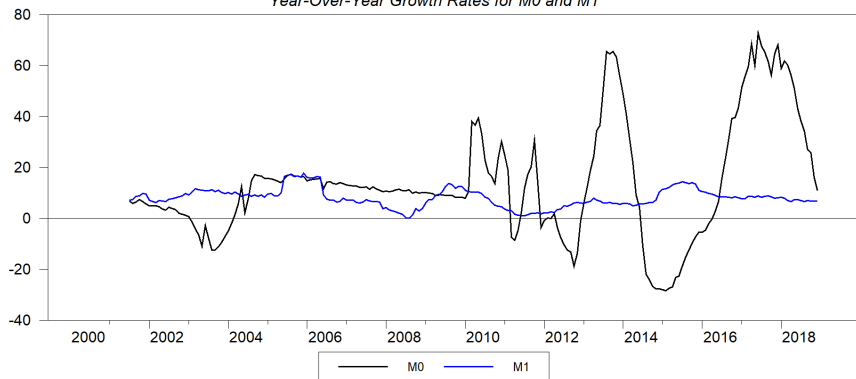


# The M1 Money Multiplier in the US

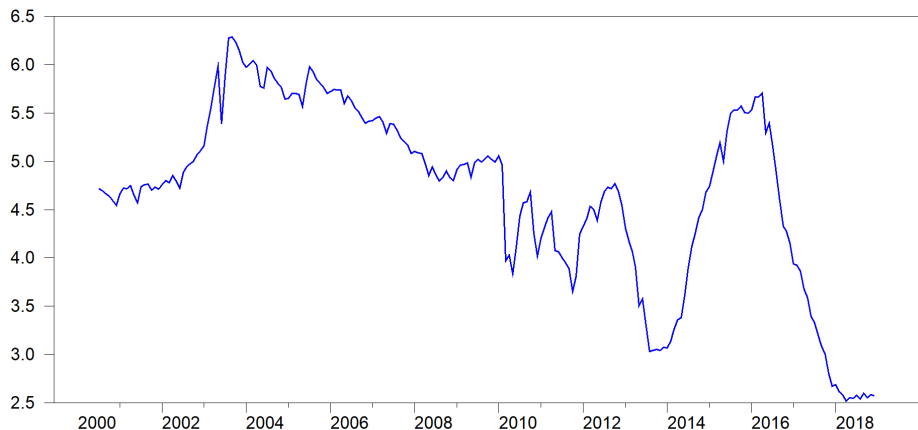


# Growth Rates of M0 and M1 in the Euro Area

Year-Over-Year Growth Rates for M0 and M1



# The M1 Money Multiplier in the Euro Area



# The “Reserve Hoarding” Fallacy

- Commentators sometimes argued that the expansion in the supply of base money by the Fed during its QE programme didn't get credit flowing because “banks were hoarding money by keeping it as central bank reserves.” (i.e. banks are keeping their assets in the form of reserves rather than loans.)
- This idea is flawed.
- Remember the money multiplier example: The amount of reserves never changed as the M1 money stock increased.
- Banks can move the reserves onto other banks by making loans (or buying bonds) but they cannot change the total supply.
- Once a central bank has created money by crediting a reserve account, the monetary base stays the same until the central bank chooses to change it again.
- The falling money multipliers were evidence of weak credit growth but the large stock of reserves was not.
- See the paper by New York Fed economists, Todd Keister and James McAndrews: [Why Are Banks Holding So Many Excess Reserves?](#)

## Broader Measures of the Money Supply

- In addition to M1, there are also broader measures of the money supply, which include other assets that are relatively liquid, though not as liquid as cash or deposits.
- M2 is defined as M1 plus short-term savings and money market mutual funds, i.e. mutual funds that take investors money and invest them in short-term assets such as short-term government bonds or commercial paper.
- M3 is defined as M2 plus longer-term savings accounts and other somewhat liquid assets.
- We have seen how central banks don't have full control over M1.
- They have even less control over these broader measures of money.
- For instance, if large numbers of people sell stocks and put the money into long-term savings accounts, thus boosting M3, there isn't much the central bank can do about it.
- Since 2006, the Federal Reserve hasn't even bothered measuring M3. The ECB, on the other hand, still uses M3 as an indicator in its monetary policy analysis.

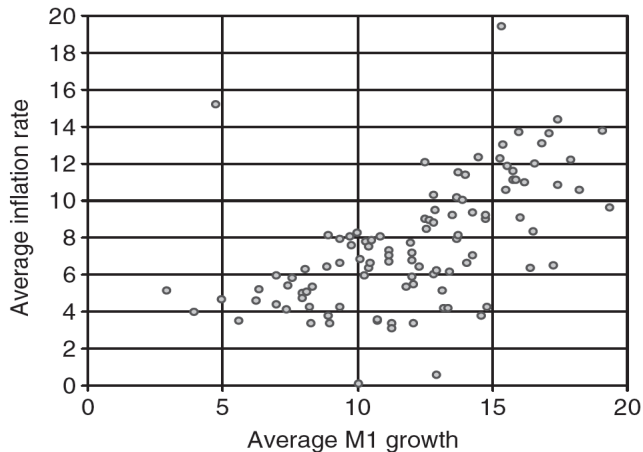
## Part II

# Uncertain Velocity of Money

## Excluding High Inflation Countries

- It isn't too surprising that countries that turn on the printing presses to pay for government spending end up with high rates of inflation.
- But is money growth the key to understanding inflation in the more normal environment of countries with proper tax-raising powers and that exhibit moderate rates of inflation?
- The chart on the next page shows De Grauwe and Polan's data when restricted to countries that had average money growth and inflation rates of below 20% per year.
- This relationship does not work so well. The overall fit is not too strong and there are plenty of counter-examples to the idea that money growth drives inflation (countries with high inflation but low rates of money growth and countries with high rates of money growth but low inflation.)
- This weak relationship calls into question whether a policy based on targeting specific growth rates of the money supply is always the right way to control inflation.

# Money Growth and Inflation Below 20%





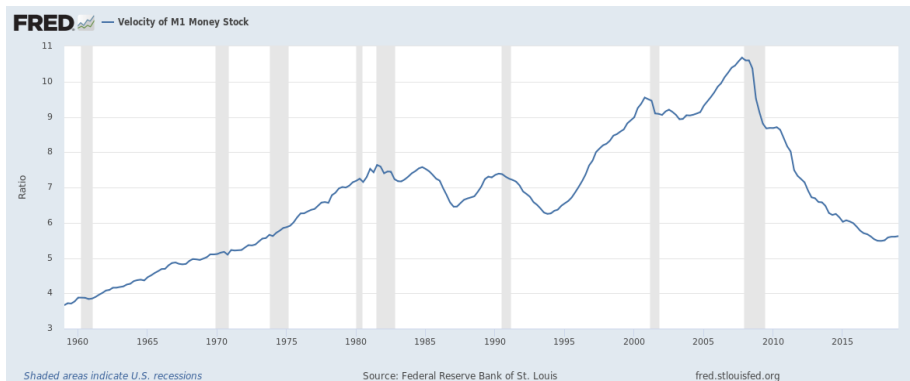
## De Grauwe and Polan's Conclusions

- “In the class of low-inflation countries, inflation and output growth seem to be exogenously driven phenomena, mostly unrelated to the growth rate of the money stock. As a result, changes in velocity necessarily lead to opposite changes in the stock of money (given the definition  $p + y = m + v$ ). Put differently, most of the inter-country differences in money growth reflect different experiences in velocity. As a result, the observed cross-country differences in money growth do not reflect systematic differences in monetary policies, but the “noise” coming from velocity differences. It thus follows that the observed differences in money growth have a poor explanatory power with respect to differences in inflation across countries in the class of low inflation countries.”
- “For high-inflation countries, on the other hand, an increase in the growth of the money stock leads to an increase in both inflation and velocity. The latter reinforces the inflationary dynamics. This is also the reason why, in the class of high-inflation countries, we find a coefficient of money growth typically exceeding 1.”

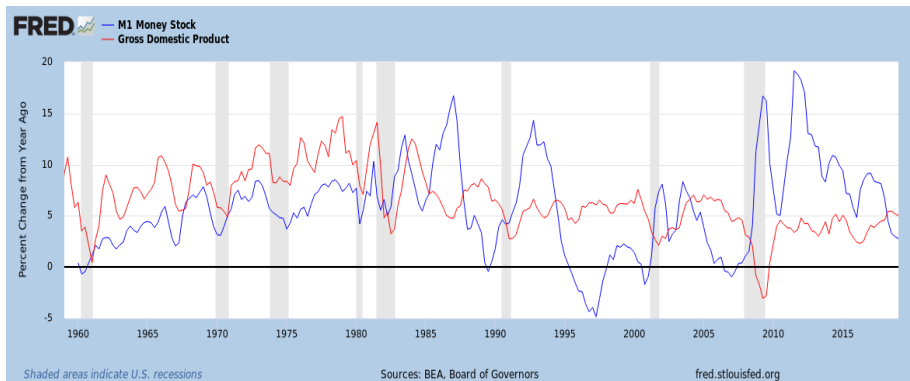
## Example: Money and Nominal GDP in the US

- We described the quantity theory previously as based upon the assumption that velocity was constant. Now velocity is not constant but, recalling  $MV = PY$ , monetarists pointed out that you could control nominal GDP as long as velocity was *predictable*. If I know what  $V$  is going to be, then I can set  $PY$  by picking the right value for  $M$ .
- In the 1970s, M1 velocity was increasing but in a predictable fashion.
- In the early 1980s, the Federal Reserve adopted the monetarist policy of targeting growth in the money supply. However, M1 velocity trends immediately changed and this variable has been tricky to predict ever since, particularly around recessions. Velocity for the broader M2 measure has also been unpredictable.
- The relationship between money growth and nominal GDP growth, reasonably strong in the 1970s, has been weak since.

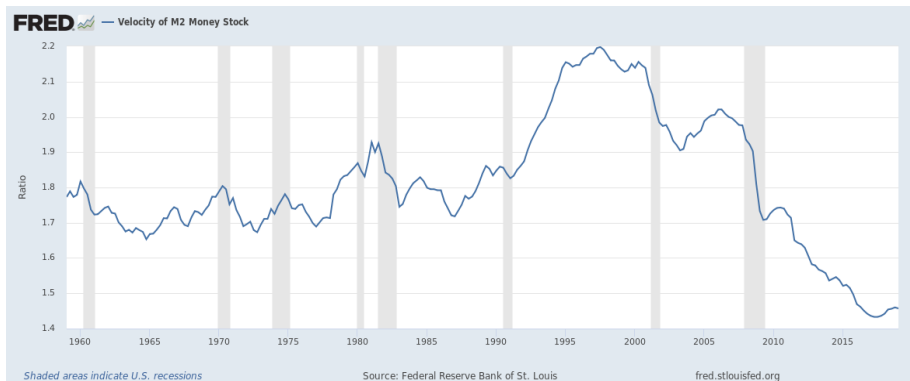
# Velocity of M1 in the US



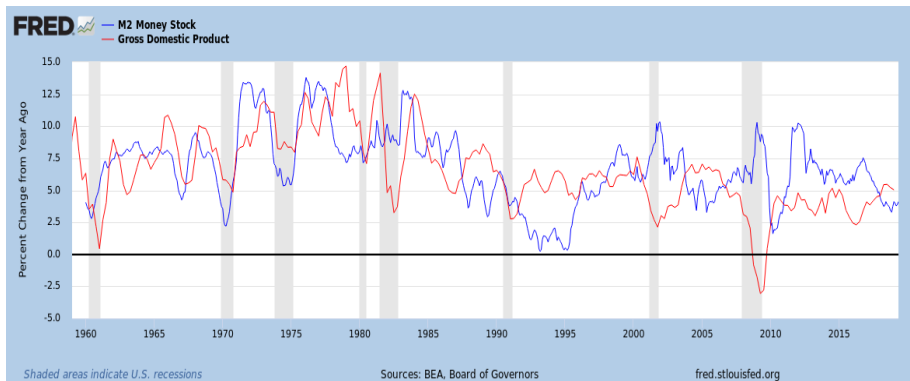
# Growth Rates of M1 and Nominal GDP in the US



# Velocity of M2 in the US



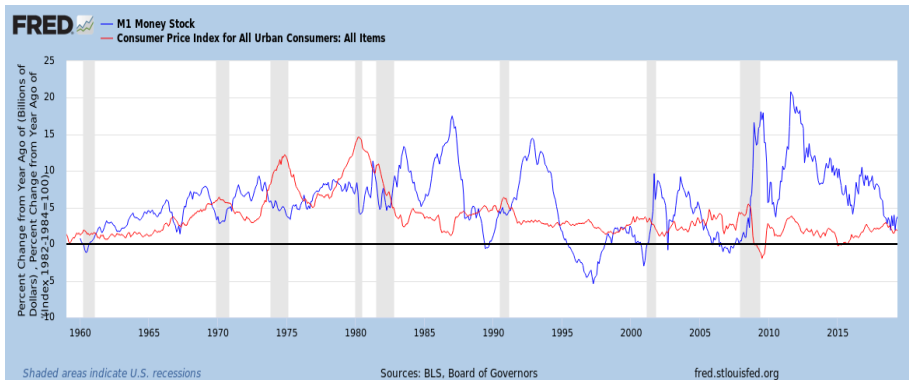
# Growth Rates of M2 and Nominal GDP in the US



## Example: Money and Inflation in the US

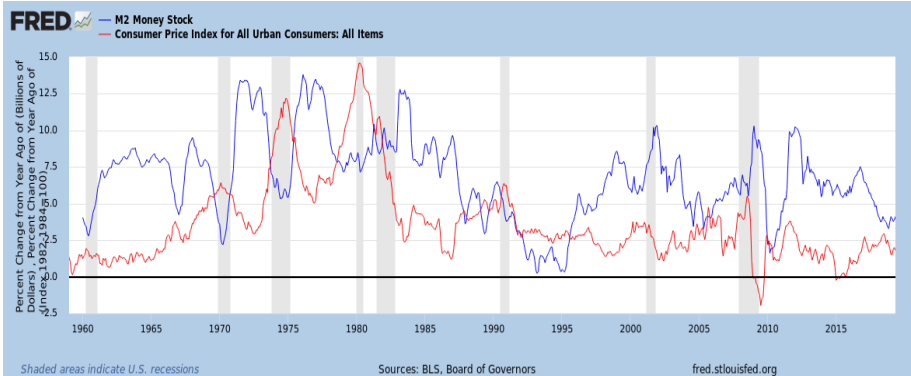
- Monetarists believe that central banks can control nominal GDP via setting the correct rate of money growth.
- In relation to how nominal GDP movements break down into real GDP growth and inflation, Milton Friedman was sceptical of the ability of governments to “fine-tune” the economy by controlling real GDP growth.
- He recommended steady growth in the money supply at a constant rate, believing that real GDP would tend to return to its natural level, so that money growth would determine the average rate of inflation.
- Friedman believed that variations in the rate of money growth also tended to destabilise the real economy, so that a constant money growth rule would also deliver a more stable path for real GDP.
- We now know that the link between money and nominal GDP growth is pretty weak these days.
- As for the relationship between money growth and inflation, the charts on the next few pages show that it is hard to find a good relationship between inflation and any US measure of money growth.

# US Inflation and M1 Growth

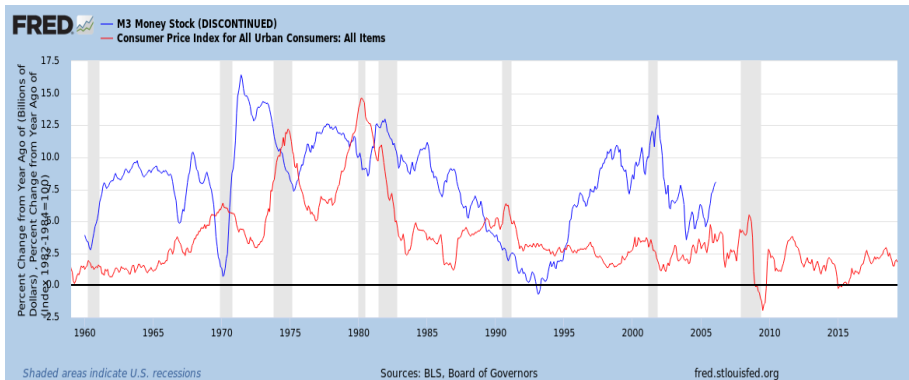




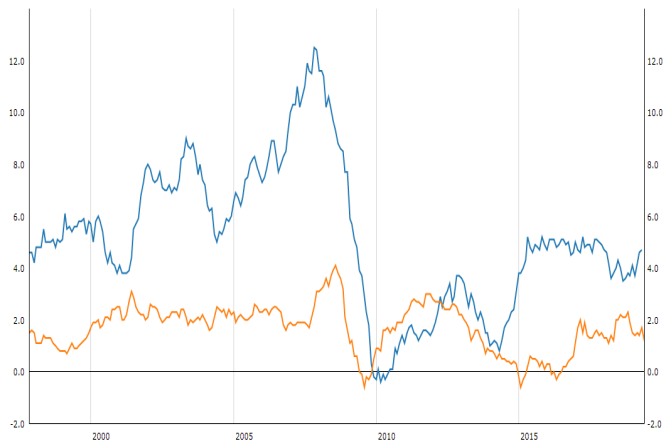
# US Inflation and M2 Growth



# US Inflation and M3 Growth



# Euro Area Inflation (Orange Line) and M3 Growth (Blue Line)



# Summary on Monetary Targeting

- To summarise, a policy of manipulating the monetary base with the aim of targeting the growth rate of the money supply is now generally considered a poor strategy for central banks for a number of reasons:
  - 1 **Uncertain Money Multiplier:** While central banks can control the monetary base, the relationship between this base and the money supply is uncertain and depends upon unpredictable behavioural elements in the banking system.
  - 2 **Uncertain Monetary Velocity:** Even if the central bank could control the money supply, the link between this and nominal GDP posited in the Quantity Theory requires that velocity be predictable. In reality, velocity has often been unpredictable.
  - 3 **Weak Link Between Money and Inflation:** Stable velocity and long-run monetary neutrality are supposed to lead to a tight relationship over time between inflation and the growth rate of money. In most modern economies, this relationship just isn't there.
- In addition, as we will discuss in the coming weeks, evidence from the early 1980s showed that a policy of monetary targeting leads to sharp and volatile movements in short-term interest rates.

## Recap: Key Points from Part 6

Things you need to understand from these notes:

- 1 Why the money multiplier's assumptions about the banking sector are not realistic.
- 2 Why the money multiplier is not stable.
- 3 Recent developments in M0 and M1 in the US and the Euro area.
- 4 The “reserve hoarding” fallacy.
- 5 The evidence on money and inflation across countries at lower rates of inflation.
- 6 The behaviour of velocity in the US.
- 7 Evidence on money growth and inflation in the US and the Euro area.
- 8 Reasons why central banks do not apply monetary targeting.