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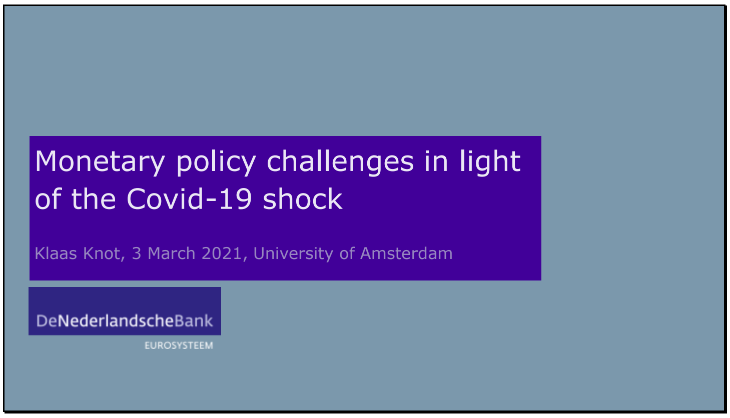

Dear students, alumni and staff of the Amsterdam School of Economics,

- In this lecture I will discuss the monetary policy challenges of the Covid-19 shock.

- The shock is clearly a tail event which has created huge uncertainties in the economy and financial markets.

- Policymakers had to react swiftly with new policy instruments to mitigate the impact.

- Today, I will focus on the challenges that monetary policymakers are facing.

- I am happy to take any questions after my presentation.

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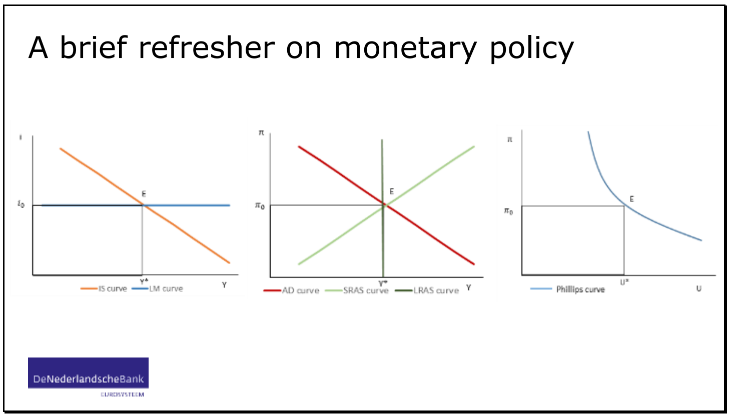

Let me start with a brief refresher on the role of monetary policy in the economy, by taking you to the IS/LM and Aggregate Demand & Supply framework.

The students are perhaps more familiar with this framework than most of the alumni, who probably have to dig deep into their memory.

While my first experience with the framework was also many years ago, I still occasionally have the privilege of applying the theory in the monetary policy considerations I have to make today.

Here we have the main ingredients of the framework:

- The IS curve represents equilibrium in the goods & services markets.
- The LM curve represents equilibrium in the money market. In this graph, it is depicted as a flat curve consistent with the (nominal) interest rate set by the central bank.
- The Aggregate Demand (AD) curve which shows the relation between demand and inflation.
- The Aggregate Supply (AS) curve (short-term & long-term) which shows the relation between supply, such as labor supply, and inflation.
- The LM curve can be interpreted as the interest rate policy rule. Monetary policy responds to positive or negative output gaps to keep inflation steady, by adjusting its interest rate.

In reality, financing conditions for firms and households are not only determined by the central bank policy rate. Liquidity, term and credit risk premia also play an important role.

These are often influenced by demand and supply factors for financial assets, and can be influenced by central banks with unconventional monetary policy tools (purchase programmes and lending operations to banks).

- The Phillips curve shows the downward sloping relationship between unemployment (U) and inflation.

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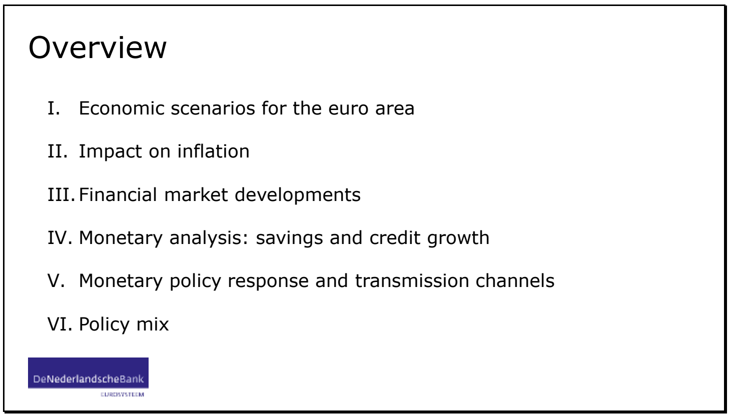

Let me now give an overview of what I will discuss today. During my presentation I will occasionally refer back to the simple theoretical framework just presented.

- First, I will introduce the economic scenarios for the euro area, which the ECB has developed. They show different possible paths for GDP growth and inflation.

- Then I will discuss the main developments in the financial markets, as reflected in the risk pricing of assets, including sovereign bonds.

- Thirdly, I will show some key monetary variables which inform the central bank about economic and financial changes following the Covid-19 shock.

- Then I will talk about the policy measures that were taken by the ECB since March 2020 and the monetary transmission channels.

- I will close with some reflections on the macroeconomic policy mix.

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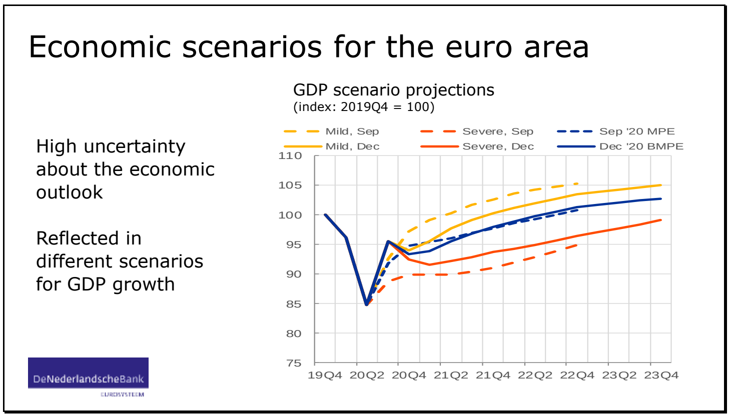

- Standard economic models are not suitable for analyzing the pandemic crisis. This is because the crisis is accompanied by unusually high uncertainty about the economic outlook.
- The ECB therefore works with different scenarios. They are determined by the evolution of the pandemic, the severity and duration of containment measures and the prospect of a medical solution.

- This graph provides the latest GDP projections as published in December 2020. It clearly shows the serious impact of the pandemic on the euro area economy in 2020 and the rebound this year. (In the stylized macro-framework the downturn presents a shift of the IS and AD curves to the left).

- Next week, the ECB will publish updated GDP projections. While I do not yet know the new figures for the euro area, DNB has already updated the growth projections for the Dutch economy. These might provide some indication about the state of the euro area economy.

- A tentative estimate suggests that the Dutch economy will rebound less in 2021 than expected in December, when we forecasted a GDP growth of nearly 3%.

- Due to the effect of the most recent lockdown, GDP growth in 2021 is expected to be substantially lower compared to the December estimate.

- A stronger rebound is expected in 2022. This is based on the consideration that over the course of 2021, the pandemic will end as vaccination programmes are implemented.

- From the rebound in the third quarter of last year, we have learnt that the economy can recover swiftly once it is no longer weighed down by the pandemic.

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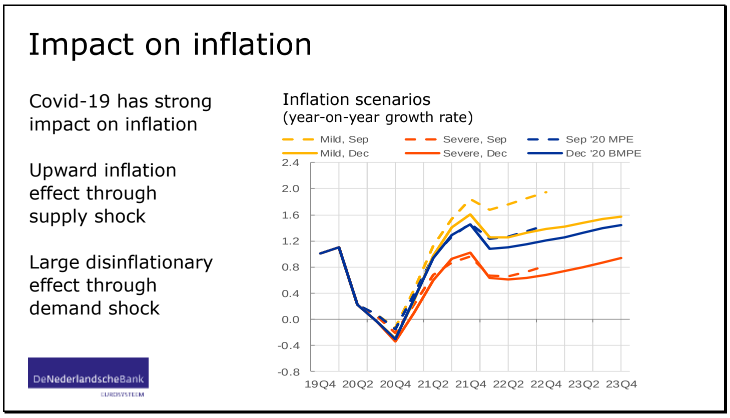

- The pandemic can be characterized as both a supply and demand shock, which poses a challenge to assess the impact on inflation. Supply and demand shocks tend to move inflation in opposite directions.

- The lockdown measures induced a substantial negative supply shock that pushed inflation upwards. Inflationary supply shocks have been particularly large in sectors like trade, transport, hotels and catering, and culture & recreation.
- In the stylized macro-framework I presented earlier, this is similar to a shift of the (short-term) AS curve to the left, with inflation increasing.

- Negative demand shocks have a strong disinflationary effect that tends to outweigh the inflationary supply effects. The overall impact of the pandemic on inflation is negative, owing to shortfalls in demand which are amplified by a decline in income.
- In the stylized macro-framework, this is similar to a shift of the AD curve to the left and a downward shift along the Phillips curve, associated with falling output, increase of unemployment and lower inflation.

- Due to differences in the balance of demand and supply, the inflation outcome varies between the scenarios. However, also in the mild scenario, headline inflation is expected to remain far from the ECB's objective for inflation of below, but close to 2%.

- With regards to the long-run impact of pandemics, research about previous pandemics suggests that trend inflation may fall due to inflation expectations remaining low a while after pandemics have ended.

- But we cannot exclude that also in the medium- to long-run, supply factors will play a role (e.g. higher cost of production due to changing global value chains).

- This makes the long-run inflation effect of the pandemic more ambiguous.

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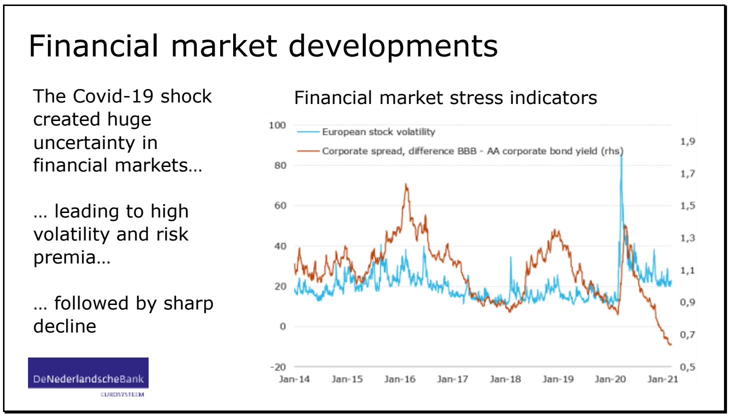

- In the first stage of the crisis, in February and March last year, there was huge uncertainty in financial markets about the impact of the pandemic.

- The uncertainty was reflected in a spike of stock price volatility and an increase of corporate credit spreads.

- A lack of liquidity also prompted some investors to close highly leveraged positions. The related fire sales of assets put additional pressure on asset prices.

- These market conditions presented an undesired tightening of financial conditions, putting strains on the channels through which monetary policy is transmitted to the economy.

- On the back of large-scale government and central bank support, stock prices have rebounded strongly from March 2020 lows. Investor sentiment has improved by anticipation of a strong economic recovery.

- In line with equity price increases, also corporate bond spreads have declined, amid continued inflows into corporate bond market funds.

- Spreads have continued their decline this year to very low levels, in spite of the second wave of the pandemic currently weighing on the economy. It indicates an ongoing search for yield by investors.

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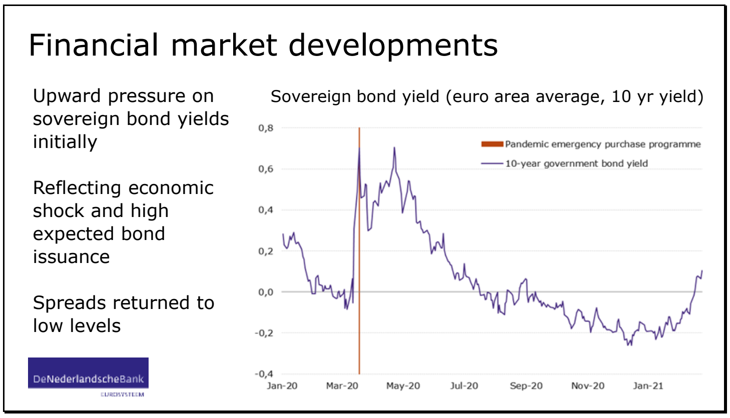

- The market sell-off in March 2020 extended to high-quality asset markets, including gold and top-rated government bonds, as investors fled into liquidity.

- The general increase in sovereign spreads reflected that the pandemic is a common macroeconomic shock hitting all EMU member states.

- Expectations about substantial public debt increases and debt issuances (related to government support measures) put strong upward pressure on sovereign spreads.

- From the perspective of the monetary policymaker, this led to an undesirable tightening of financing conditions. Specifically, households, firms and governments would have experienced increased borrowing rates, at a time when these sectors badly needed finance to withstand the shock of the pandemic.

- Sovereign spreads narrowed following the announcement of the Pandemic Emergency Purchase Programme (PEPP) in March 2020 and continued to decline across countries on the back of substantial monetary and EU-wide fiscal support.

- As a result, the euro area average 10-year sovereign bond yield has fallen close to pre-pandemic levels earlier this year. Recently, sovereign bonds yields have increased again, which partly reflects an improving economic outlook.

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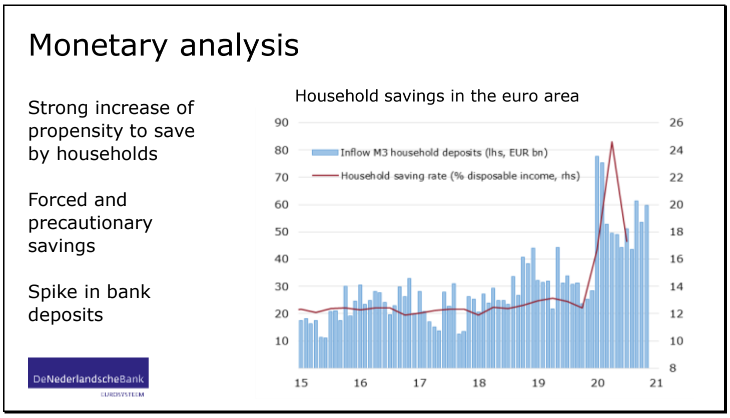

- Monetary policy decision-making is based on a comprehensive analysis of economic and financial developments, which are often reflected in monetary variables like deposit holdings and credit growth.

- I will discuss two noticeable recent monetary developments in the euro area as a consequence of the pandemic: the strong increase of household savings and the increased credit demand by non-financial corporates.

- The propensity of households to save reached unprecedented levels in 2020H1. This can be explained by forced (involuntary) savings and by precautionary savings.

- The spike in savings is reflected in an accumulation of bank deposits. The recent peaks match with the first and second wave of the pandemic.

- The lockdown of economies has created conditions in which private sector demand falls sharply, while precautionary savings increase.

- In the stylized macro-framework, this is represented by shifts of the AD and IS curves to the left, associated with a fall in output.

- The fall in private demand is, at least partly, compensated by higher government spending (in the stylized macro-framework this shifts the AD and IS curves to the right).

- The decrease of public savings (reflected in higher budget deficits) can be seen as a mirror image of private savings.

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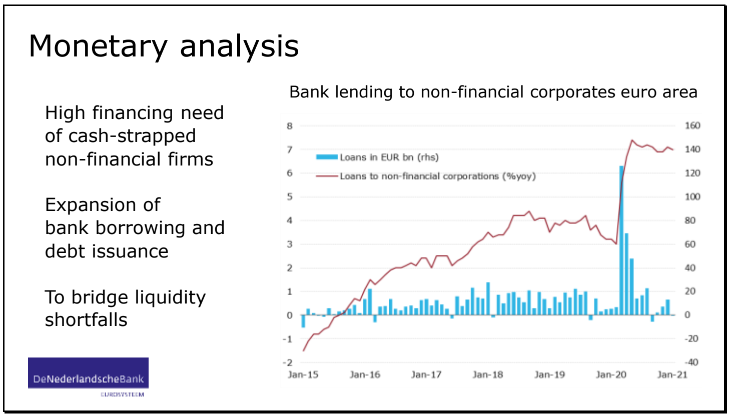

- Another noticeable development in the early stages of the crisis was the strong demand for credit by non-financial corporates (NFCs).

- NFC external financing needs increased markedly in 2020H1, reflecting a sharp decline in firms’ operating cash flows. It mirrored the economic downturn and sharp declines in corporate sales.

- Firms took on additional debt to bridge resulting liquidity shortfalls and to finance persisting working capital requirements.

- The financing needs were met by strong growth in borrowing from banks and net issuance of debt securities, supported by the large-scale monetary, supervisory and fiscal support (e.g. government loan guarantees).

- In 2020H2 firms’ and early this year demand for loans and drawing of credit lines decelerated again.

- Business failures have been limited so far, but this may change if support measures are reduced. Banks have prepared by increasing the provisions for non-performing loans.

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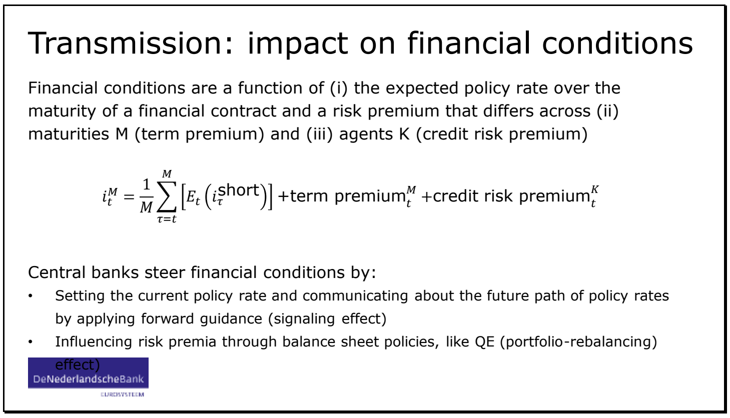

- The main challenge for central banks and supervisors is to prevent the economic crisis culminating in a financial crisis. This could lead to a rationing of credit to households and firms (a credit crunch).

- To prevent this from happing the ECB has a loose monetary policy stance and supports the transmission of monetary policy, by
    - a low policy interest rate (DFR; -0.5%) and forward guidance ("policy interest rates will remain at present or lower levels until inflation outlook robustly converges to price stability aim within the projection horizon")
    - asset purchase programmes (APP, PEPP)
    - extended refinancing operations (TLTROs)

- In combination with the forceful fiscal responses at national and EU level, these measures have been successful in stabilising financial markets and protecting credit supply.

- Financial conditions have been eased by reducing risk premia in bond yields.

- [explaining the formula] The pricing of any financial contract can be thought of as a function of the expected policy rate over the term of the contract, a term premium that compensates for duration risk and a credit risk premium that compensates for the risk of default.

- The ECB can impact financial conditions in several ways:
    - Actual and expected future policy rates (forward guidance);
    - Risk premia, by purchasing long-term and/or risky bonds (APP, PEPP).
    - Lending rates of banks (TLTROs).

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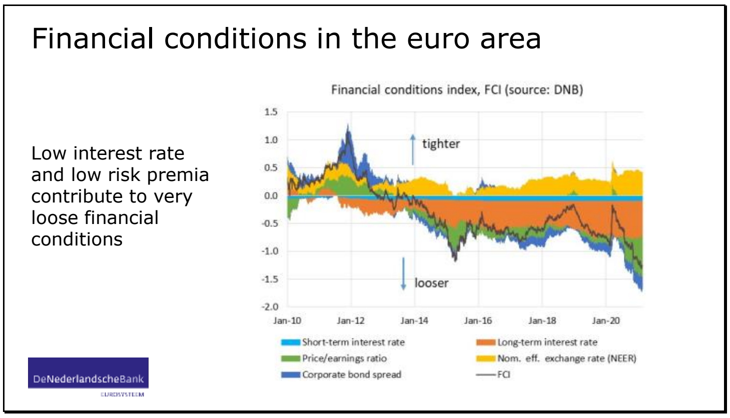

- On the back of sustained monetary accommodation, the substantial fiscal support, as well as the buoyant global risk sentiment, euro area financial conditions are very loose in most asset classes.

- Monetary policy measures have contributed to this, most directly by their impact on interest rates and risk premia, as reflected in the contribution of the long-term interest rate and corporate bond spread to the loose financial conditions.

- Loose financial conditions support the transmission of the accommodative monetary policy stance to the economy, by easing the financing opportunities of firms and households.

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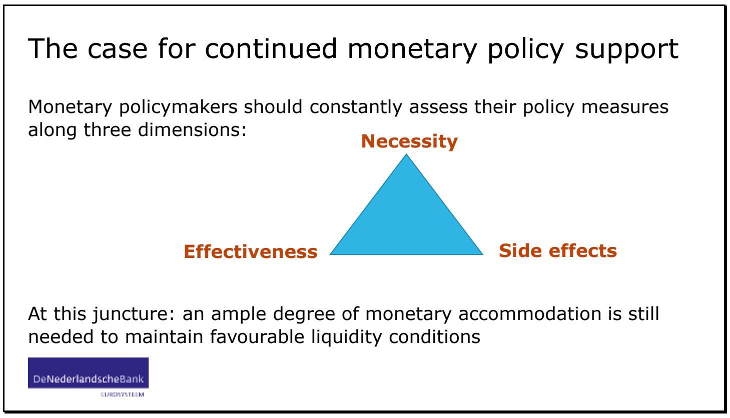

- For the central bank it is important to assess to what extent the financial conditions fit with the outlook for the economy and inflation.

- Monetary policymakers can evaluate their policy decisions along three dimensions, and it is important to view them in concert as there might be trade-offs involved:
    - Necessity
    - Effectiveness
    - Side effects

- The necessity of continued monetary policy support follows from the mandate of the ECB, which says that maintaining price stability is the primary objective.

- At the current juncture, inflation is expected to remain low (we are still on the flat part of the Phillips curve).
- So it is still necessary to maintain favourable liquidity conditions and an ample degree of monetary accommodation.

- Having said this, the ECB should keep focus on the negative side effects of monetary policy, such as financial imbalances via asset prices and reduced incentives for reform and balance sheet adjustments.

- Such trade-offs, as well as the effectiveness of monetary policy instruments, is part of the ongoing ECB strategy review.

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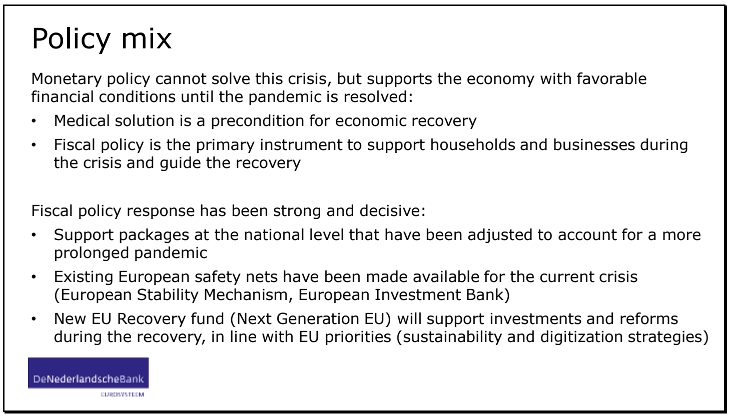

- Given the international nature of the crisis, the coordinated European policy reaction is important, both in the acute crisis and recovery phase.

- The much needed crisis response was faster and more decisive than for the euro crisis, signaling improved policy coordination at the European level.

- Increased fiscal space (activation of the general escape clause of the Stability and Growth Pact, SGP) allows national fiscal authorities to increase spending without breaching the European fiscal rules.

- The adverse impact on the economy would have been significantly worse in the absence of countercyclical fiscal policy measures. Fiscal expansion works in the same direction as accommodative monetary policy.

- The EU Recovery Fund (NGEU) has contributed to the reduction in sovereign bond yields and has enhanced the prospect of a sustained recovery across the euro area. A sustainable recovery from the crisis also requires sufficiently productive public and private sector investments.

- By facilitating growth enhancing investments in the hardest-hit countries, without tightening financial conditions, the NGEU can contribute to prevent permanent damage and further divergence across EMU countries.

- Increasing imbalances are challenging for our single monetary policy and ultimately harmful for all euro area countries. Also in that respect, The Recovery fund is in the interest of all countries involved.

- Finally, I should note that the EMU is still not complete. The banking union is still one pillar short and progress on the CMU is lacking.

- Looking beyond the current crisis, this episode once again underlines the need for a more complete institutional framework.

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Questions?