INSTITUTE OF INTERNATIONAL MONETARY RESEARCH

Analysis and insight into trends in money and banking, and their impact on the world's leading economies

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Boom or bust?: Money in macro forecasts

A talk at Sheffield University on

20th February, 2020

The underlying theory in the work of the Institute of International Monetary Research at the University of Buckingham

The ultimate determinant of the growth of nominal GDP in the long run is the growth of the quantity of money, broadly-defined.

The underlying theory in the work of the Institute of International Monetary Research at the University of Buckingham

- **Sharp fluctuations in the growth of real broad money matter to the cyclical course of the economy (i.e., the short run), esp. through their effects on asset prices and balance sheets.**
- Money isn't everything – and cross-checks are needed to reliable advance pointers to demand from leading indicator indices.

Money and the business cycle

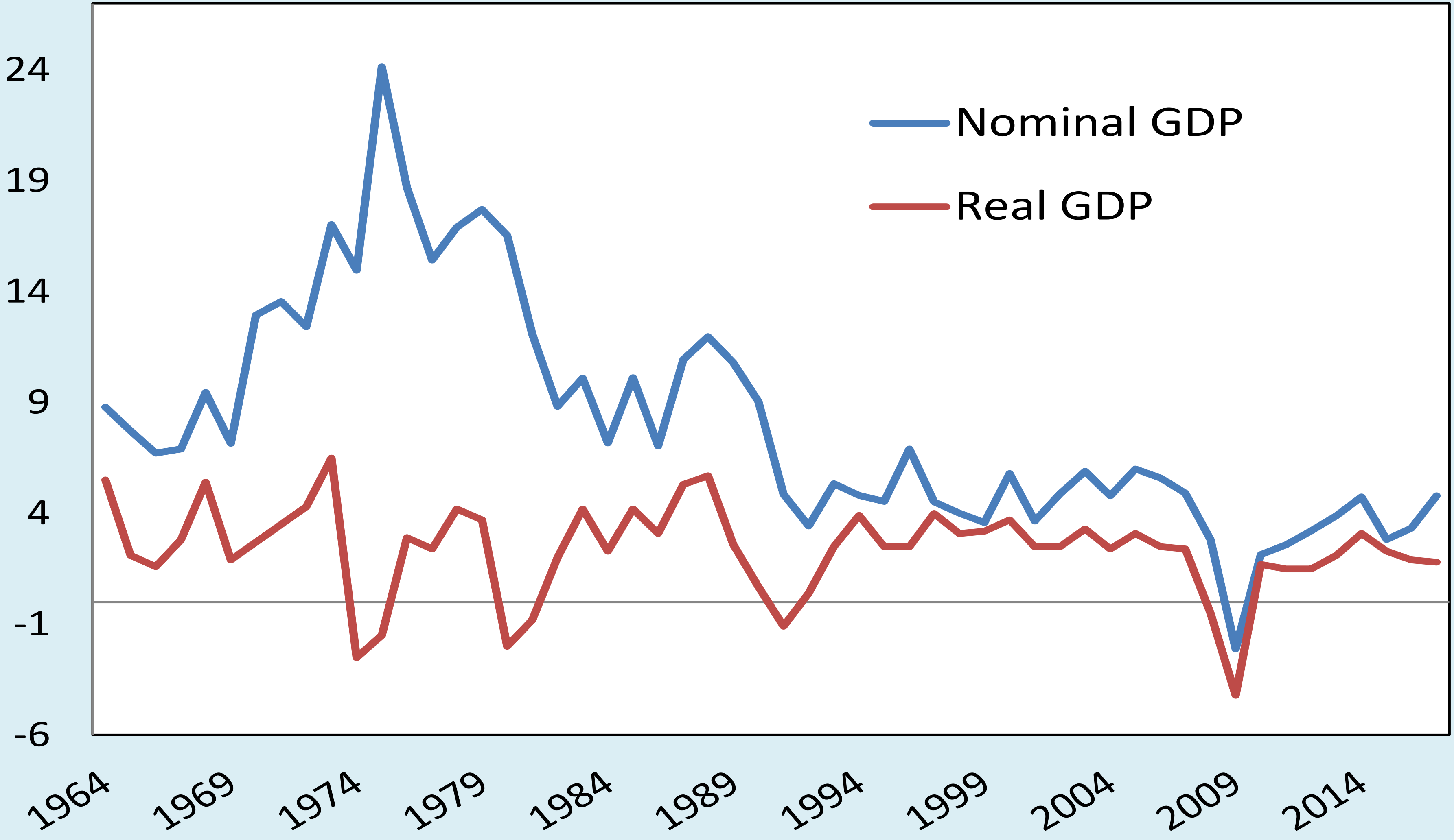
- In the long run the growth rates of real broad money and real GDP are similar, if with some tendency in many countries for money to grow a little faster with greater financial sophistication. Let us take the trend growth rate of real output to be 2% a year, as in the UK for much of the last 50 or so years.

Money and the business cycle

- If real money growth is much above 2% a year, expect strong asset price inflation and above-trend growth in demand and output.
- If real money growth is much beneath 2% a year, expect weak asset price inflation (or even falling asset prices) and beneath-trend growth in demand and output (or even a recession).

Growth of GDP in the UK, 1964 - 2017

- % annual increases



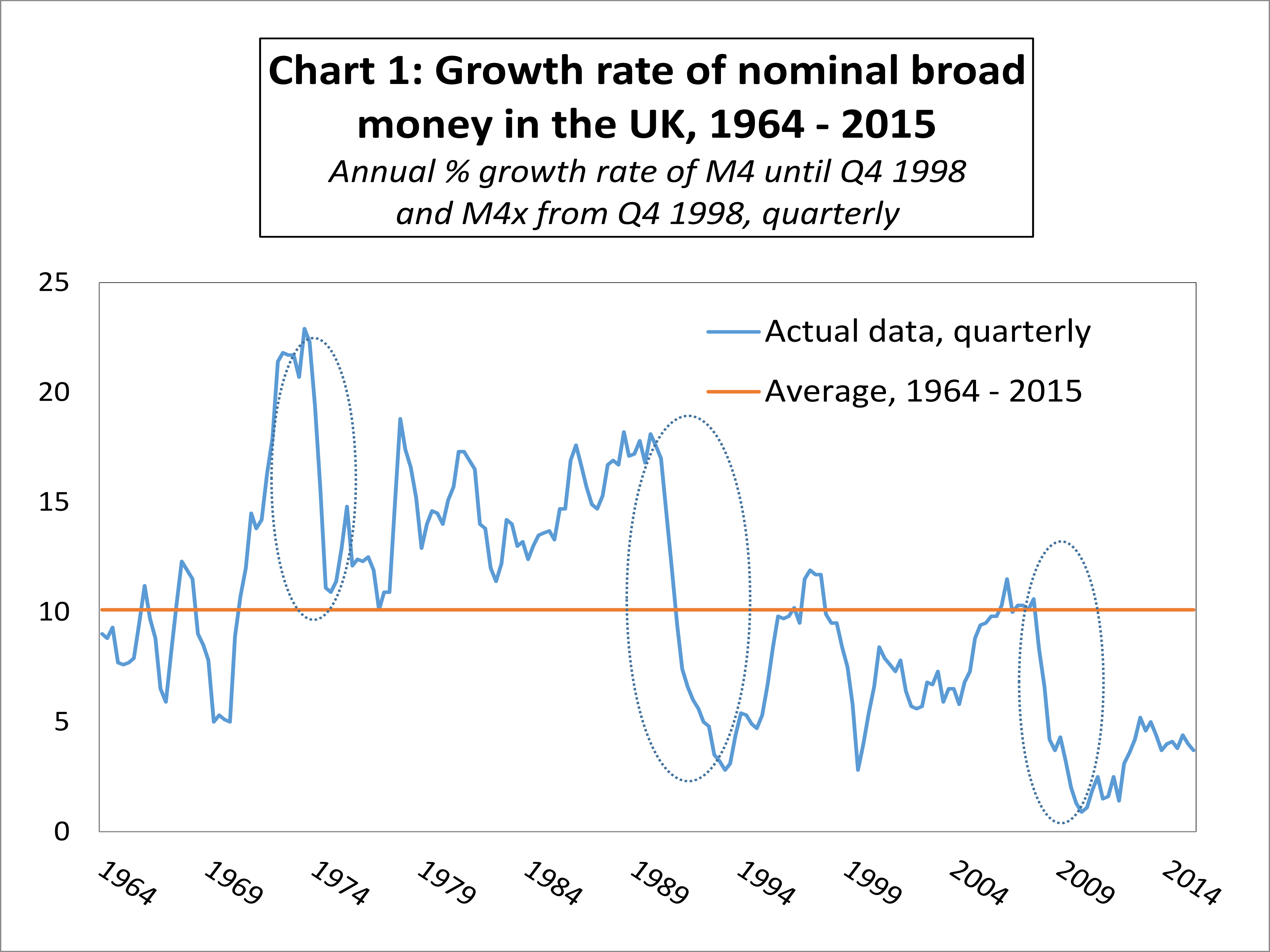
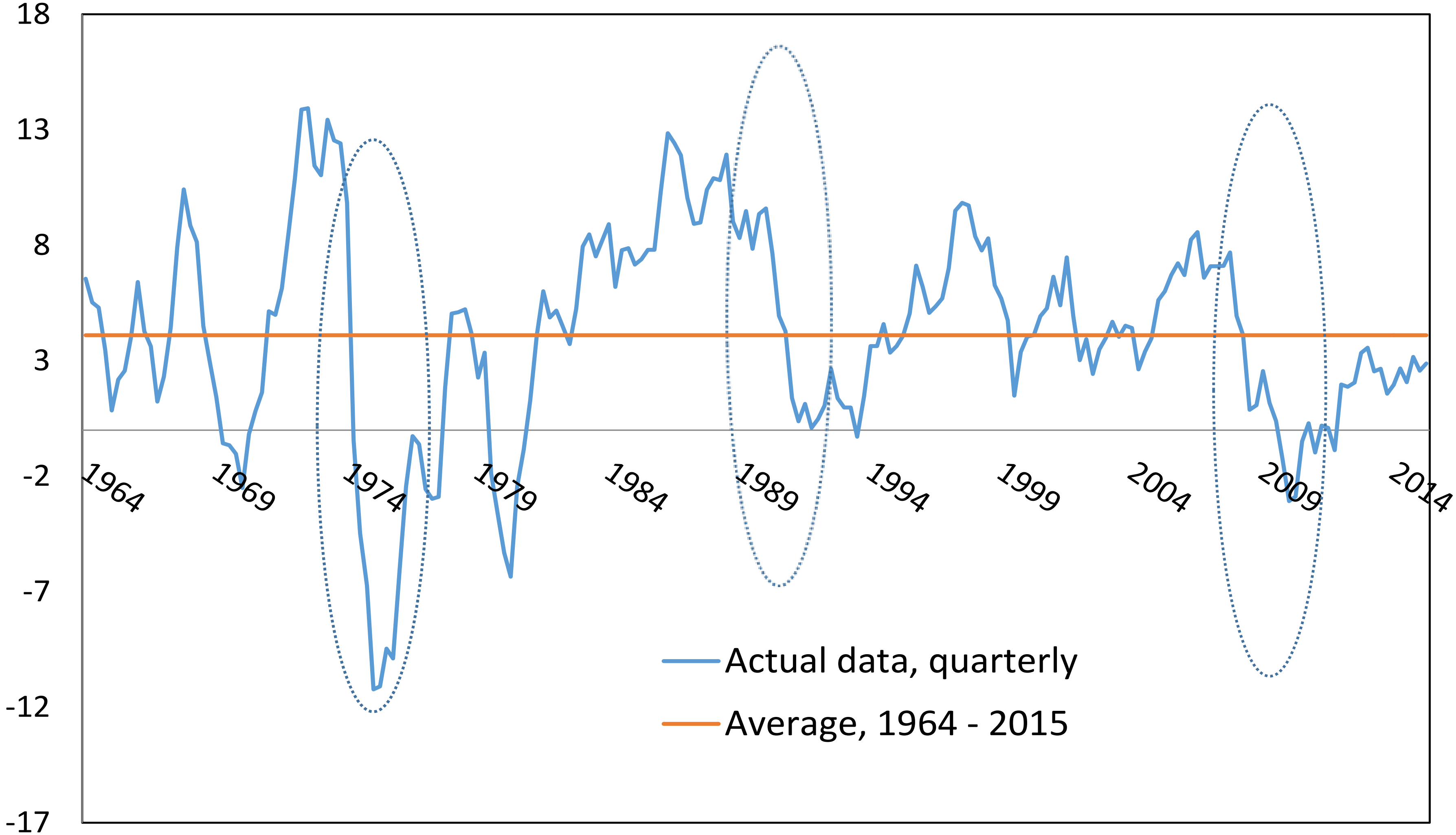


Chart 1: Growth rate of nominal broad money in the UK, 1964 - 2015
Annual % growth rate of M4 until Q4 1998 and M4x from Q4 1998, quarterly
Actual data, quarterly
Average, 1964 - 2015
25
20
15
10
5
0
1964
1969
1974
1979
1984
1989
1994
1999
2004
2009
2014

Chart 2: Growth rate of real broad money in the UK, 1964 - 2015

Annual % growth rate of nominal M4/M4x, adjusted for change in GDP deflator



The UK economy: central facts of monetary experience, 1964 - 2015

Average annual % increases:

Nominal broad money	10.1
Nominal GDP at mkt. prices	8.3
Real broad money	4.1
Real GDP	2.4

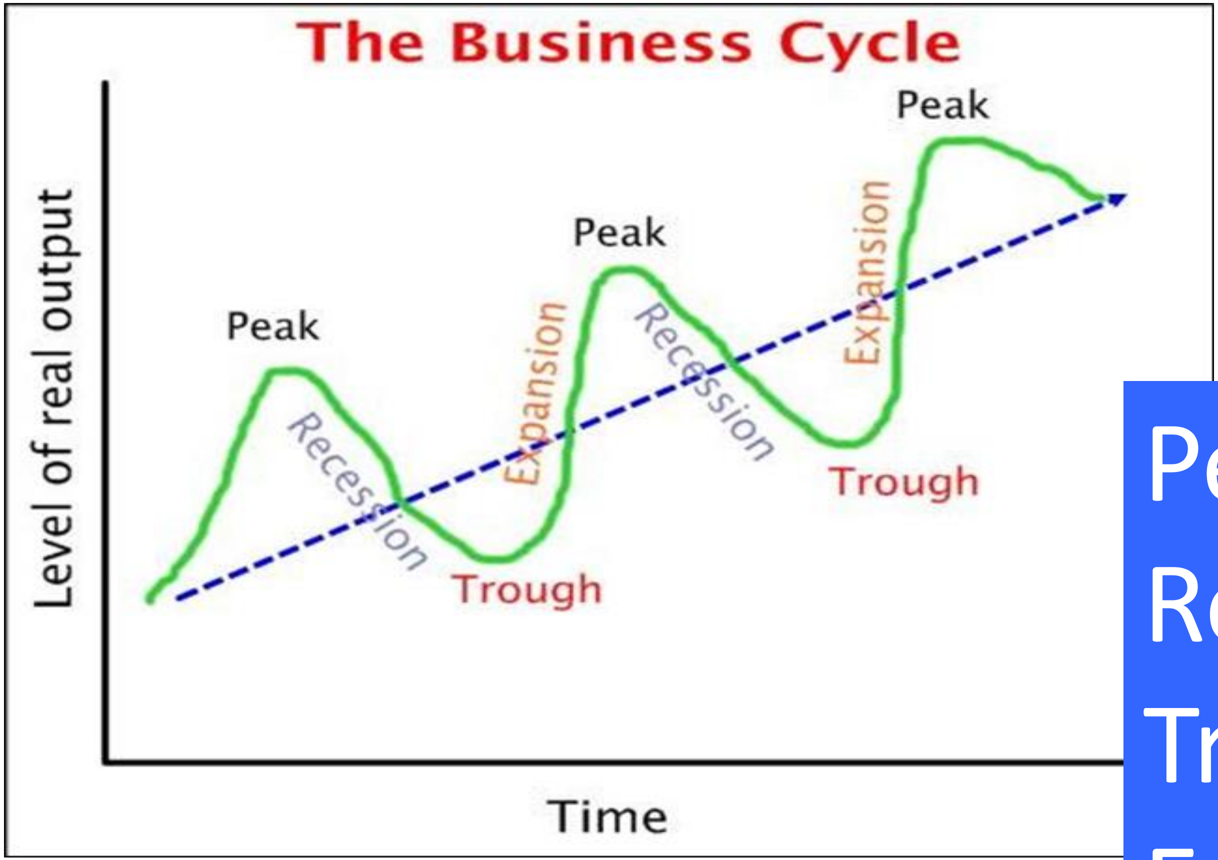
The generalisation of thought on inflation in the labour market to the whole economy

- Keynesian policy (fiscal policy to deliver full employment, neglect of monetary policy, prices & incomes controls to check inflation) led to the Great Inflation and poor macro outcomes of the 1970s.
- A new conceptualization of the output gap emerged, with a 1978 Perloff and Wachter paper, given at the 1978 Carnegie-Rochester conference, being the watershed.
- **At the natural rate of output, the change in general inflation (i.e., in consumer prices) is stable, just as at the natural rate of unemployment, the change in wage increases is stable.**

A generalization, to proceed quickly

- When output is above its trend level (the economy has a positive ‘output gap’), the change in inflation is positive, i.e., inflation is rising.
- When output is beneath its trend level (the economy has a negative ‘output gap’), the change in inflation is negative, i.e., inflation is falling.

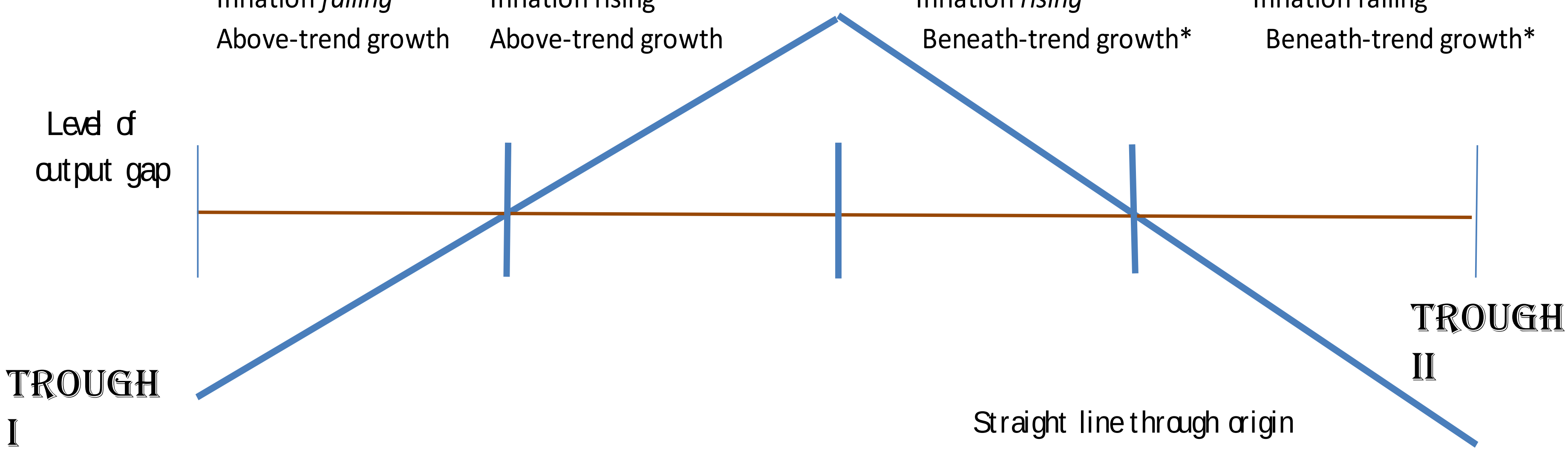
A four-phase business cycle



Peak
Recession
Trough
Expansion

The business cycle and inflation 1.

Recovery	Expansion		Downturn	Recuperation
Phase 1	Phase 2	PEAK	Phase 3	Phase 4
Output gap **negative**	Output gap **positive**		Output gap **positive**	Output gap **negative**
Inflation *falling*	Inflation rising		Inflation *rising*	Inflation falling
Above-trend growth	Above-trend growth		Beneath-trend growth*	Beneath-trend growth*



* Or even falling output (i.e., recession), although falling output is unusual in the recuperation phase.

Straight line through origin corresponds to zero output gap, space beneath is of negative output gap, etc.

The business cycle and inflation 2.

- Peak
- Recession
- Trough
- Expansion

Recovery

Expansion

Downturn

Recuperation

With the second terminology, we can keep the words ‘peak’ and ‘trough’ to describe the top and bottom points of output relative to trend.

The business cycle and inflation 3.

Remember that profit shares are highly pro-cyclical, and that equities are capitalisations of profits/dividends. Let us now try to introduce asset prices into the story.

Recovery

Expansion

Downturn

Recuperation

The business cycle and inflation 4.

- **Recovery.** Above-trend growth and **falling** inflation *of goods and services*. Good macro news. Above-trend growth of real broad money and, in association with that, financial sector growing faster than household money. **Asset prices – particularly equities – rising faster than prices of goods and services.**
- **Expansion.** Above-trend growth and rising inflation of goods and services. Money being transferred to companies to finance expansion.

The business cycle and inflation 5.

- **Downturn.** Beneath-trend growth/falling output and **rising** inflation *of goods and services*. Bad macro news. Beneath-trend growth of real broad money and, in association with that, financial sector growing more slowly than household money, or falling. **Asset prices – particularly equities – rising more slowly than prices of goods and services, *or falling.***
- **Recuperation.** Beneath-trend growth and falling inflation of goods and services. Balance sheets being straightened out, as agents try to recover ‘monetary equilibrium’.

The business cycle and asset inflation

Recovery

Phase 1

Output gap **negative**
General Inflation *falling*
Asset prices *rising* , esp. equity market

Expansion

Phase 2

Output gap **positive**
Inflation rising
Asset prices *rising* , esp. property

Downturn *

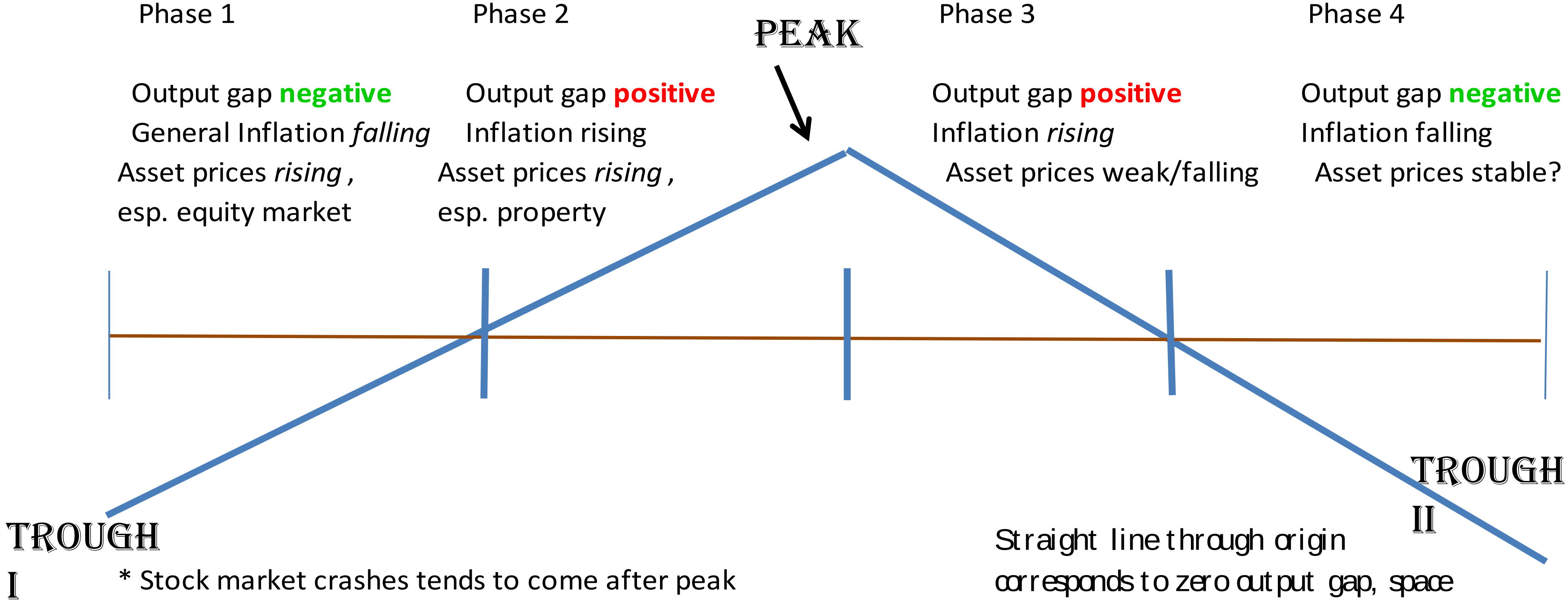
Phase 3

Output gap **positive**
Inflation *rising*
Asset prices weak/falling

Recuperation

Phase 4

Output gap **negative**
Inflation falling
Asset prices stable?



* Stock market crashes tends to come after peak in output growth, when interest rates are rising to counter undue inflation

Straight line through origin corresponds to zero output gap, space beneath is of negative output gap, etc.

The underlying theory

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- **Sharp fluctuations in the growth of real broad money matter to the cyclical course of the economy (i.e., the short run), esp. through their effects on asset prices and b**
- Money isn't everythi
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from leading indic

This approach implicitly assumes that the trend growth rate is stable, i.e., it ignores the supply side.

The underlying theory

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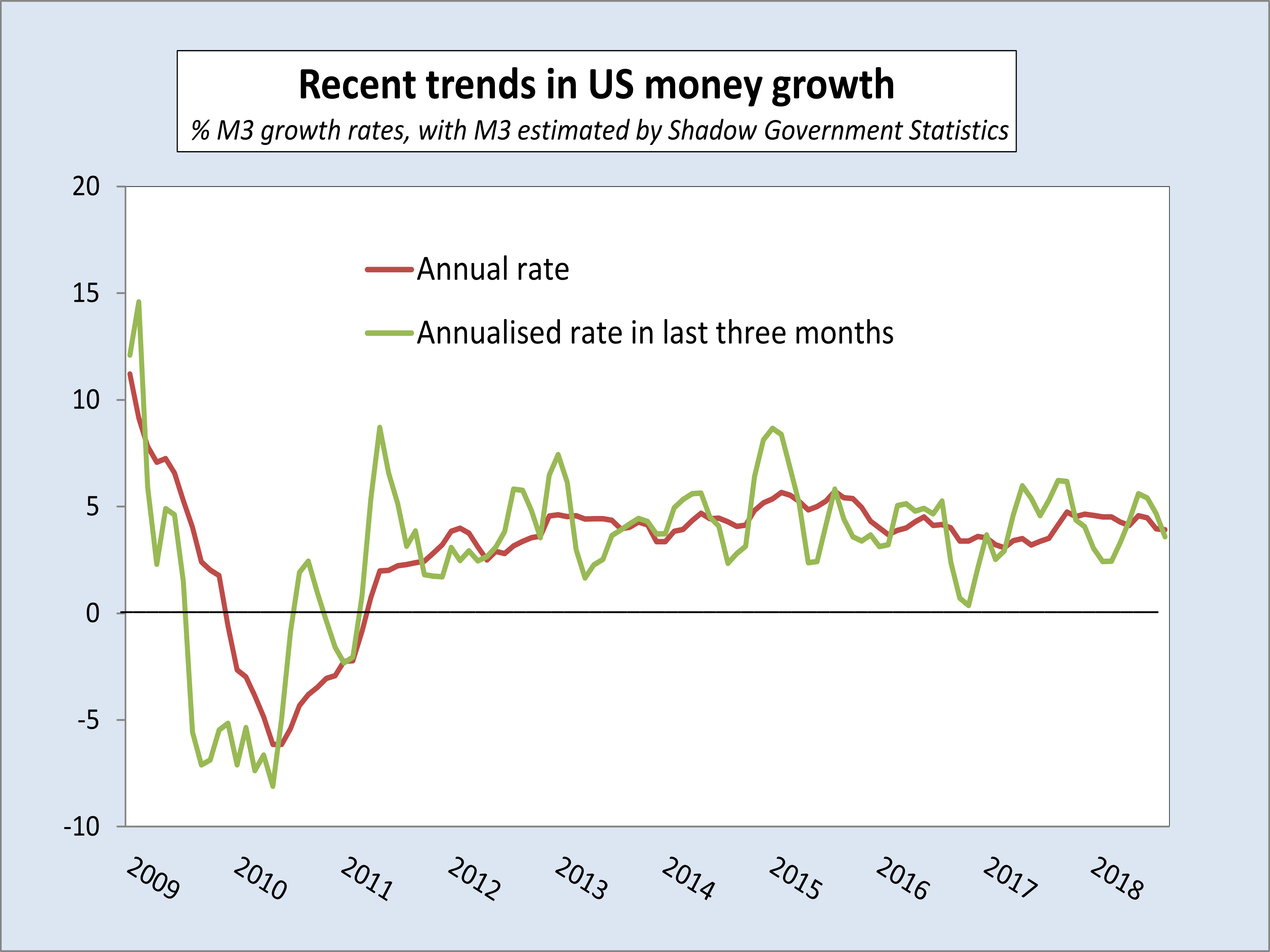
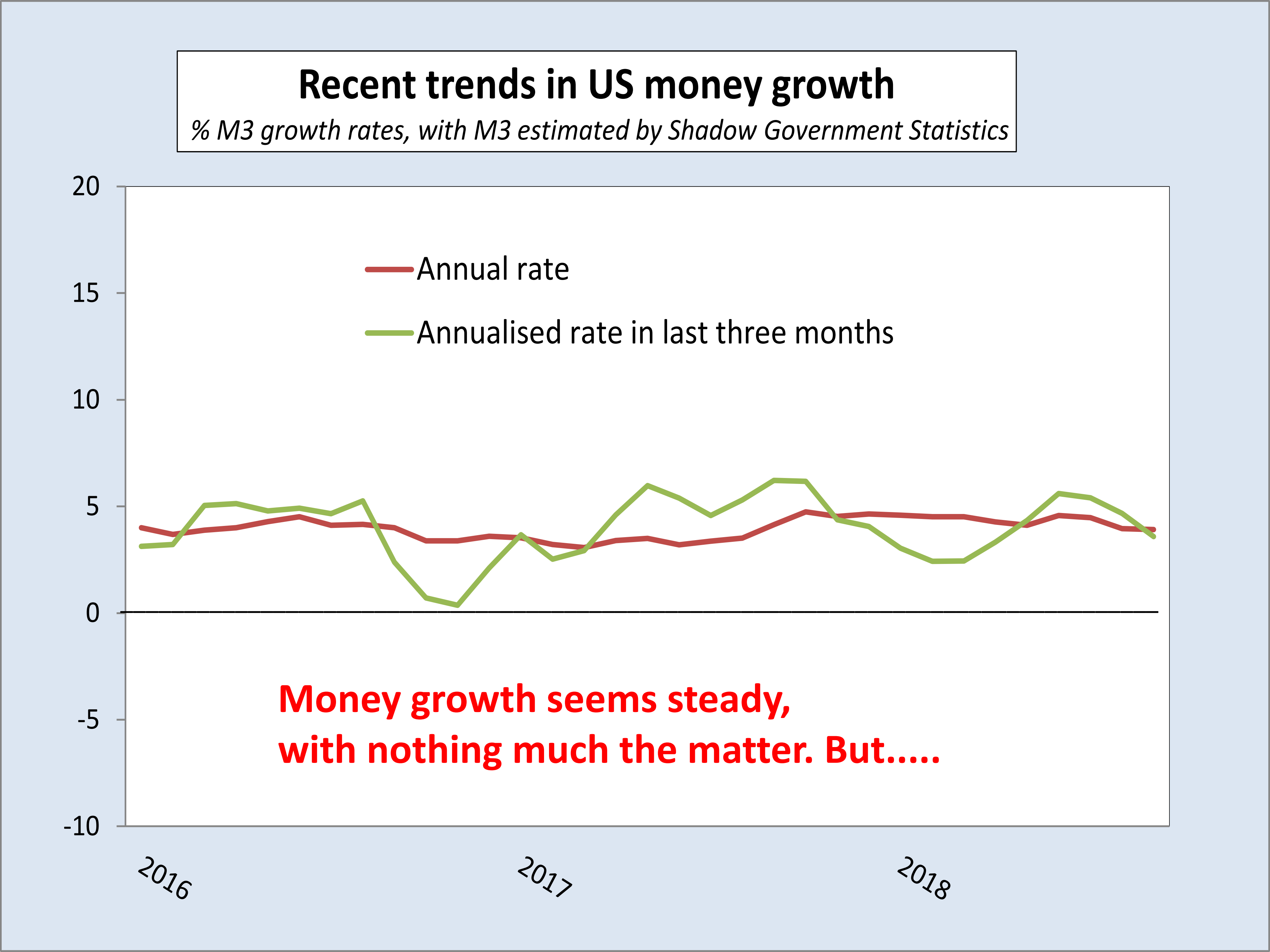
I will concentrate on what we said in late 2018.....

But early 2020 has been discombobulated by the coronavirus, which is a potentially massive supply-side shock.

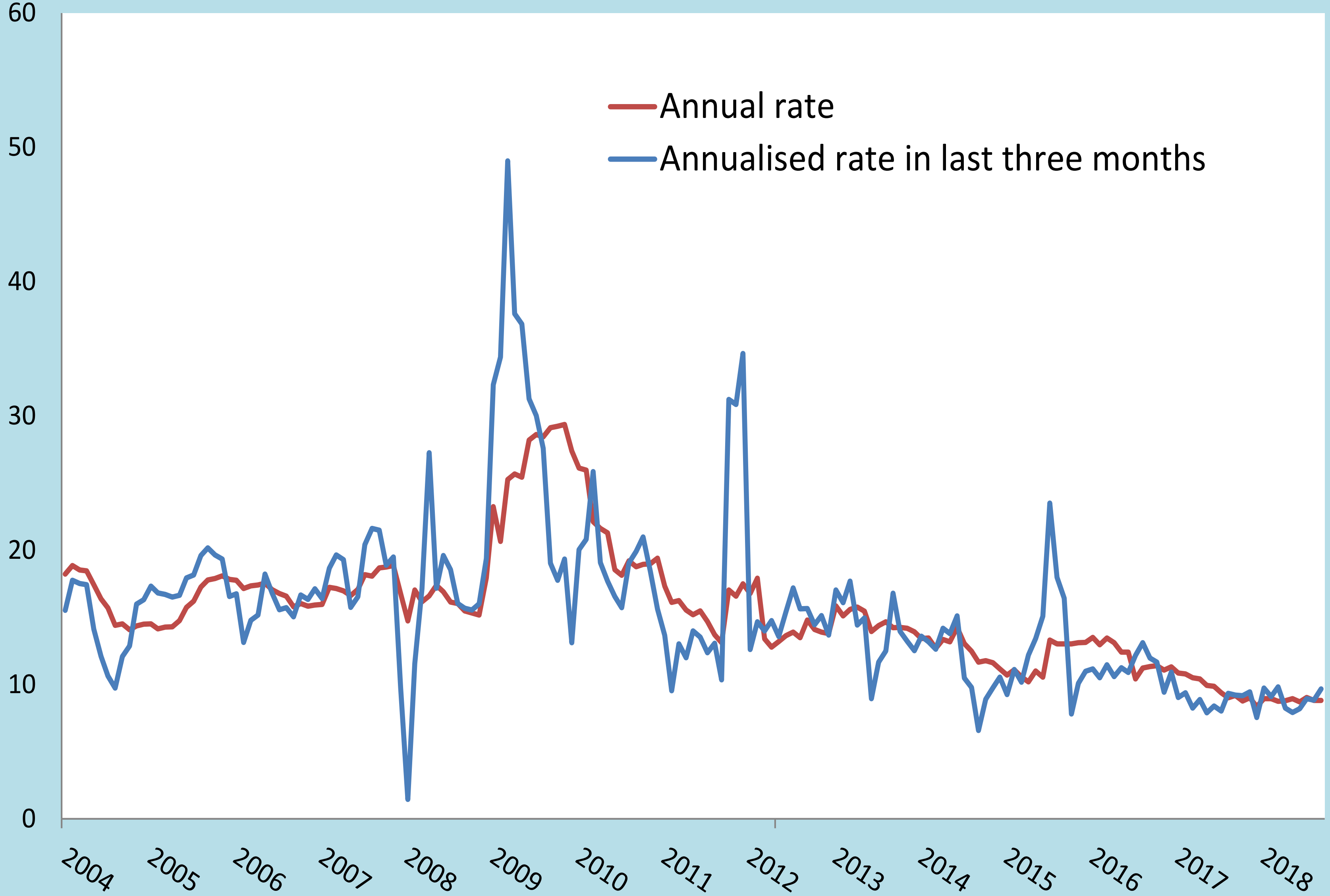


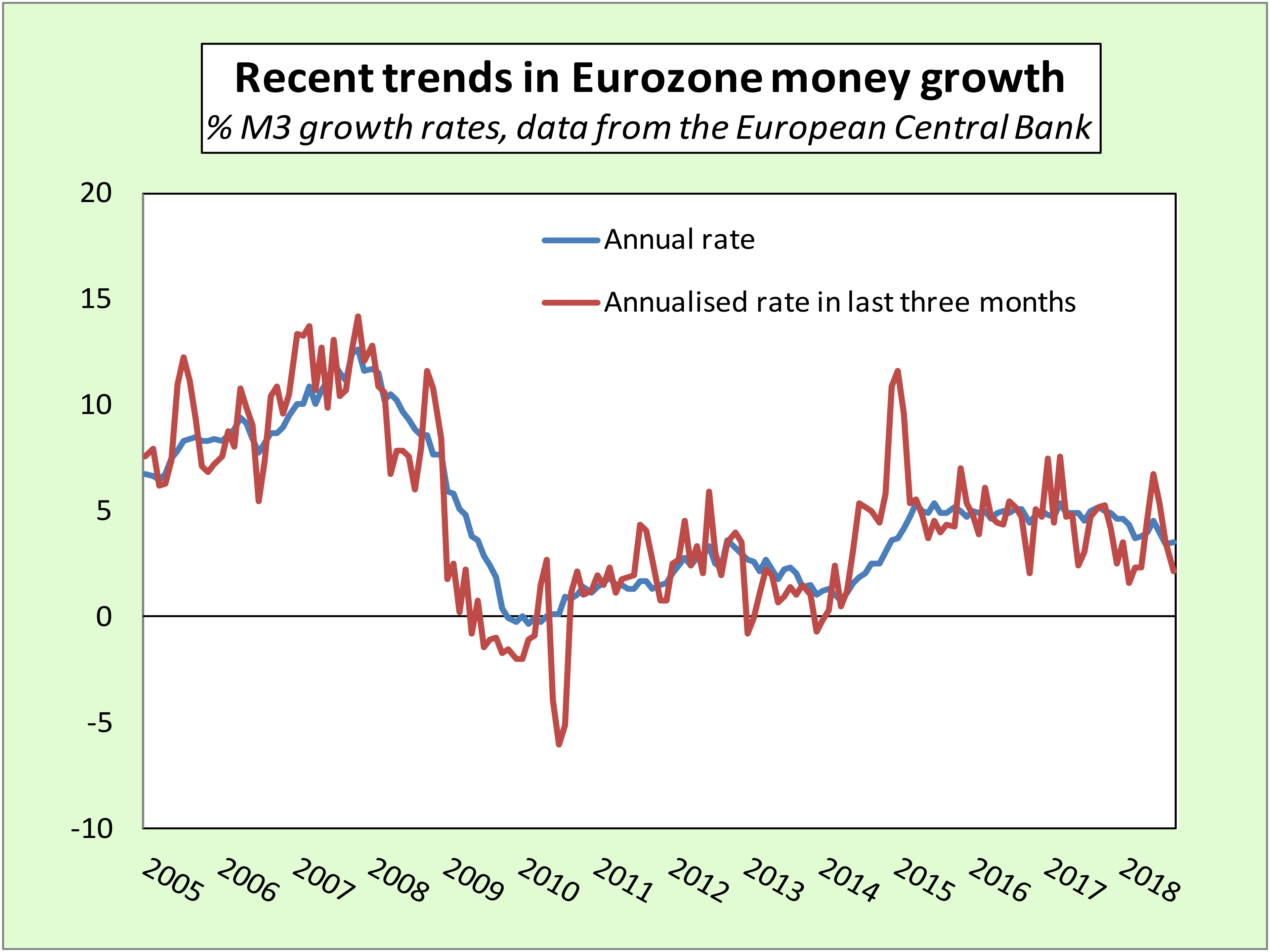
Recent trends in US money growth
% M3 growth rates, with M3 estimated by Shadow Government Statistics
Annual rate
Annualised rate in last three months
20
15
10
5
0
-5
-10
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018


Recent trends in US money growth
% M3 growth rates, with M3 estimated by Shadow Government Statistics
20
15
10
5
0
-5
-10
Annual rate
Annualised rate in last three months
Money growth seems steady,
with nothing much the matter. But.....
2016
2017
2018

Recent trends in China's money growth

% growth rates in M2, data from the People's Bank of China





Recent trends in Eurozone money growth
% M3 growth rates, data from the European Central Bank
Annual rate
Annualised rate in last three months
20
15
10
5
0
-5
-10
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018

The overall verdict, *in November 2018*

- **Beneath-trend growth of world demand and output is more likely in early 2019 than trend or above-trend growth.**
- The Fed is free to halt or reverse policy tightening if and when weakness becomes evident; the situation in the Eurozone is more problematic.
- A recession is unnecessary (& would be stopped by policy changes), because inflation is so low. Low inflation will persist into 2020 and probably into 2021.