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263 Report by Kerstin Bernoth, Marius Clemens, Geraldine Dany-Knedlik, and Stefan Gebauer

Identifying Effective Combinations of Economic Policy Measures for the Coronavirus Recession in Europe

- Monetary and fiscal policy announcements were unable to stabilize financial markets in the short term
- Loosening banking and deficit regulations is effective in combination with rescue packages
- Packages of measures should be major and coordinated Europe-wide

LEGAL AND EDITORIAL DETAILS



DIW Berlin — Deutsches Institut für Wirtschaftsforschung e. V.

Mohrenstraße 58, 10117 Berlin

www.diw.de

Phone: +49 30 897 89-0 Fax: -200

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DIW Berlin Leserservice, Postfach 74, 77649 Offenburg

leserservice@diw.de

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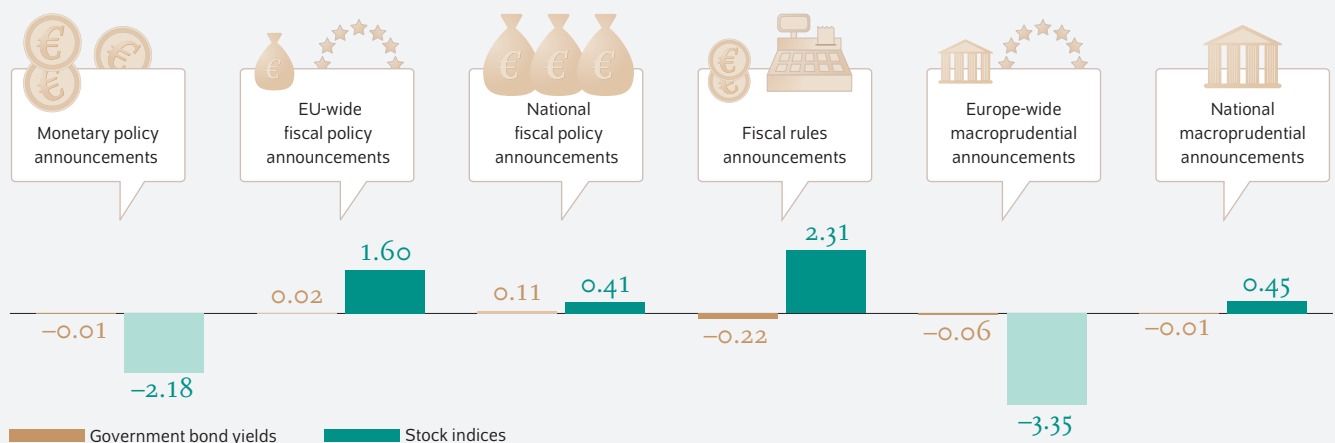
Identifying Effective Combinations of Economic Policy Measures for the Coronavirus Recession in Europe

By Kerstin Bernoth, Marius Clemens, Geraldine Dany-Knedlik, and Stefan Gebauer

- Study analyzes if monetary and fiscal policy announcements as well as macroprudential measures taken in the EU stabilized financial markets in the short term during the coronavirus recession
- On average, monetary and fiscal policy announcements were unable to lower government bond yields and increase stock prices
- However, model calculations show a stabilizing effect from suspending deficit rules and loosening banking regulations
- Stabilizing effects on stock and government bond markets are particularly apparent when measures for different economic policy areas are announced simultaneously
- Packages of measures must be large and coordinated Europe-wide; permanent stabilization fund and de-deposit protection fund could guard against risks

Economic policy announcements often had no stabilizing effect; stock prices fell and yields barely reacted

Change of government bond yields and stock indices in percentage points



Source: Eurostat; Macrobond; authors' own calculations.

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FROM THE AUTHORS

"Our results clearly show that above all, suspending EU fiscal rules and relaxing banking regulations stabilize the markets, especially when done simultaneously."

— Geraldine Dany-Knedlik —

MEDIA



Audio Interview with Geraldine Dany-Knedlik (in German) www.diw.de/mediathek

Identifying Effective Combinations of Economic Policy Measures for the Coronavirus Recession in Europe

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ABSTRACT

As the coronavirus pandemic spread across the globe in early 2020, the European Central Bank as well as national governments in the euro area enacted or announced numerous economic policy measures to counteract the severe economic consequences of the resulting lockdowns. In this paper, the immediate effect of the announcements on government bond and stock markets are estimated in a panel study. The results show that the ECB's monetary policy measures barely had a stabilizing effect on the financial markets in the short term. With the exception of the announcement of Germany's Economic Stabilization Fund, the fiscal rescue packages of other national governments and the EU did not lower government bond yields. In contrast, suspending fiscal rules and relaxing banking regulations had a calming effect on the markets, especially the government bond markets. In conjunction with fiscal policy measures, EU-wide measures in particular, they were able to stabilize the stock markets. Overall, the results show that policy action on the part of individual governments is not sufficiently effective on its own. To be effective, measures must be taken by Member States together. A joint crisis mechanism, such as the European Recovery Plan announced by the EU, could be quite efficient.

The measures enacted to slow the spread of the coronavirus have caused economic activity in the euro area to shrink drastically. In the first quarter of 2020, euro area GDP declined by 3.8 percent compared to the previous quarter. This decline varied strongly between countries; for example, -5.8 percent in France and -2.2 percent in Germany.¹ However, these figures do not yet cover the full extent of the recession, partly because the economic lockdown affected only a few weeks of the first quarter of 2020. Nevertheless, the figures indicate that as of May 2020, the world economy is experiencing an even more severe global recession—dubbed the coronavirus recession—than during the global financial crisis of 2008–09.² From mid-February to mid-March 2020, the leading stock indices fell by more than 40 percent at times and yields on government bonds rose, in some cases considerably, especially in countries hit the hardest by the pandemic, such as Italy and Spain.

To avoid the coronavirus recession leading to permanent, real economic damages such as corporate insolvency and massive job losses, expansionary monetary and fiscal policy as well as macroprudential measures³ were taken in the euro area. These stabilization measures and guarantees amount to several trillions of euros and thus exceed all comparable aid and rescue packages since World War II.

Due to the current data situation as of publication, it cannot be conclusively quantified if these measures have had positive effects on overall economic development. However, how these announcements affected government bond yields and stock prices in the short term can be analyzed. If government bond yields fall, this lowers money market interest rates, stimulating lending and aggregate demand. In addition,

¹ Cf. Eurostat, "GDP and employment flash estimates for the first quarter of 2020," press release, May 15, 2020 (available online, accessed on May 19, 2020. This applies to all other online sources in this report unless stated otherwise).

² DIW Berlin, *Konjunkturbarometer May 2020: Drastischer Einbruch im zweiten Quartal (2020)* (in German; available online).

³ Macroprudential regulation comprises various instruments designed to contain systemic risks in the financial system. These measures include systemic capital requirements for financial intermediaries and instruments to address systemic risk among borrowers and in property markets. Cf. Claudio Borio, "Implementing the Macroprudential Approach to Financial Regulation and Supervision," *Financial Stability Review* no. 13 (2009): 31–41.

how stock prices respond to economic policy stimuli should provide an indication of whether the measures have significantly improved firms' economic prospects.

Monetary policy measures to combat the economic crisis: ECB accelerates asset purchases

Over the course of March 2020, the European Central Bank (ECB) reacted to the coronavirus pandemic with four important monetary policy resolutions with which it hoped to stabilize the real economy and thus the overall price level (Table 1). On March 12, the ECB announced it would be moderately expanding an existing program, the Asset Purchase Programme (APP). In addition, targeted liquidity provision via existing programs was extended or further subsidized. Six days later, the ECB increased these moderate measures and announced the Pandemic Emergency Purchase Programme (PEPP), which should increase the volume of assets held by the ECB by around 30 percent by the end of 2020. One week later, the ECB also overturned its self-imposed issuer limit for the government bonds held.⁴ On April 30, 2020, the ECB's Governing Council announced it would be extending the PEPP not only until the end of the year, but until the coronavirus recession has been managed. The Governing Council also plans to make the third series of targeted longer-term refinancing operations more appealing and to temporarily launch a series of pandemic emergency longer-term refinancing operations (PELTROs) at favorable interest rates.

Fiscal policy measures: EU and individual Member States compile comprehensive packages

EU Member State governments reacted quickly to the economic effects of the pandemic, in some cases with massive rescue packages to stabilize the real economy. Due to the large number of announcements, the following analysis only takes into account major packages or decisive legislative changes that may have affected the expectations of market participants (Table 1).

Italy, the first EU country to be hit hard by the coronavirus pandemic, announced their first major rescue package on March 11, 2020, which included emergency measures and guarantees. On March 13, 2020, Germany followed with the announcement of its "protective shield," (*Schutzschild*), which provides for easier access to short-time working allowance, fiscal liquidity support, a 450 billion euro increase in the guarantee scheme for liabilities, and the possibility of unlimited borrowing ("credit bazooka") for firms of all sizes. Spain and France passed similar rescue packages with high guarantees of 200 and 300 billion euros, respectively, on March 17, 2020. On March 23, 2020, Germany increased its efforts to stabilize the economy over the course of the lockdown and announced an Economic Stabilization Fund (*Wirtschaftsstabilisierungsfonds*) and a rescue package for the smallest firms (*Solidaritätsfonds*), amounting to 660 billion

euros for firms. The scope of the German fiscal aid measures thus exceeded the trillion euro mark.⁵

The EU Commission reacted similarly early by issuing a declaration of intent on March 13, 2020, to take joint action against the coronavirus recession at a European level. However, a concrete draft (three pillar model) including loans and guarantees amounting to 540 billion euros was not presented until April 9, 2020.⁶ Furthermore, both the EU and individual countries have suspended their fiscal rules. Finally, the EU Commission proposed the implementation of a European recovery fund equipped with 750 billion euros on May 27, which should be attached to the EU budget.

Macroprudential measures: bank regulations loosened

In addition to changes to monetary and fiscal policies, banking regulations in the euro area were also modified in response to the outbreak of the coronavirus.⁷ Expansionary macroprudential measures were enacted and banking regulatory standards were temporarily loosened to give banks more leeway in lending to the real economy and to avoid liquidity shortages in the financial system (Table 1). The first package of measures, announced on March 12, 2020, loosened restrictions of capital and liquidity standards for the banks the ECB directly oversees.⁸ In addition, full use may be made of the leeway surrounding the capital conservation buffer and the liquidity coverage ratio.⁹ The ECB also encouraged national supervisory authorities to reduce countercyclical capital buffers appropriately, taking into account national circumstances. In addition, the ECB brought forward a measure originally scheduled to come into effect in January 2021 and relaxed the quality standards for banks to meet Pillar 2 Requirements.

In a second round of measures, the ECB promised banks, among other things, greater supervisory flexibility in dealing with non-performing loans, especially if these loans are backed by the state. In a third round of measures the following week, the ECB asked euro area banks to freeze dividend payments and share buybacks. In a final, fourth round

⁵ However, it must be taken into account that only around a quarter of the total sum directly increased the government debt ratio. In addition, investments in companies, similar to bank investments, could be resold at a profit after the coronavirus recession. Guarantees only have budgetary effect if insolvencies actually occur.

⁶ On April 3, 2020, the first drafts of the three pillar model were presented. See Tagesschau, *Drei-Säulen-Modell als Kompromiss?* (in German) (available online)

⁷ Macroprudential measures enacted by the ECB's Single Supervisory Mechanism (SSM) directly apply to euro area Member States. However, further EU Member States outside the currency union committed to apply respective regulations in part.

⁸ Banks were allowed to fall below the soft capital requirements ("Pillar 2 Guidance") of the Pillar 2 Requirements. In addition to the minimal capital requirements (Pillar 1) and the hard capital requirements (Pillar 2), the soft requirements mainly comprise non-legally binding bank-specific requirements designed to ensure the solvency of banks in stress situations, which are based on regular stress tests.

⁹ The capital conservation buffer should improve banks' general loss buffer and can be up to 2.5 percent of risk-weighted assets. The liquidity coverage ratio defines the minimum amount of highly liquid assets that banks must hold to be able to meet their obligations over a 30-day period in the event of a stress scenario.

⁴ Previously, the ECB has guaranteed to not to hold more than one third of a country's government bonds to rid itself of the suspicion of government financing.

Table 1

Announcements of important national and Europe-wide economic policy measures

Volume of the measures and guarantees in billions of euros

Date	Country	Policy	Announcement	Description	Volume	Guarantees
03/10	IT	€	Rescue package, protective shield	Tax deferral, reduced working hours, health expenditure, and subsidies	25	250
03/12	SP	€	Rescue package	Health expenditure	4	
	ECB	€	Package of measures I	Easing of capital requirements according to Pillar 2 Guidance, capital conservation buffer, liquidity coverage ratio, planned 2021 changes to requirements enacted earlier	120/1800 ²	
	ECB	€		Expansion of the existing asset purchase program by 120 billion euros and further provision of liquidity by expanding long-term refinancing operations		
03/13	EU	€	Declaration of intent	Health expenditure		
	GER	€	Rescue package, protective shield	Tax deferral, short-time work, health expenditure, and guarantees	60 ¹	550
03/17	FR	€	Rescue package, protective shield	Guarantees and subsidies	45	
	SP	€	Rescue package	Tax deferral, short-time work, health expenditure, and guarantees	30	130
03/18	GER	€	Modification of capital requirements	Reduction of countercyclical capital buffer from 0.25 to 0 percent as of April 1, 2020		
	FR	€	Modification of capital requirements	Retraction of planned increase of the countercyclical capital buffer for April 2, 2020; reduced to 0 percent instead		
	ECB	€		Announcement of the Pandemic Emergency Purchase Programme (PEPP) in the amount of 750 billion euros		
03/20	EU	€	Policy	Fiscal rules suspended		
	IT	€	Package of measures	Expansion of relaxation of capital requirements according to Pillar 2 Guidance to non-significant banks, temporary measures such as temporary simplified reporting requirements		
	ECB	€	Package of measures II	More flexibility in dealing with non-performing loans, avoidance of procyclical assumptions to determine provisions		
03/22	FR	€	Protective shield	Guarantees		300
03/23	GER	€	Stabilization and solidarity fund	Loans, investments, securities, subsidies	260	400
03/25	ECB	€		Suspension of the purchase limit which limited the amount of government bonds that could be held from one country (one third of all bonds)		
03/27	IT	€	Modification of capital requirements	Retention of the countercyclical capital buffer of 0 percent		
	ECB	€	Package of measures III	Recommendation to freeze dividend payments for 2019 and 2020, at least until October 1, 2020. Recommendation to freeze share buybacks.	30 ³	
03/31	SP	€	Rescue package	Further rescue measures		
	SP	€	Modification of capital requirements	Retention of the countercyclical capital buffer of 0 percent		
04/03	EU	€	Rescue package, protective shield	Short-time work, health expenditure, guarantees, and subsidies (three pillar model)	100	440
04/06	IT	€	Protective shield	Guarantees		400
04/08	IT	€	Protective shield	Guarantees		400
04/09	EU	€	Rescue package, protective shield	Agreement on the three pillar model		
04/11	IT	€	Package of measures	Supervisory board's recommendation to banks on consumer protection, money laundering, and avoiding financial crime		
04/15	FR	€	Rescue package expansion	Tax deferral, short-time working allowance, and subsidies	110	
04/16	ECB	€	Package of measures IV	Reduction of capital requirements for market risks		
04/23	EU	€	Rescue package and stabilization fund	Short-time work, health expenditure, and subsidies		
04/30	ECB	€		PEPP extension; more appealing conditions for the third series of longer-term, targeted refinancing operations; pandemic emergency longer-term refinancing operations (PELTROs) introduced		

€ Fiscal policy measures € Monetary policy measures € Macroprudential measures

1 Estimates using the AK Steuerschätzung May 2020 as well as using the authors' own calculations based on the BA figures from April 2020.

2 120 billion euro additional loss buffer via equity capital without supervisory measures being taken. This can also be used to finance up to 1.8 trillion euros in loans (ECB estimates).

3 Of the planned dividend payment of 35 billion euros, about 30 billion euros were retained (as of April 26, 2020, ECB estimate).

Box

Event Study and Panel Model

An event study analyses how financial market prices change during a relatively short period of time following announcements of economic policy decisions. Assuming markets are efficient and no other event occurs during the period, the effects of these decisions are immediately factored in. In the following analysis, a one-day window around an announcement at time period t is used. It is also assumed that securities react to an event between time period t and $t+1$. In this way, the effectiveness of individual economic policy measures on bond and stock markets can be estimated. For the event study, daily changes to ten-year government bonds yields (according to the Maastricht criteria, Eurostat) and the percentaged daily changes of the respective FTSE stock indices (Macrobond) of Germany, France, Italy, and Spain were observed on economic policy event days that were work days.¹ The event days are listed in the table of economic policy announcements (Table 1). Additionally, a confidence band is calculated, marking the area in which yields fluctuated with 68 percent probability during the crisis period between February 22 and May 11, 2020, to capture the normal fluctuations.

To quantify the average effects of the announcements of monetary policy measures, EU-wide and national fiscal policy measures, as well as changes to macroprudential regulations on the bond and stock markets, country panel models are estimated. For the esti-

¹ If an announcement is made on a weekend, the changes in yields or indices from Friday to Monday are considered.

mations, daily changes to ten-year government bond yields (according to the Maastricht criteria, Eurostat) and the daily percentage changes of the respective FTSE stock indices (Macrobond) of Germany, France, Italy, and Spain were used. These are explained using event dummy variables. These variables take the value one on the day a measure is announced from the respective economic policy area and have the value zero on all other days. To identify the effect of the measures from different policy areas, the announcement days for the policy areas cannot be completely identical. Overall, nine dummy variables were created to explain changes in bond yields and stock markets using three different model specifications. The baseline model takes the following form:

$$y_{i,t} = \beta_1 Mopo_t + \beta_2 Fipo_t + \beta_3 Macropru_t + \varepsilon_{i,t}$$

is the (percentage) daily change of bond yields or stock market indices from country i at time period t . The variables $Mopo_t$, $Fipo_t$, and $Macropru_t$ correspond to dummy variables for monetary policy, fiscal policy, and macroprudential announcements at time period t . $\varepsilon_{i,t}$ represents independent, normally distributed errors with finite variance and a mean value of zero from country i at time period t . As the statistical insignificance of country fixed effects but also of random effects cannot be excluded using F and chi-squared test statistics, the panel models do not include either effect. The models were estimated using the method of least squares with daily data from February 21 to May 11, 2020.

of measures on April 16, 2020, the ECB reacted to increased financial market volatility in the wake of the coronavirus recession by lowering capital requirements for market risks.

Measures taken at a European-level followed national measures. For example, on March 18, 2020, the German Federal Financial Supervisory Authority (*Bundesanstalt für Finanzdienstleistungsaufsicht*, BaFin) announced they would be reducing the countercyclical capital buffers for German banks. In France, the High Council for Financial Stability (*Haut Conseil de Stabilité Financière*, HCSF) also decided to reduce countercyclical buffers, after originally planning to increase them to 0.5 percent on April 2, 2020. In Italy (March 20) and Spain (March 21), the supervisory authorities decided to leave their respective buffers at 0 percent.

Economic policy measures in the EU frequently do not stabilize financial markets

Did the expansive fiscal and monetary policy measures as well as the relaxation of macroprudential regulation undertaken during the coronavirus recession have effects on government bond and stock markets and, if yes, were the

effects significant?¹⁰ To estimate the short-term effect of the announcements, the daily rates of change of German, French, Italian, and Spanish government bond yields and stock indices from the end of February 2020 to mid-May 2020 are measured in a panel model. The average effect of macroprudential, fiscal and monetary policy measures are identified using dummy variables (Box).

In addition to the base model, two different model variants are estimated which allow both a differentiated observation of the individual measures and how they interact. It is differentiated between the ECB's monetary policy measures and fiscal policy and macroprudential measures on a national and European level. In the first variant, the fiscal policy measures are further differentiated according to pure fiscal measures and suspended fiscal rules. In the second variant, it is additionally differentiated between national and European fiscal policy measures as well as macroprudential regulations.

¹⁰ Since economic policy measure announcements from third countries could affect European government bond yields and stock prices, a robustness analysis was performed, which took fiscal and monetary policy announcements from the United States and the United Kingdom into account. In this variant of the model, the qualitative results do not change except for the fact that the reactions for government bonds are all insignificant after monetary policy decisions.

Table 2

Effects of economic policy announcements on ten-year government bond yields and on stock market indices

Event ¹	Average yield change in percentage points (coefficient)	Average change of stock indices in percentage points (coefficient)
Base model		
Monetary policy announcements	0.01	-2.58**
National and EU-wide fiscal policy announcements	0.03**	1.20*
National and Europe-wide macroprudential announcements	-0.03**	-3.37**
Variant 1		
Monetary policy announcements	-0.01*	-2.06**
National and EU-wide fiscal policy announcements	-0.05*	1.23**
Announcements regarding future government debt ²	-0.20*	1.84*
National and Europe-wide macroprudential announcements	0.01*	-3.29**
Variant 2		
Monetary policy announcements	-0.01	-2.18**
EU-wide fiscal policy announcements	0.02	1.60**
National fiscal policy announcements	0.11	-0.41*
Announcements regarding future government debt ²	-0.22*	2.31**
Europe-wide macroprudential announcements	-0.06**	-3.35**
National macroprudential announcements	-0.01*	0.45*

* Significance level 80 percent

** Significance level 90 percent

¹ Value 1 on event day, otherwise 0² March 20, 2020: Suspension of EU fiscal rules; March 23, 2020: Germany suspends the black zero policy

Green= stabilizing effect; red= no stabilizing effect; without color= no significance

Legend: Monetary policy announcements did not have stabilizing effect on average. They led to stock prices sinking by two percentage points on average and only minimally drove yields upwards.

Source: Authors' own calculations.

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The model's estimation results show that the monetary policy measures announced by the ECB did not, on average, have an immediate expansive effect on bond and stock markets. For example, monetary policy announcements did not lead to lower yields and increasing stock market indices. In all three model specifications, government bond yields on the event day showed no significant reaction after a monetary policy announcement, and equity indices even fell significantly by two percentage points (Table 2).¹¹

To determine which monetary policy announcement had the largest effect, the reactions of government bond yields to the individual ECB decisions in selected countries are observed. As in the panel analysis, country-specific bond yields showed little significant reaction to monetary policy announcements (Figure 1). Yields moved most strongly after the first announcement on March 12, 2020, especially for Italy and France. However, bond yields in these countries did not fall, but rose significantly, by between 15 and 23 basis points. Also the announcement of the PEPP on March 18, 2020, did not achieve any significant reduction in yields, except for French government bonds. With the third announcement on March 25, 2020, that the limitation on asset purchases

would be suspended, German government bond yields again have risen instead of fallen. Only the fourth announcement on April 30, 2020, to extend the PEPP until the coronavirus recession has been dealt with, had an interest rate reducing effect, but significantly only for Italian and Spanish bonds.

In regards to stock markets, the analysis confirms that not all monetary policy measures had short-term effects to the same extent (Figure 2). For example, the stock market indices in all countries observed fell on an event day significantly by a considerable ten to 15 percent. In addition, after the PEPP was announced on March 18, 2020, the stock prices declined in all countries, although this decline was only significant for France and Germany. In contrast, the third monetary policy resolution of March 25, 2020, which announced the suspension of the limitation on asset purchases, had a stabilizing affect: The stock market indices increased by four percentage points on average.

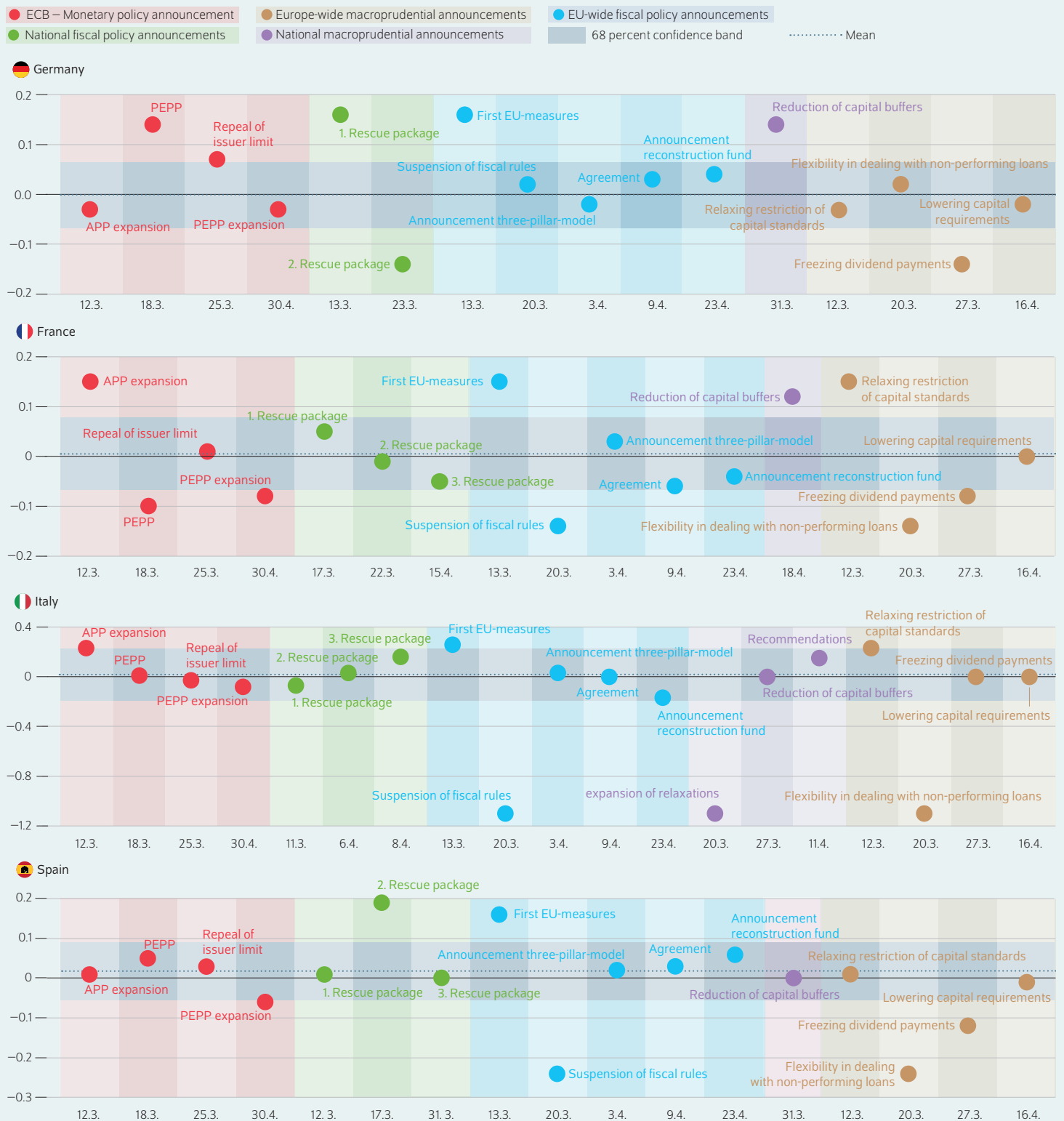
In summary, it can be determined that the expansive monetary policy measures of the ECB barely had an immediate stabilizing effect on financial markets until late May 2020. On the contrary, the sharp decline in stock prices following the first two monetary policy decisions points to a negative signaling effect for market participants. Financial markets were obviously disappointed by the relatively small

¹¹ The estimate does not take into account the scope of the respective measures announced. The values of the coefficients thus represent the average effect of an announcement.

Figure 1

Reactions of the bond markets to economic policy announcements in the euro area

Change to ten-year government bond yields in percentage points



Sources: Eurostat; authors' own calculations.

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The EU-wide suspension of deficit rules and the relaxation of banking regulations on March 20 were able to stabilize government bond yields the most.

monetary policy stimulus announced in the first ECB decision on March 12, 2020. However, it is notable that also the announcement of the strongly expansive PEPP increased government bond yields. One possible explanation is that due to already very low interest rates, investors no longer felt the need to realign their asset portfolios. Furthermore, the announcement of this very comprehensive set of ECB measures is likely to have sent a signal that the consequences of the coronavirus pandemic will be worse than feared.¹²

Fiscal policy: Suspending deficit rules allows yields to decline

The estimated results for fiscal policy measures also suggest that a stabilization of bond and stock markets has largely not been achieved.¹³ Government bond yields increased slightly on average—but significantly—following each announcement of fiscal policy measures (Table 2, Base model). If, on the other hand, the suspension of fiscal rules is excluded, a pattern emerges: While the long-term interest rate level rose following the announcement of the rescue packages, the suspension of fiscal rules had a strong downward and thus a stabilizing effect (Table 2, Variant 1). The comparison of the effect of fiscal policy announcements on national and EU-levels show that the yields are driven upwards, especially by announcements at a national level. The measures at the EU-level had a positive but not significant effect (Table 2, Variant 2).

The model results suggest the expansive fiscal policy measures had a positive effect on stock markets. For example, the stock indices of Germany, France, Italy, and Spain increased significantly—between 1.2 and 1.4 percentage points, respectively—following an announcement of fiscal policy measures. In contrast, announcements regarding fiscal rule suspensions had no significant effect on stock markets. Furthermore, the results show that EU-wide fiscal policy announcements in particular likely had a positive impact on stock markets.

Overall, the results indicate that national and EU-wide financial aid packages have stabilized stock markets but not markets for government bonds. Great uncertainty regarding how the measures would be financed could be one explanation. Although the EU fiscal rules allow for substantial new borrowing to stabilize the economy in severe crises,¹⁴ that alone most likely would not have been sufficient for the coronavirus recession.

German Economic Stabilization Fund leads to lower yields

The individual event analyses deliver a more detailed picture (Figures 1 and 2). The first national and EU-wide announcements tend to result in yield increases between 15 and 30 basis points. This indicates that financial market participants did not find these measures comprehensive enough.

With the lifting of the ECB's issuer limit and the suspension of the deficit rules, combined with the relaxation of macroprudential measures, supply and demand-side uncertainties on the bond market were mitigated. Government bond yields, with the exception of Germany, declined by 15 (France) and 100 (Italy) basis points on March 20, 2020, when the suspension of the deficit rules was announced. In Germany, due to the reconfirmation of the "black zero" policy (*schwarze Null*) two days earlier, it was further assumed the policy would not be suspended.¹⁵ However, it was scrapped on March 23, 2020, the day further major measures and a supplementary budget in the amount of 156 billion euros were announced—thus the suspension of the debt brake as well. German government bond yields fell by 15 basis points.

Even if suspending deficit rules would result in rising risk premia and yields,¹⁶ another explanatory approach seems plausible in this particular situation. On the one hand, experiences from the financial crisis of 2008-2009 may have taught the lesson that too strict an austerity policy, in light of the considerable economic losses, could also have serious social consequences for affected EU states in the medium term.¹⁷ On the other hand, with the German government's announcement to suspend the debt brake and do everything ("credit bazooka") in order to support domestic businesses and households, Germany in particular has emphasized its willingness to act and signaled at the European level to create an insurance union.

The EU Commission's measures show that none of the announcements had a significant effect on government bond yields. This could be due to the fact that, because of disagreements and many rounds of negotiations, it took too long for the EU Commission to present an approved package. For example, most national packages had already been decided upon two weeks before the EU package announcements. In addition, the total guaranteed amount in the national packages is approximately three times greater than the EU packages.

¹² Cf. Leonardo Melosi, "Signalling effects of monetary policy," *The Review of Economic Studies* 84, no. 2 (2017): 853–884 (available online).

¹³ Cf. also Stephanie Ettmeier, Chi Hyun Kim, and Alexander Kriwoluzky, "Financial Market Participants Expect the Coronavirus Pandemic to Have Long-Lasting Economic Impact in Europe," *DIW Weekly Report*, no. 19/20 (2020): 243–250 (available online).

¹⁴ For example, for Germany, that would currently be around 62 billion euros at the federal level.

¹⁵ Cf. Deutsche Welle, *Kabinett beschließt Rahmen für Haushalt ohne Corona-Krise* (March 18, 2020) (in German) (available online).

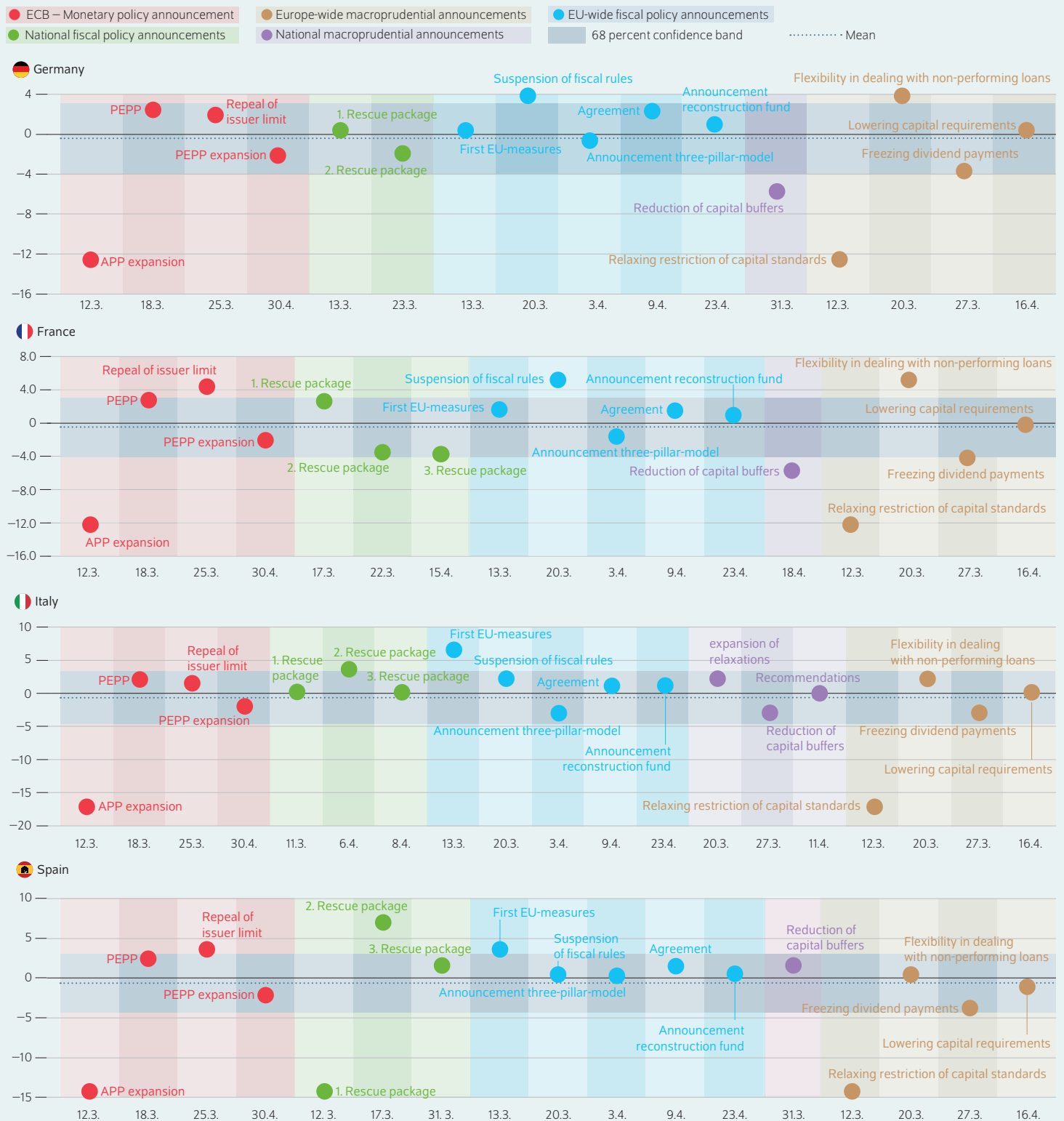
¹⁶ Stephanie Schmidt-Grohe and Martin Uribe, "Closing small open economy models," *Journal of International Economics* 61, no. 1 (2003): 163–185 (available online); Kerstin Bernoth and Burcu Erdogan, "Sovereign bond yield spreads: A time-varying coefficient approach," *Journal of International Money and Finance* 31, no. 3 (2012): 639–656 (available online).

¹⁷ For example, restrictive measures to reduce debt levels may also trigger a dangerous downward spiral, as decreasing GDP also reduces the ability to repay debts in the future. Cf. Olivier J. Blanchard and Jeromin Zettelmeyer, "Will Rising Interest Rates Lead to Fiscal Crises?," Policy Briefs PB17-27, Peterson Institute for International Economics (available online); Paul Krugman, *Can Europe Be Saved*, *New York Times* (2012) (available online; accessed on May 13, 2020).

Figure 2

Reactions of the stock markets to economic policy announcements in the euro area

Change of the respective FTSE stock index in percent



Sources: Macrobond; authors' own calculations.

EU-wide fiscal policy measures most frequently drove up the stock markets.

Relaxing banking regulations stabilizes government bond markets

The model results show the announcements of macroprudential measures had, on average, a stabilizing effect. Yields on ten-year government bonds of the countries observed declined only slightly, but significantly. This effect seems to primarily have been caused by Europe-wide macroprudential decisions. In principle, less stringent regulatory requirements give banks more leeway to expand their assets. If banks subsequently increase lending and the cost of borrowing falls, this stimulates aggregate demand,¹⁸ which benefits public finances through higher revenues and lower spending.¹⁹ The fact that government bond yields declined following the announcement of relaxed regulations also indicates that markets viewed it as real relief for the banking system. It is also conceivable that banks would use the leeway to, for example, invest in government bonds, which would lead to decreasing yields.²⁰

By contrast, the changes in banking regulations had a significantly negative effect on stock markets, with prices falling by between 2.5 and 3.2 percentage points on average. This may be related to the fact that relaxations of macroprudential measures has increasingly driven banks into bond investments that are considered risk-free, or that the significantly increased stock market volatility has deterred banks and other investors from buying shares. Investors' uncertainty could also have increased due to the announcement on March 27, 2020, when the ECB asked banks to freeze dividend payments.

It is noticeable that macroprudential announcements only have a positive effect on stock markets if they occur in combination with fiscal policy measures (Figure 2). For example, the simultaneous announcement of macroprudential and fiscal policy relaxations on March 31, 2020, in Spain was connected with an increase in prices. The March 20, 2020, announcements in Italy when banking requirements had been relaxed occurred at the same time macroprudential and fiscal policy measures at the EU level were announced, leading bond prices in Italy to increase. Bond yields also declined when fiscal policy and macroprudential measures were taken at a European level. For example, yields fell particularly sharply on March 20, 2020, when the ECB's third package of measures as well as further steps taken by national regulatory authorities and the suspension of fiscal rules at the EU level were announced.

18 For example, an expansion of lending is usually accompanied by a decline in savings and an increase in consumer spending by companies and households. Cf. Philip Turner, "Macroprudential policies, the long-term interest rate and the exchange rate," *BIS Working Papers* No. 588 (2016) (available online).

19 Cf. Ricardo Reis, "The Fiscal Footprint of Macroprudential Policy," (2020, forthcoming).

20 As government bonds are included with zero risk weights in asset valuations, banks may have a higher incentive to invest in bonds rated as low-risk in times of crises. Domestic government bonds are often considered for this purpose, cf. Dorothea Schäfer, "Government Bonds: European Banks Still Display Strong Home Bias: Requiring Capital Backing Could Worsen Problem," *DIW Weekly Report* no. 15/16 (2020): 217–228 (available online).

Conclusion: European insurance union could yield better results

Neither monetary policy nor fiscal policy announcements of rescue packages were able to significantly stabilize stock and bond markets. In terms of monetary policy, this could also be due to the fact that the scope for expansive policies is already quite minimal.²¹ Of the monetary policy measures, only the ECB's announcement to suspend the purchase limit of government bonds and the decision to extend the PEPP if necessary had a stabilizing effect on some of the countries observed. Nevertheless, it can be assumed that the generous supply of liquidity for the banking sector in the near future will help cope with the second-round effects of the pandemic, such as a shortage of credit provided to the real economy and an increasing amount of non-performing loans.

Of the fiscal policy measures, the suspension of fiscal rules was at least able to stabilize government bond markets. The announcement of the Economic Stabilization Fund in Germany on March 23, 2020, calmed both bond yields as well as stock prices. However, this was announced at the same time as the suspension of fiscal rules as well as Europe-wide macroprudential easing.

Already on their own, the announcement of the suspension of fiscal rules and the Europe-wide macroprudential relaxations are having a stabilizing effect on average; considered altogether, the effect is even greater. This could indicate that in times of crises, many market participants find easing regulations to support the real economy more effective than regulating the banking sector or a debt brake, even if the long-term effects of such easings are unknown.

In particular, simultaneous announcements of macroprudential relaxations and fiscal policy measures on a European level led to an increase in stock prices and a decline in government bond yields. This shows that at least in the short term, following the last major economic crisis in 2008-09, implementing macroprudential instruments in crisis situations can stabilize the financial system.

The European fiscal rules and the banking union proved to be successful mechanisms for providing risk protection. In this context, it would be important to take the next steps in the banking union and, for example, implement a joint deposit insurance scheme.²² It would also be appropriate to improve national fiscal rules so that, for example, new debt to finance important investments for the future is not limited.²³

21 Cf. Kerstin Bernoth, Geraldine Dany-Knedlik, and Anna Gilbert, "ECB and Fed Monetary Policy Measures against the Economic Effects of the Coronavirus Pandemic Have Little Effect," *DIW focus* no. 3 (2020) (available online).

22 Cf. Marius Clemens, Stefan Gebauer, and Tobias König, "The Macroeconomic Effects of a European Deposit (Re-) Insurance Scheme," *DIW Discussion Paper* 1873 (available online).

23 Cf. Marcel Fratzscher, Alexander Kriwoluzky, and Claus Michelsen, "Gut investierte Schulden sind eine Entlastung in der Zukunft," *Wirtschaftsdienst* vol. 5 (2019): 307–329 (in German) (available online); Sebastian Dullien et al., "Weiter Denken: ein nachhaltiges Investitionsprogramm als tragende Säule einer gesamtwirtschaftlichen Stabilisierungspolitik," *Politikberatung kompakt* 151 (2020): 23 (in German) (available online).

The delays probably explain why the EU Commission's rescue package (three pillar model) announcements in April had no significant effect on financial markets. By the time the EU had agreed on a rescue package, most national measures had already been long decided. To be better prepared for future crises and to be able to react more quickly, a European mechanism should be created, which would likely have acted much faster in this crisis.²⁴ Such a mechanism could be a permanent stabilization fund or budget on the EU level that Member States pay into annually. The European Recovery Plan announced by the European Commission end of May 2020 could be a step in the right direction to a European insurance union.

24 Kerstin Bernoth and Philipp Engler, "A Transfer Mechanism as a Stabilization Tool in the EMU," *DIW Economic Bulletin* no. 1 (2013): 3–8 (available online); Ferdinand Fichtner and Peter Haan, "Europäische Arbeitslosenversicherung: Konjunkturstabilisierung ohne große Umverteilung der Haushaltseinkommen," *DIW Wochenbericht* no. 37 (2014): 843–854 (in German) (available online); Marius Clemens and Mathias Klein, "A stabilization fund can make the euro area more crisis-proof," *DIW Weekly Report* no. 22/23 (2018): 193–200 (available online); Guillaume Claveres and Marius Clemens, "Unemployment Insurance Union," *2017 Meeting Papers* no. 1340 (Society for Economic Dynamics: 2017) (available online).

Kerstin Bernoth is deputy head of the Macroeconomics Department at DIW Berlin | kbernoth@diw.de

Marius Clemes is a research associate in the Forecasting and Economic Policy Department at DIW Berlin | mclemens@diw.de

Geraldine Dany-Knedlik is a research associate in the Macroeconomics and the Forecasting and Economic Policy Department at DIW Berlin | gdanyknedlik@diw.de

Stefan Gebauer is a research associate in the Forecasting and Economic Policy Department at DIW Berlin | sgebauer@diw.de

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