European Macroeconomics

III. Policy implications of the two paradigms

Lecture 4

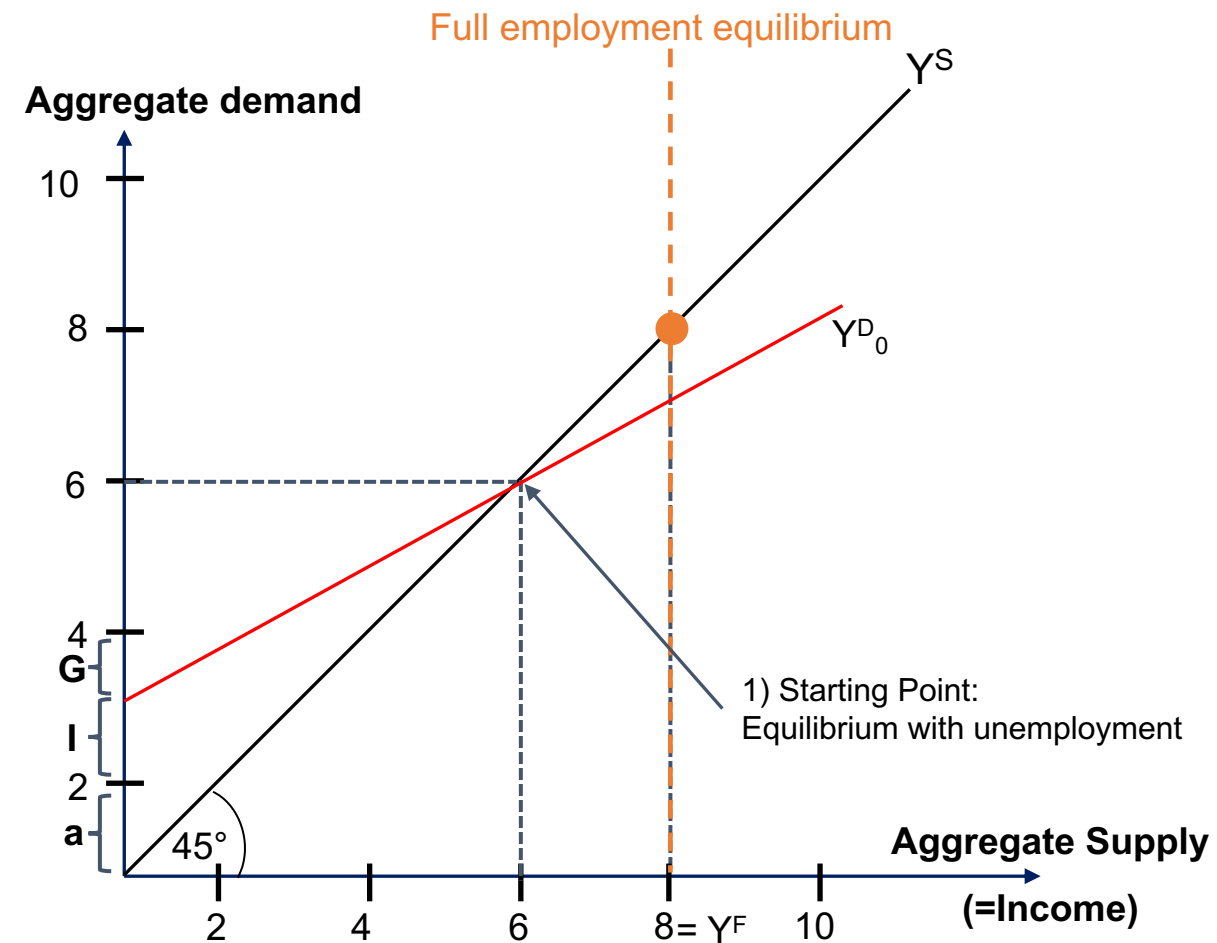# 1. Unemployment and stabilization policies
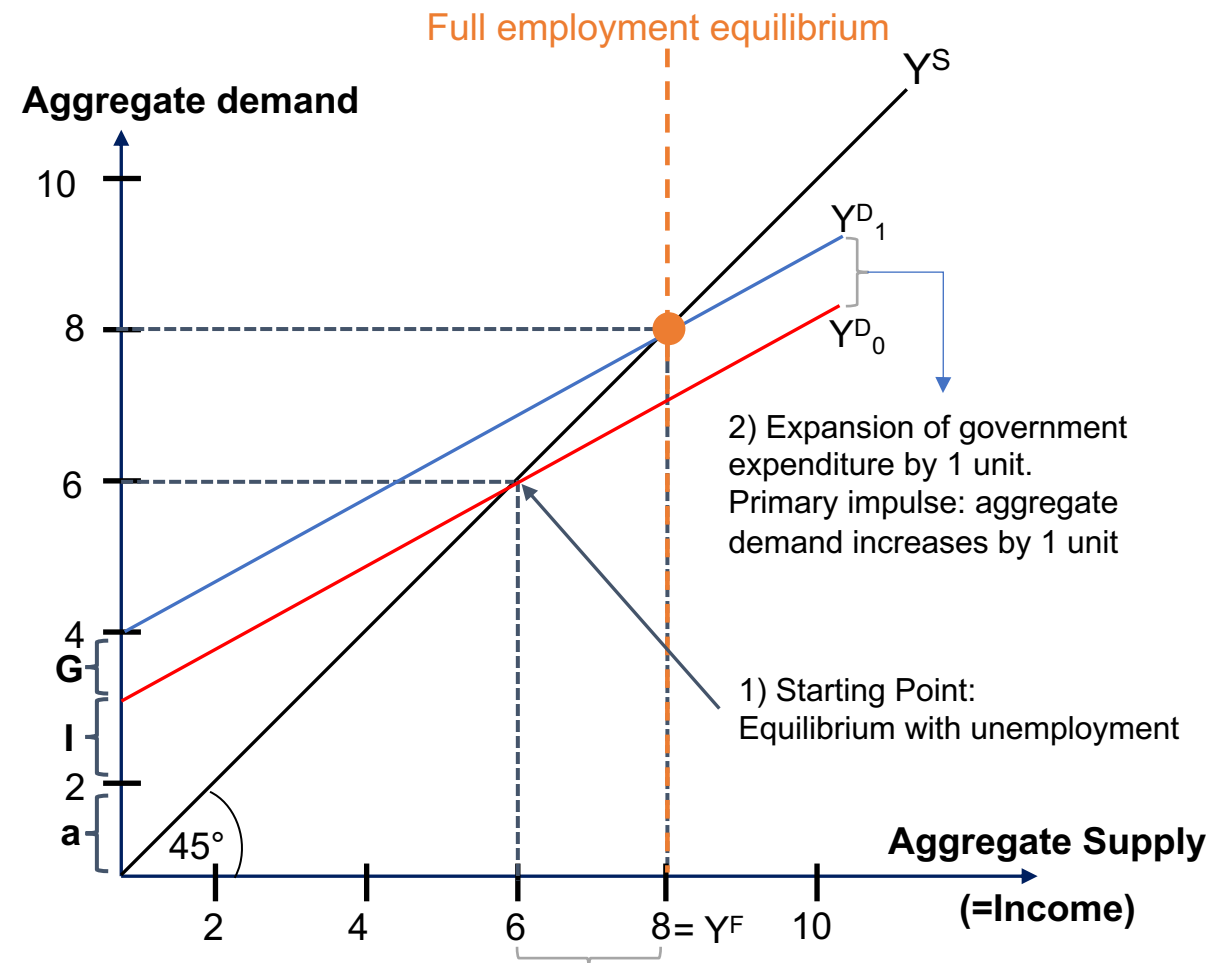
Fiscal Policy

The mechanics of government expenditures

- We start in a situation after a demand shock where aggregate demand (consumption and investment) is insufficient for generating the full employment output (Y^F). In this situation government expenditures (G) are zero.

- Now the government steps in with expenditures for public investment (G). The aggregate demand curve shifts upwards. Interestingly, the increase in output is twice the increase in government expenditures.

- This is the so-called multiplier effect of government expenditures

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Full employment equilibrium

Aggregate demand

Y^S

Y^D_1

Y^D_0

2) Expansion of government expenditure by 1 unit. Primary impulse: aggregate demand increases by 1 unit

1) Starting Point: Equilibrium with unemployment

G

I

a

45°

Aggregate Supply

(=Income)

2   4   6   8= Y^F 10

2) Expansion of government expenditure by 1 unit raises output by 2 units. Full employment equilibrium is reached

The mechanics of the multiplier of government expenditures (G)

	G	Y^D	Y^s (=Income,Y)	C(Y)	a	I
Starting situation	0	6	6	3	2	1
Period 1: The government increases its expenditures and aggregate demand by one unit. This increases aggregate supply and incomes by one unit. With the higher income, consumption increases by 0,5 units.	1	7	7,0	3,5	2	1
Period 2: Due to higher consumption aggregate demand is now 7.5. In response to this, supply and income increase to 7.5. Due to higher income consumption increase by 0,25 to 3.75	1	7,5	7,5	3,75	2	1
Period 3: Due to higher consumption aggregeate demand is now 7.75	1	7,75	7,75	3,875	2	1
And so forth ….	1	….	….	….	2	1
Final situation	1	8	8	4	2	1

The effect of lowering taxes

- We construct a **world with taxes** with aggregate demand as follows

$$Y^D = a + b(Y - T) + I + G$$

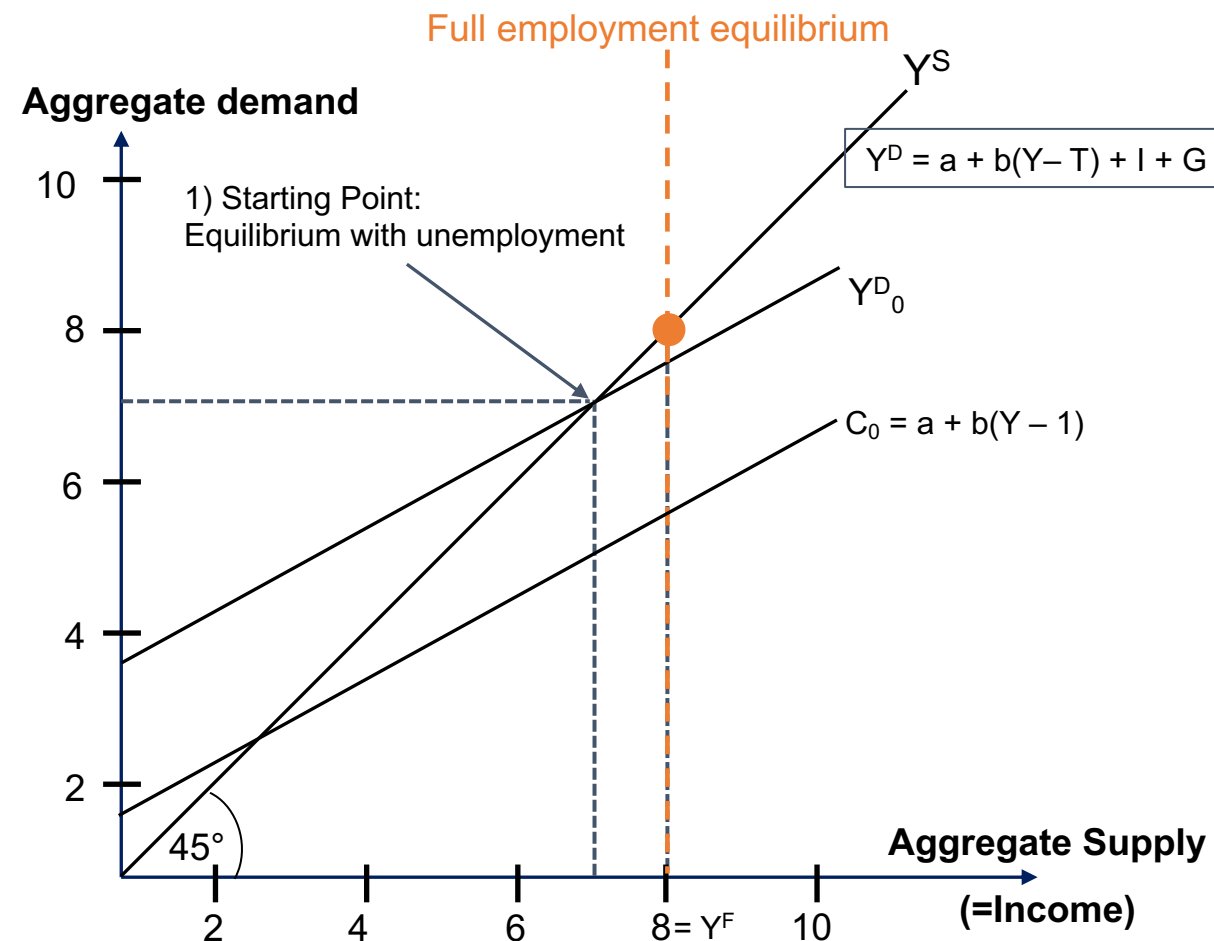- We assume that the tax (T) is **independent of the income**.

- We assume the following numerical values

$$Y^D = 2 + 0.5\,(Y - 1) + 1 + 1$$

- In **equilibrium** with $Y^S \equiv Y = Y^D$

  we get Y* = 7, which is below the full employment level.

- If the government **reduces taxes** by one unit to zero, the full employment output of 8 can be reached

- Thus, in our numerical example the **multiplier of taxes** is one.

- Why is **multiplier lower** compared with government expenditures? As households save a part of the tax rebate, that the **inital demand effect** is not one unit but – in our numerical example – only 0.5 units.

- From this the multiplier process starts, so that the overall demand increase is 1 unit

Full employment equilibrium

Y^S

Aggregate demand

$Y^D = a + b(Y - T) + I + G$

1) Starting Point:
Equilibrium with unemployment

$Y^D{}_0$

$C_0 = a + b(Y - 1)$

45°

Aggregate Supply

(=Income)

8= Y^F

The effect of lowering taxes

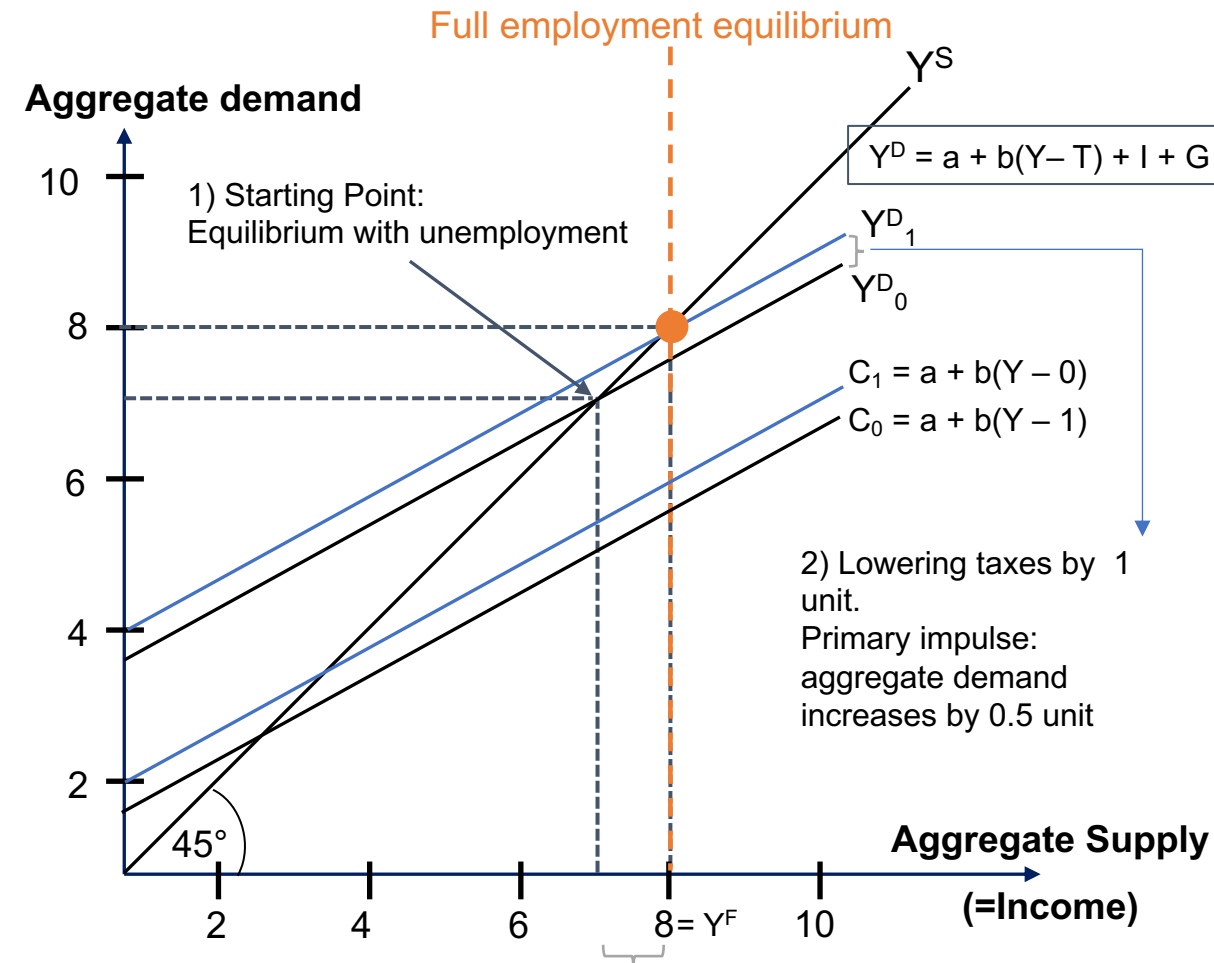- We construct a **world with taxes** with aggregate demand as follows

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Full employment equilibrium

Aggregate demand

Y^S

$Y^D = a + b(Y - T) + I + G$

Y^D_1

Y^D_0

1) Starting Point: Equilibrium with unemployment

$C_1 = a + b(Y - 0)$

$C_0 = a + b(Y - 1)$

2) Lowering taxes by 1 unit.
Primary impulse: aggregate demand increases by 0.5 unit

Aggregate Supply

(=Income)

$8 = Y^F$

45°

2) Reduction of taxes by 1 unit raises output by 1 unit. Full employment equilibrium is reached

An IMF survey shows that **spending multipliers** are high in recessions, especially at the zero-lower bound of interest rates.

TABLE 4. FISCAL MULTIPLIERS OVER THE BUSINESS CYCLE

	Spending			Revenue		
	Expansion	Linear	Recession	Expansion	Linear	Recession
Auerbach and Gorodnichenko (2012a), United States, 6 quarters	0	0.4	1.7	N/A	N/A	N/A
Auerbach and Gorodnichenko (2012b), OECD, first year	−0.2	0.2	0.5	N/A	N/A	N/A
Auerbach and Gorodnichenko (2014), Japan, 4 quarters[a]	1	1.2	2.4	N/A	N/A	N/A
Batini and others (2012), 4 quarters[b]	0.82	0.93	2.08	−0.08	−0.17	0.08
Baum and others (2012), 4 quarters[c]	0.72	0.79	1.22	−0.04	0.29	0.35
Canzoneri and others, 2012, DSGE, United States, impact multiplier	0.89	1.3	2.25	N/A	N/A	N/A
Hernandez de Cos and Moral-Benito (2013), Spain, 4 quarters[d]	0.6	0.65	1.3	N/A	N/A	N/A
Owyang, Ramey, Zubairy (2013), United States, 2 year multipliers[e]	0.7	N/A	0.8	N/A	N/A	N/A
Owyang, Ramey, Zubairy (2013), Canada, 2 year multipliers[e]	0.4	N/A	1.6	N/A	N/A	N/A

[a] Using deviation of output from HP trend as measure of business cycle.
[b] Average of all countries in sample (including euro area).
[c] Average of G6 in sample.
[d] Using output gap to define expansions and recessions.
[e] Regimes reflect high and low employment.

TABLE 5. GOVERNMENT SPENDING MULTIPLIERS AND THE ZERO LOWER BOUND

	No ZLB	ZLB	Notes
Christiano and others (2011)	1.1	3.7	Impact multiplier for temporary increase in spending in the United States. Multiplier at ZLB assumes policy implemented at time t when ZLB begins to bind. If there are implementation lags of fiscal stimulus, multiplier declines. For instance, an implementation lag of 1 period reduces the multiplier to 1.5.
Eggertson (2010)	0.5	2.3	Impact multiplier for temporary increase in government spending in the United States.
Erceg and Linde (2010)	1	4	ZLB multiplier of 4 is based on a temporary spending increase of 1 percent of GDP in the United States, and ZLB duration of 8 quarters. Larger positive spending shocks are associated with lower multipliers since they shorten the duration at which the economy is at ZLB. For instance, for a government spending increase of above 3.5 percent of GDP, the multiplier declines to 1.5. Similarly, a cut in spending increases the multiplier since it prolongs the duration of ZLB. For instance, a cut of 1 percent of GDP is associated with a multiplier of up to 6.

Source: IMF, URL: https://www.imf.org/external/pubs/ft/tnm/2014/tnm1404.pdf

2. The role of government debt

Lecture 5

(1) The classical model

Mankiw's textbook on government deficits

- Government deficits are discussed with the classical model of the financial market ("loanable funds model")

- Mankiw and many others (often implicitly) assume that the government **deficit is used for consumption**

- Thus, as the AGP is no longer available for investment, this implies that the **supply of saving declines**

- The upward shift of the supply curve leads to a new equilibrium with a **lower saving/investment equilibrium** and a higher interest rate

- Lower investment implies that **economic growth will be lower**
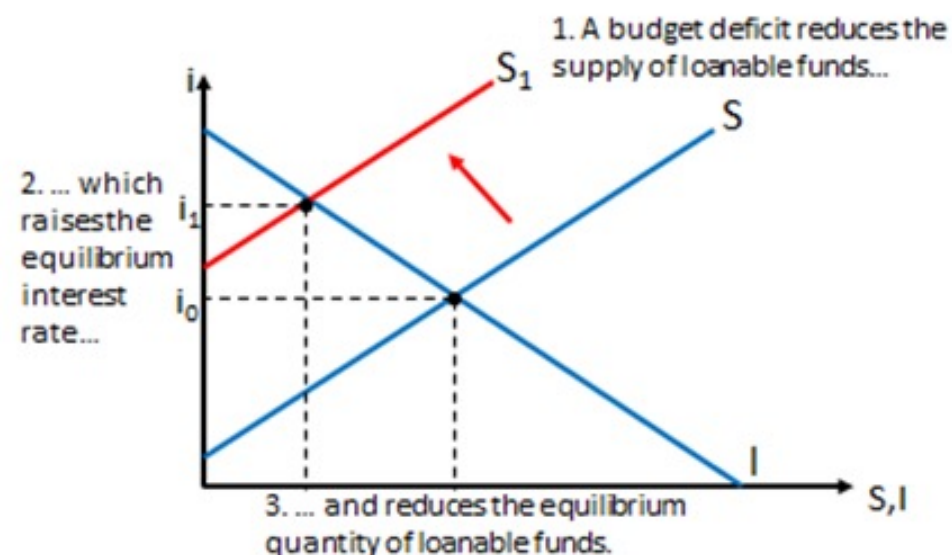
Source: Twitter, @PeterBofinger

A simple modification leads to a completely different result

- We assume that the government uses the deficit **for investment**.

- In this case the **demand for funds increases**

- The upward shift of the demand curve leads to an equilibrium with **more saving and investment** and a higher interest rate

- In this case, the deficit leads to more investment and **more rapid economic growth**
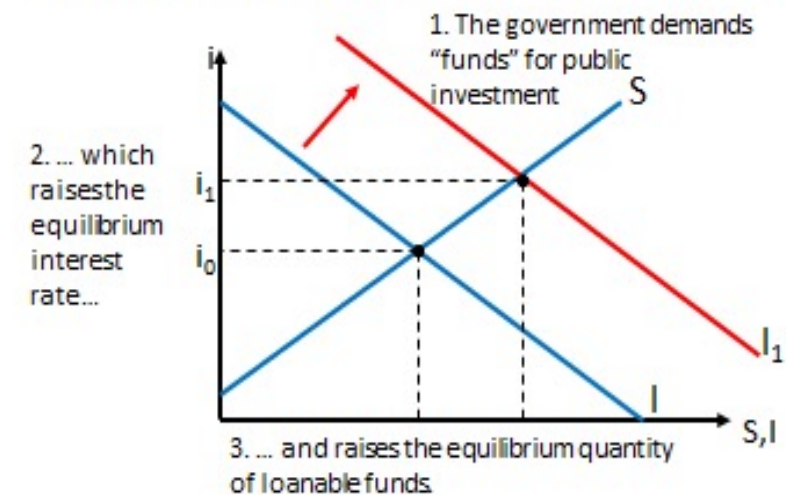
Source: Twitter, @PeterBofinger

Key features of the classical model

With the APG, financing and investment are inseparable

When the APG is used for investment, it can no longer be used as a means of finance

Thus, when the goverment borrows funds, there is financial **and** a real crowding out

(2) The monetary model and Modern Monetary Theory

What is Modern Monetary Theory?

Source: http://larrysummers.com/

Larry Summers:

„a recipe for disaster"

See www.washingtonpost.com/opinions/the-lefts-embrace-of-modern-monetary-theory-is-a-recipe-for-disaster/2019/03/04/6ad88eec-3ea4-11e9-9361-301ffb5bd5e6_story.html?fbclid=IwAR36iJF2GB52tMd0HGmQjQHJ8TuQGHL33pRWXsV68SisBuhXtficJUvYgMg&noredirect=on

Source: IMF

Kenneth Rogoff:

„Modern Monetary Nonsense"

See www.project-syndicate.org/commentary/federal-reserve-modern-monetary-theory-dangers-by-kenneth-rogoff-2019-03?barrier=accesspaylog

Key insights from Abba Lerner's "Functional Finance" Spritus rector of MMT

Abba P. Lerner (1903-1982)

- "(…) fiscal policy, its spending and taxing, (…) shall all be undertaken only with an eye to only the **results** of these actions on the economy and **not to any established traditional doctrine about what is sound or unsound**."

- "The (…) responsibility of the government (…) is to keep the **total rate of spending** in the country on goods and services neither greater nor less than that rate which at the current prices would **buy all the goods that it is possible to produce**. If total spending is allowed to go above this there will be **inflation**, and if it is allowed to go below this there will be **unemployment**."

- "(…) any excess over money revenues, if it cannot be met out of money hoards must be met by **printing new money**"

Abba P. Lerner, Functional Finance and the Federal Debt, Social Research, Vol. 10, No. 1, pp. 38-51

The financial dimension of government deficits

Three ways to finance a goverment deficit

Central bank

- With direct lending or purchases of government bonds, central bank deposits of the government increase.
- When the government spends the money, bank deposits of the private sector increase (M1) and bank reserves
- More „funds" are available in the private sector

Commercial banks

- With direct lending or direct purchases of government bonds, bank deposits of the government increase.
- When the government spends the money, bank deposits of the private sector increase.
- More „funds" are available in the private sector
- When the central bank purchases the bonds from banks, the reserves of the banks increase

Capital markets

- When private households or firms purchase government bonds, bank deposits of the government increases, bank deposits of the private sector declines
- When the government spends the money, its money stock declines, the money stock of the private sector increases.
- The amount of funds of the private sector remain constant.

➡ **In sum**: there is **no financial crowding-out**

The financial and the real constraint

Thomas Palley:

- "The essence of MMT is that sovereign currency issuing governments, such as the US Federal government, are **financially unconstrained**. That is because government has the power to create money to pay its bills, including its debts.

- The only constraint on government is the **availability of real resources**. If the resources are available, government can buy them and pay for them by creating money. If they are not available, creating money to buy goods **causes inflation**" [1]

- The experience of **Japan** shows that a large country can have high and increasing debt levels without inflationary effects

Japan: Government Debt Ratio and Inflation
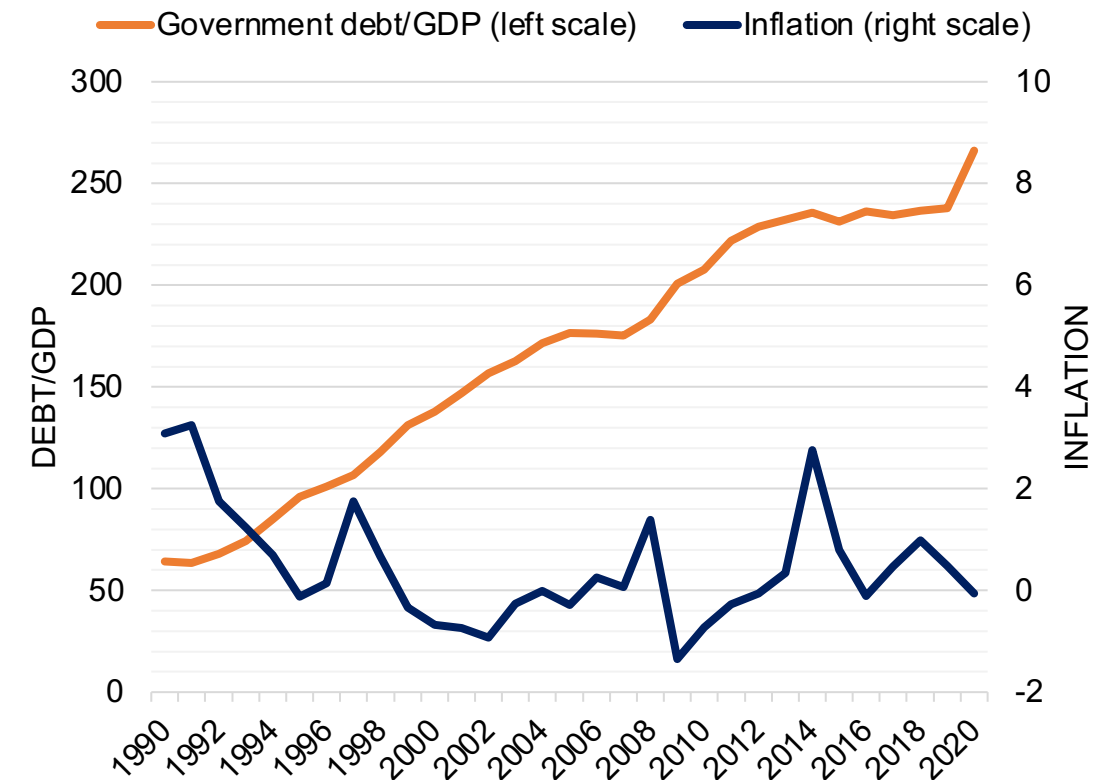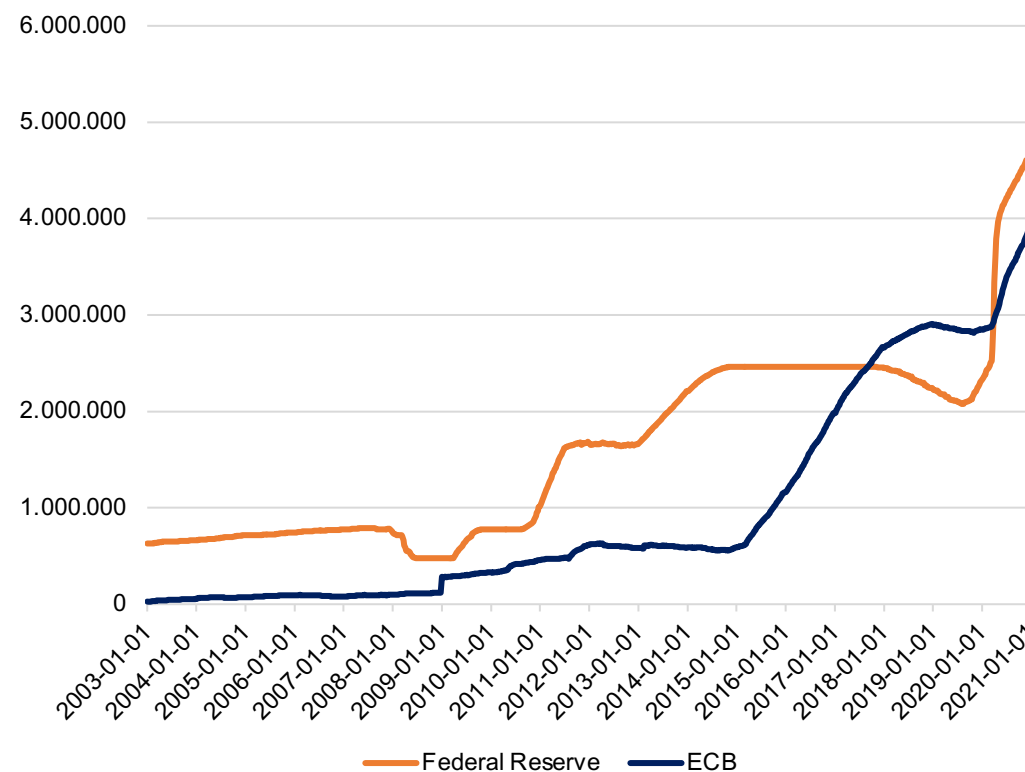

[1] https://www.boeckler.de/pdf/p_fmm_imk_wp_44_2019.pdf

Covid Pandemic: MMT in action
The Fed and ECB finance huge government deficits

Fiscal Balance United States and Euro Area

Legend: ■ Euro area ■ United States
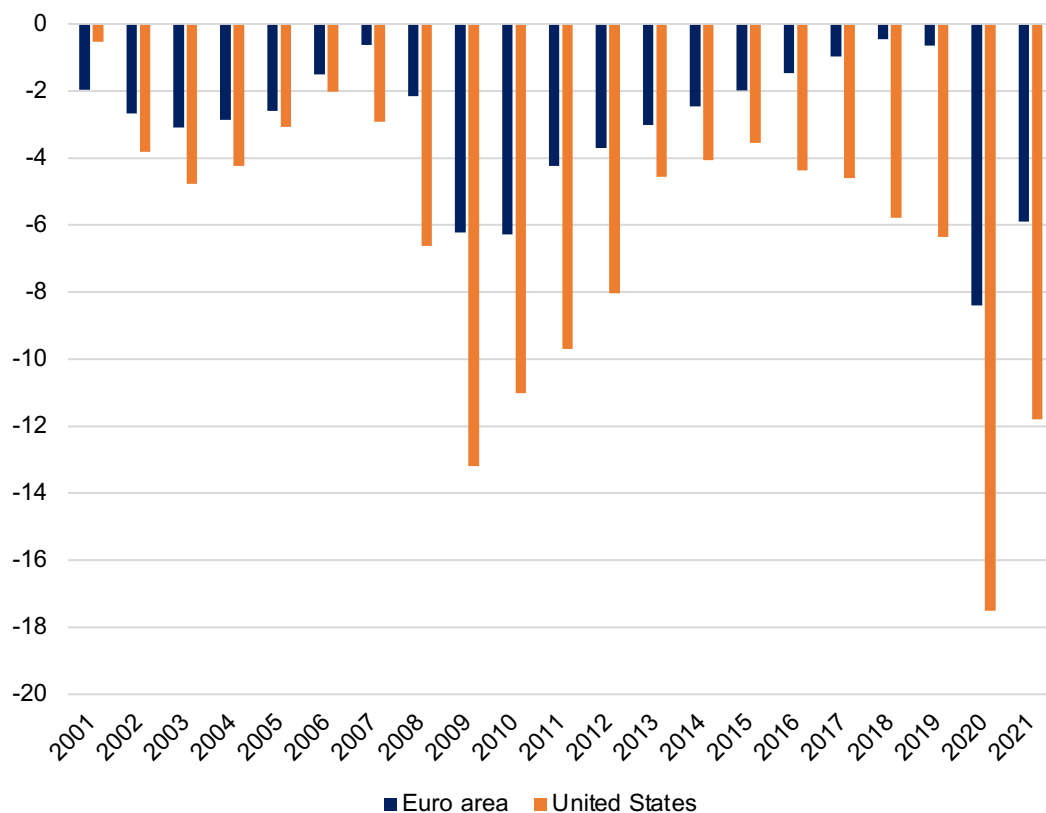
Government bond holdings of Federal Reserve and ECB

Legend: — Federal Reserve — ECB

Is Larry Summers right? Is MMT a recipe for disaster?

Larry Summers:

"(…) contrary to the claims of modern monetary theorists, it is not true that governments can simply create new money to pay all liabilities coming due and avoid default.

As the experience of any number of emerging markets demonstrates, past a certain point, this approach leads to hyperinflation. (…) As with any tax, there is a limit to the amount of revenue that can be raised via such an inflation tax. If this limit is exceeded, hyperinflation will result.

(…) modern monetary theorists typically reason in terms of a closed economy. But a policy of relying on central bank finance of government deficits, as suggested by modern monetary theorists, would likely result **in a collapsing exchange rate. This would in turn lead to increased inflation, increased long-term interest rates (because of inflation), risk premiums, capital fleeing the country**, and lower real wages as the exchange rate collapsed and the price of imports soared."

Paracelsus
1493 – 1541

"All things are poison, and nothing is without poison; the dosage alone makes it so a thing is not a poison."

Source: https://www.washingtonpost.com/opinions/the-lefts-embrace-of-modern-monetary-theory-is-a-recipe-for-disaster/2019/03/04/6ad88eec-3ea4-11e9-9361-301ffb5bd5e6_story.html