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How has the macro-economic imbalances procedure worked in practice to improve the resilience of the euro area?

Euro Area Scrutiny

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Abstract

This paper analyses the effects of the implementation of the Macroeconomic Imbalance Procedure (MIP) on the macroeconomic performance of countries in the EU and the euro area. We find that the introduction of the MIP led to a decline in current account imbalances and private sector debt and credit flows, but that the overall effects are limited. To strengthen the MIP, we support the introduction of the Budgetary Instrument for Convergence and Competitiveness, i.e. a fund that pays grants, conditional on the implementation progress of economic reforms.

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CONTENTS

LIST OF ABBREVIATIONS

AMR	Alert Mechanism Report
BICC	Budgetary Instrument for Convergence and Competitiveness
CSR	Country-specific Recommendation
ECA	European Court of Auditors
EIP	Excessive Imbalance Procedure
EU	European Union
IDR	In-depth Review
MIP	Macroeconomic Imbalances Procedure
RSP	Reform Support Programme
SGP	Stability and Growth Pact

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EXECUTIVE SUMMARY

This paper analyses the impact of the Macroeconomic Imbalance Procedure (MIP) on the macroeconomic performance of the Member States of the European Union (EU) and of the euro area. Specifically, the paper addresses three objectives. First and foremost, we assess whether the EU and the euro area countries are now better equipped to prevent an economic crisis, due to the introduction of the MIP. Secondly, we consider whether the framework would have helped to avoid the emergence of imbalances in those six countries that required financial assistance during the global financial and European crises. Third, based on our results, we propose recommendations to make the prevention of unsustainable polices more effective. Part of the recommendations would involve a supranational fund.

Section 1 provides the introduction.

Section 2 outlines the Macroeconomic Imbalance Procedure and reviews the related literature. Afterwards, it describes the scoreboard indicators of the MIP in more detail.

Section 3 presents the empirical setup of the analysis. We analyse first the EU member countries, and then the euro area countries only. Each time, we establish a treatment and a control group to analyse whether the introduction of the MIP had an impact on the breach of the thresholds of the scoreboard indicators. We find that the introduction of the MIP led to fewer breaches of those scoreboard thresholds that predict financial and economic crisis: the current account balance, and private sector debt and credit flow. It is well established in the economic literature that the deterioration of these indicators worsens a crisis. We therefore infer that the improvement in these indicators put the countries in the EU and the euro area in better position to prevent a deep economic crisis. Since the financial assistance during the financial and economic crisis provided to the six EU countries was in three cases motivated by the need to recapitalise the banking sector, and in one case to assist in a balance of payment crisis, on the basis of our analysis we infer that parts of the financial assistance could have been avoided, should the MIP have been in place and enforced at the time. However, due to the existence of other imbalances, we cannot rule out that financial assistance would have been necessary anyhow.

Nevertheless, the introduction of the MIP did not lead to fewer breaches of the threshold for the majority of the 14 headline scoreboard indicators. One reason for this can be poor compliance with the country-specific recommendations underpinned by the MIP. Recently, in its "Economic Governance Review", the European Commission also reported that the degree of CSR's implementation has declined in last years. In order to increase CSRs compliance and the impact of the MIP, we therefore support the introduction and the implementation of the Budgetary Instrument for Convergence and Competitiveness (BICC). The fund would pay grants to countries that meet the requirements of the country-specific recommendations, adopted by the Council. This fund would increase both the implementation and the importance of the MIP and would mitigate the potentially adverse consequences of structural reforms during the transition period. Furthermore, we advocate to incorporate "green" environmental indicators into the scoreboard.

Finally, Section 4 concludes.

GENERAL INFORMATION

KEY FINDINGS

Based on an analysis limited to the indicators included in the "MIP scoreboard", we find that the introduction of the Macroeconomic Imbalance Procedure (MIP) has led to improvements in the current account balances and private sector financial indicators, in the euro area Member States and of the European Union. Since these indicators are important predictors of financial and economic crises, as well as contributors to their severity, the MIP contributes to a stable economic development, assuming that it is fully implemented and enforced. However, the introduction of the MIP did not lead to an improvement in the majority of the 14 headline indicators. In order to increase compliance with the country-specific recommendations, meeting their requirements could be rewarded by payments from a recently proposed fund, the "Budgetary Instrument for Convergence and Competitiveness". Furthermore, we suggest adding to the scoreboard indicators that can detect "green" imbalances, posing a risk to the environment and thus to the economy.

1. INTRODUCTION

The Global Financial Crisis of the years 2007/08 and the following deep economic crises in Europe had severe economic consequences for most households in the European Union (EU). The crises have been caused by imbalances in the financial sector, foremost in the US, the UK, Ireland, and the Netherlands. The financial crisis led to a drastic decline in external credit flows and strongly affected the real economy, not only in these countries, but in the whole EU. The following deep recession has worsened public finances in EU Member States and led to a sovereign debt crisis in the euro area. Therefore, the EU introduced the Macroeconomic Imbalance Procedure (MIP) in 2011, with the goal to carefully monitor economic developments in Europe and to detect potential imbalances early, in order to prevent them from causing another deep recession. In this paper, we address the question whether the implementation of the MIP has been so far successful in detecting imbalances and whether, consequently, the countries in the European Union are better equipped to prevent unsustainable economic developments in the future.

In order to address the question, we identify an empirical model for the EU. We build the model upon the 14 headline indicators of the MIP. We assume that these indicators play a major role in determining the policy responses by the EU and national policy makers under the MIP framework. While this is a strong assumption, it allows to focus the analysis on the relevance and the design of the MIP scoreboard. In order to estimate the impact of the MIP on the economic performance of the EU countries, we adopt a "difference-in-difference" approach. The construction of the treatment group follows the idea that macroeconomic imbalances are persistent and that countries subject to macroeconomic imbalances prior to the introduction of the MIP are more likely to breach the threshold afterwards than countries with fewer hypothetical breaches before 2012. Once we have established the treatment and the control group, we estimate whether the introduction of the MIP had an impact on the 14 headline indicators. The empirical analysis allows us to test whether countries in the treatment group performed significantly better under the MIP, compared to the performances of countries in the control group. We conduct the analysis for the EU and for the euro area.

Our results reveal a mixed picture. We find on the one hand that the introduction of the MIP has had a significant impact on the current account balance, private debt, and the labour market indicators in the EU member states. On the other hand, we find that the MIP had no significant impact on the majority of headline indicators. For the subsample of the euro area countries, we find that the current account balance, private credit flow and the labour market indicators are affected by the introduction of the MIP, while the majority of the indicators were, again, not significantly affected. For euro area countries, the improvement of the current account balance and the private sector credit flow and debt indicators came at a cost of a slight, but significant, increase in unemployment. This result suggests that improvements in the current account balance were accompanied by increases in unemployment.

The results are partly encouraging, because the MIP was successful in improving key indicators for a financial and economic crisis. Current account deficits are undermining macroeconomic stability, because importing more than exporting often, although not always, implies that the country has to take on credit. In case the debt is denominated in a foreign currency (as it often happens for EU member states that have not adopted the euro) , this foreign denominated debt makes the economy vulnerable to possible exchange rate depreciations, which make the debt service for firms more expensive, leading to high number of bankruptcies and thereby causing a deep economic contraction. In a seminal and widely cited study, Schularick & Taylor (2012) show that financial crises are associated with credit growth and that recessions are deeper if private debt is high. Given this background, our result that the MIP has led to fewer breaches of the indicator thresholds related to private debt for the EU and private credit flow for euro area countries is important. Next to these indicators, we also find that the

introduction of the MIP led to declines in the long-term unemployment rate and the youth unemployment rate. Both measures decreased in the EU and the euro area after their inclusion into the MIP main indicators, in 2015. Our results therefore indicate that the reform in 2015 was a useful extension of the scoreboard indicators, because they measure further important characteristics of an economy.

However, the results are only partly encouraging, because we find that for the majority of headline indicators the MIP did not lead to fewer breaches of the thresholds. This is the case for the EU as well for the euro area Member States. More precisely, for the external imbalances indicators, we do not find an improvement in the change of export market shares, the real exchange rate, and unit labour costs. Regarding the internal imbalances, we find that the treatment group of countries does not breach the thresholds for change in housing prices, government debt and total financial sector liabilities less often after the introduction of the MIP. In euro area countries, the threshold for the unemployment rate is even more often breached after the introduction of the MIP than before.

Our results corroborate the analysis presented in the document "Economic Governance Review," which was published by the Commission in February 2020. The document states that current account balances have improved. Here, the review distinguishes between current account deficits and surpluses. While the deficits have been reduced, the surpluses, especially in Germany, still exist. However, it also states that the MIP "*has not generated the political traction necessary to sustain reform ambition in Member States where imbalances persist*" (page 13). The argument is in line with the fact that 53 % of total country-specific recommendations based on the MIP where assessed as "limited/no progress" implementation (Hagelstam et al. 2019).

We interpret our results in the following way. The improvement in some indicators implies that the MIP would have helped to mitigate the effects of the financial crisis in 2007/08, if it were in place and enforced affectively. The persistence of further imbalances in the EU and in the euro area, together with the high number of MIP-based country-specific recommendations which have not been implemented, indicates that the introduction of the MIP did not render the EU and euro area countries immune against the next economic and financial crisis. This assessment also applies to the question whether the MIP would have prevented financial assistance which was given to Cyprus, Latvia, Greece, Ireland, Spain, and Portugal in the aftermath of the financial crisis. In three countries the financial assistance was motivated by and given to recapitalise the financial sector (Cyprus, Ireland, Spain) or to assist in a balance-of-payment crisis (Latvia). Since the MIP seems to lead to an improvement in current account imbalances, more specifically to smaller deficits that have to be financed by external credit, and to an improvement in the private debt indicators, we conjecture that it would have mitigated the height of the financial assistance to these countries. Due to the existence of other imbalances, we cannot rule out that the financial assistance would have been necessary anyhow.

The results that the MIP works for some indicators, but not for the majority, point to potential ways to improve the MIP. Firstly, in order to increase compliance, we suggest to couple country policy actions, when they are in line with the recommendations, with grants from a fund such as the BICC. Importantly, payments from the fund would also mitigate the potentially painful effects of structural reforms. Secondly, we endorse the suggestion made by the Commission in the Economic Government Review to cover "green" environmental indicators. The economic crises in the future could well be associated with environmental catastrophes, which disrupt the supply chains, trigger large migrations, or simply destroy a part of the wealth and capital stock.

The paper is structured in the following way. Section 2 reviews the related literature and describes the MIP and the 14 headline indicators of the scoreboard. In Section 3, we set up the empirical model and

present the results. Afterwards, we derive our policy recommendations from the analysis. The final section concludes.

2. LITERATURE REVIEW AND DESCRIPTIVES

This section first describes the setup of the MIP in more detail. Afterwards, we review some of the literature about the MIP. Finally, we introduce the main indicators included in our empirical model, the "MIP scoreboard indicators", and discuss the evolution of the scoreboard indicators for the EU countries.

2.1.   The Macroeconomic Imbalance Procedure

The MIP has been introduced at the end of the year 2011, following the economic turmoil caused by the financial crisis in 2007/2008 and its aftermath. It was motivated by one of the main lessons drawn from the Global Financial Crisis, whose severe repercussions had been aggravated by pre-existing financial and macroeconomic imbalances. The underlying idea of the MIP was to detect such imbalances and to correct them sufficiently early, in order to prevent and/ or mitigate future financial and economic crises. The crisis has also shown that an economic downturn in one or a few countries in the EU can rapidly spill over to other countries and has the potential to cause a recession in these countries as well. Consequently, there is need for a supranational organisation as the EU to monitor the financial and macroeconomic developments of its Member States, coupled with the right to intervene in case the imbalances become unsustainable.

The MIP is conducted on an annual basis and consists of the following parts. It begins with the publication of the "Alert mechanism report" (AMR). The AMR is based on a scoreboard of 14 headline indicators. These indicators cover three main areas: external imbalances and competitiveness, internal imbalances, and labour market indicators. The first area comprises indicators such as the current account balance, the real effective exchange rate, and export market shares. To determine the internal imbalances, the AMR examines the private sector credit flow and the private sector debt, as well as government debt. In order to determine imbalances in the labour market, the AMR monitors the activity rate, the long-term unemployment rate, and the youth unemployment rate. We will describe all indicators in detail in Section 2.3.1. In the case a member State breaches the indicator-specific thresholds, it could be submitted to an "in-depth review" (IDR). The identification of macroeconomic imbalances has been based on the likely magnitude of risks involved, their evolution over time, and whether there are already planned or enacted policies to counter the imbalances.

The IDR is a country-specific economic analysis, aimed at identifying the nature and severity of the macroeconomic imbalances. The outcomes of the IDR range from "no imbalances" and "imbalances" to "excessive imbalances" and "excessive imbalances with corrective action". If the report asserts that imbalances exist, it starts the process of "specific monitoring", which involves an intensified dialogue with national authorities.

In case the IDR attests "excessive imbalances with corrective action", it triggers the "Excessive Imbalance Procedure" (EIP). The EIP requires that countries submit a corrective action plan, which should set out how the country plans to correct the imbalances. The implementation of the plan is subsequently monitored by the Commission and the Council. Euro area Member States may be penalized with financial sanctions. So far, no country has been subject to the EIP. For a further description, we refer the reader to a background note provided by the European Commission (2016).

2.2. Literature review

The literature on the MIP either investigates the quality of the scoreboard indicators, which are at the basis of the AMR, or is concerned about the enforceability of the MIP, i.e. whether countries follow the recommendations made in the Country-Specific Recommendations.

The quality of the scoreboard indicators was first criticized by Gros & Giovannini (2014). The authors point out that most indicators are backward looking. Instead, in order to predict and prevent a crisis, the indicators should be more forward looking. A forward-looking nature, the authors argue, would also make it easier for policymakers to address them directly. Miron & Alexe (2014) consider one indicator, the current account balance. They argue that for Central and Eastern European countries the indicator should allow for more flexibility. Boysen-Hogrefe, Jannsen, Plödt, & Schwarzmüller (2014) analyse the early warning properties of the scoreboard indicators. The authors find that especially house prices, private debt and credit flow constitute good early warning indicators for a financial and economic crisis.

Domonkos, Ostrihoň, Šikulová, & Širaňová (2017) also consider the relevance of the MIP scoreboard indicators by analysing their predictive power for an economic crisis. They find that especially activity rates, youth unemployment rates and private sector debt are good predictors for a crisis. García & Bengoechea (2018) concentrate on predicting a sovereign debt crisis, or more precisely sovereign yield spreads. They find that the scoreboard indicators can indeed explain the behaviour of sovereign spreads two, three, and four quarters in advance. Siranova & Radvanský (2018) assess the quality of the indicators and the corresponding thresholds for Central and Eastern European Countries. The authors find that the external imbalance indicators exhibit a good predictive power. Given the results of the other studies, Erhart, Becker, & Saisana (2018) consequently conclude that there is no agreement in the literature on whether the indicators have a good predictive power and suggest several ways to improve them.

Another strand of research is concerned with the effectiveness of the MIP on national policies. A foremost question is how the European Commission can enforce a change in national policies. So argue Gros & Busse (2013) that the MIP has no effect on German politics. Moschella (2014) assesses the potential effectiveness of the EU relative to the IMF surveillance. The paper finds that the EU MIP has advantages over the IMF's surveillance in terms of the provision of clear and practical advice, knowledge of domestic politics and the introduction of mechanisms that facilitate the activation of sanctions by the Commission. Neither the EU MIP nor the IMF, however, provide for mechanisms to prevent political considerations, e.g. in the Council or the Commission, from interfering with the activation of sanctions and the distribution of the burden of adjustment within a country`s economy and over time.

Bricongne, Turrini, & Garcia (2019) investigate whether the MIP affect the country-specific-recommendations compliance score. The authors consider both arms of the MIP, the preventive one and the corrective one. The preventive arm helps countries to adopt good policies that would enhance economic development. The corrective arm aims to correct policy failures and address major macroeconomic risks. The finding of the paper is that the MIP imbalance category has a positive impact on a country`s compliance score. The authors state that the pressure induced by the MIP classification is the reason for the increased compliance. Thus, the MIP seems to have an effect on the national policy, even without the EIP being put in place. A related result is established by Darvas & Leandro (2015). The authors find a higher level of implementation for CSRs that are related to the SGP, followed by MIP-related CSRs. However, in a recent paper, Efstathiou and Wolff (2018) show that the implementation of recommendations by EU countries has worsened in the last years. This finding is corroborated by

Hagelstam et al. (2019), who show that the share of Member States that make limited or no progress in the implementation of the MIP-CSRs increased from 17% in 2012 to 53% in 2018.

The European Court of Auditors (ECA) published in 2018 a special report on the MIP (European Court of Auditors, 2018). In this report, the ECA points out that the classification of Member States lacks transparency, that the IDR has become less visible, that the CSRs do not stem from specific identified imbalances, and that there is a lack of public awareness. Consequently, the report suggests to link the CSR to specific imbalances, to clearly characterize the severity of the imbalances and to trigger an excessive imbalance procedure if necessary, to include fiscal recommendations in the MIP, to separate the IDR from the country reports, and to give greater prominence to the MIP by improving communication aspects.

In February 2020, the European Commission published the "Economic Governance Review". The review states that the introduction of the MIP was important, because it complemented other surveillance instruments, such as the SGP, and provided the basis for prioritising policies not dealt with by the SGP. However, the MIP so far did not sufficiently encompass new economic challenges related to environmental pressures. The review also sets out that the MIP did not generate the political traction necessary to sustain reform ambition in EU Member States. In line with Hagelstam et al. (2019) the review states that the implementation of MIP-related recommendations has over time become comparable to that of non MIP-related recommendations. Consequently, the review calls for incentives in the future for member states to comply with the CSR and to implement reforms. One way could be that the Commission makes full use of the MIP instruments, such as the EIP.

In this paper, we address the question whether the implementation of the MIP has improved the economic performance of the countries in the EU and the euro area, such that fewer thresholds of the scoreboard indicators are breached. Although the indicators are not policy objectives, they are useful in detecting macroeconomic imbalances early on, as the literature has shown.

2.3. Evolution of scoreboard indicators

We now focus on the 14 main scoreboard indicators and investigate their average evolution over time to obtain an impression of the main imbalances at the aggregate level. Then, we compute how often countries breached the thresholds.

2.3.1. Scoreboard indicators

The 14 main scoreboard indicators and their thresholds (in brackets) are:

External imbalances and competitiveness:

1. 3-year backward moving average of the current account balance as percent of GDP (- 4/6%);
2. net international investment position as percent of GDP (- 35%);
3. 3-year percentage change of the real effective exchange rates based on HICP/CPI deflators, relative to 41 other industrial countries (± 5% - EA countries, ± 11% - non-EA countries);
4. 5-year percentage change of export market shares measured in values 3-year percentage change;
5. nominal unit labour cost (9% - EA countries, 12% - non-EA countries).

Internal imbalances:

6. year-on-year changes in house prices relative to a Eurostat consumption deflator (6%)
7. private sector credit flow in % of GDP (14%)
8. private sector debt (consolidated) in % of GDP (133%)
9. general government sector debt in % of GDP (60%)
10. 3-year backward moving average of unemployment rate (10%)
11. year-on-year changes in total financial sector liabilities (16.5%)
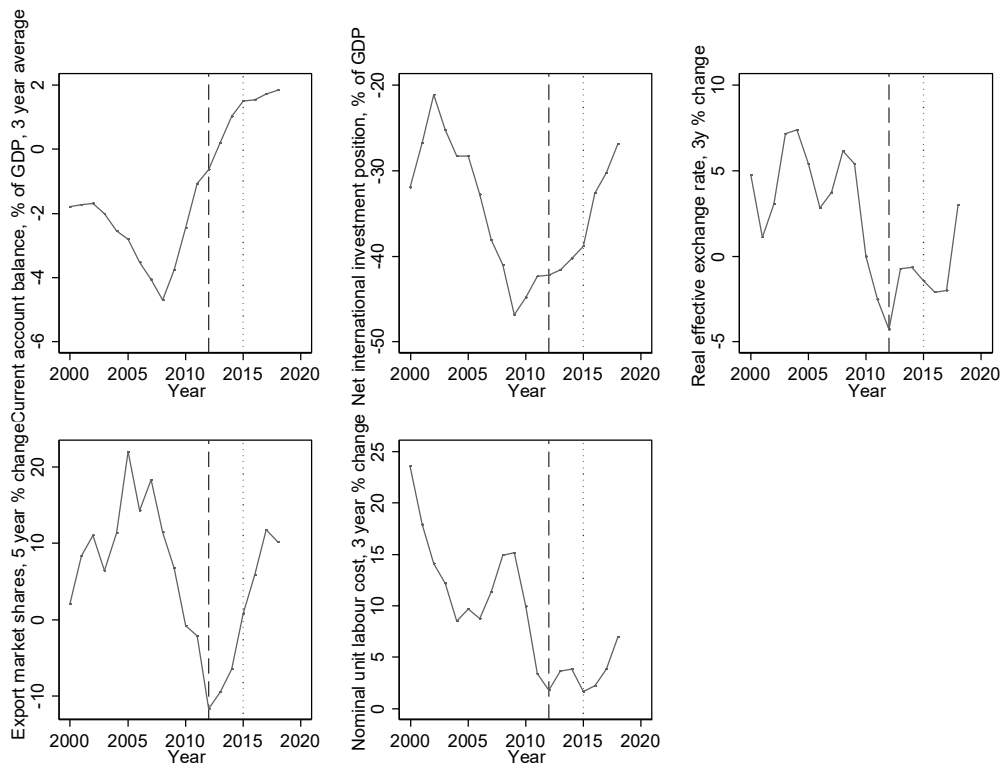
Labour market indicators:

12. 3-year change in p.p. of the activity rate (-0.2 pp)
13. 3-year change in p.p. of the long-term unemployment rate (0.5 pp)
14. 3-year change in p.p. of the youth unemployment rate (2.0 pp).

Figure 1 shows the arithmetic means of the external imbalances and competitiveness indicators across countries from 2000 until 2018. For most indicators, there is an increase. It mostly starts around the introduction of the MIP in the year 2012, which is indicated by the vertical dashed line. This upward movement since then is particularly evident for the real effective exchange rate, export market shares, and nominal unit labour cost indicators. For the indicators of current account balances and the net international investment position, the average trough was reached some years before 2012.

Figure 2 shows the arithmetic means of the internal imbalances' indicators across countries since 2000. Most measures improved following the introduction of the MIP. Private sector credit flows are substantially lower than in the earlier years, and private as well as public debt ratios are on a clear downward trajectory. The unemployment rate, which was assigned to the second set of internal indicators at the instalment of the MIP and which was complemented later on by a third set of indicators for labour markets, declines steadily since 2012, although the three-year moving average shows this with some delay. Total financial sector liability growth ticks up slightly in recent years, but is still far below its level in the years 2000.

Taken together, Figures 1 and 2 suggest that the decline in the current account and the net international investment position before and during the crisis's years reflects the accumulation of private debt. The subsequent increase, in turn, seems to be first driven by a collapse in domestic demand, as suggested by the sharply increasing unemployment rate, and then later on by a moderation of private and public debt accumulation, which levelled off in recent years. The compression of domestic demand can also be seen from Figure 3, which shows the evolution of the averages of the labour market indicators. They were added to the MIP in 2016. 2016 is indicated in the figure by the dotted line, while the dashed line shows the introduction of the MIP with its initial 11 indicators in 2012, as before. All labour market indicators worsened during the crisis's episodes. They started to improve from 2011/12 onwards and continued on their paths towards higher activity and lower unemployment rates in recent years.

Figure 1: Evolution of external imbalances and competitiveness indicators.

Source: Own calculations, Eurostat.

Figure 2: Evolution of external imbalances and competitiveness indicators.
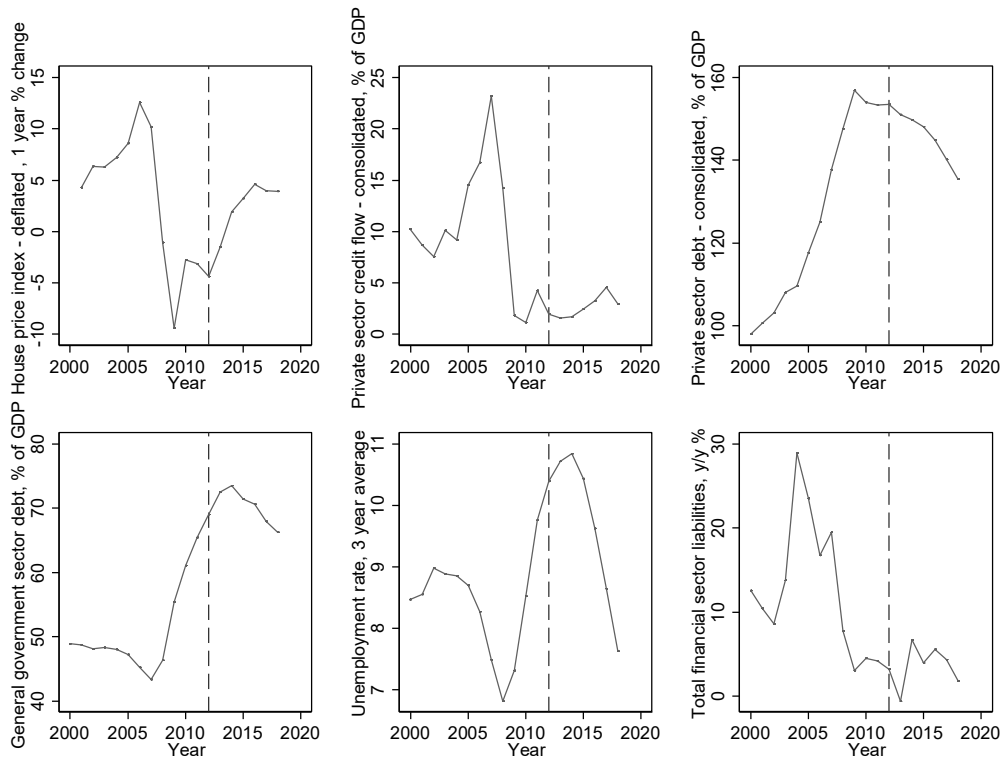
Source: Own calculations, Eurostat.

Figure 3: Evolution of labour market indicators.
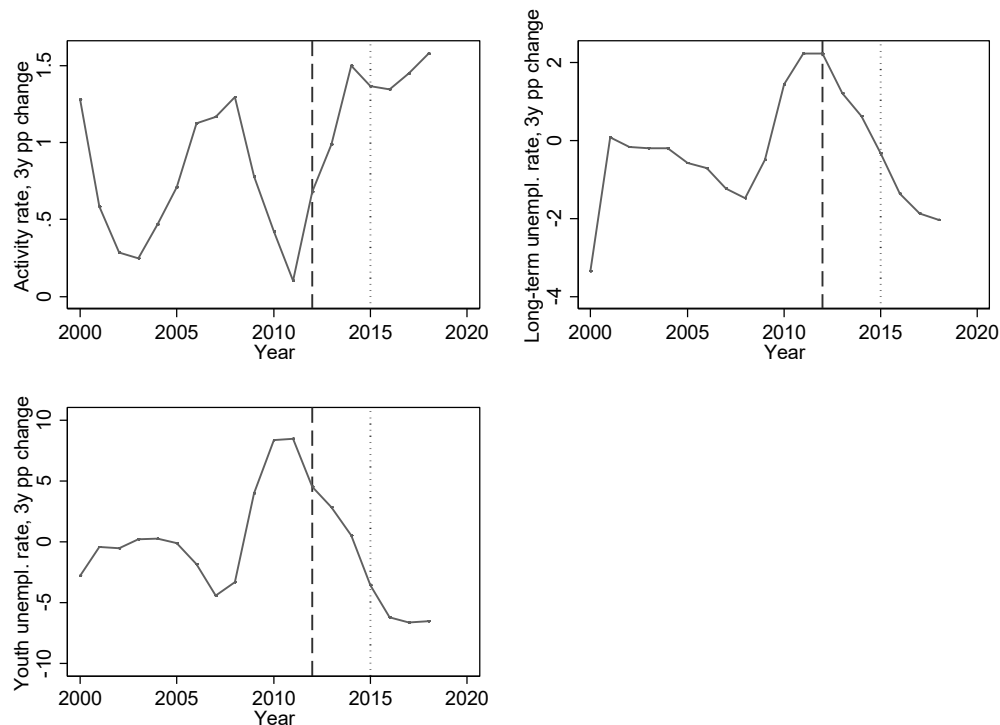
Source: Own calculations, Eurostat.

2.3.2. Country performances

While there is a general improvement in most indicators on average, countries have performed quite differently during both the Global Financial Crisis and the European sovereign debt crisis. This is evident from Figure 4, which shows the total number of threshold breaches ("flags") across the 14 main indicators over time by country. For the years prior to 2012 (and 2016 for the labour market indicators), these breaches are hypothetical, because the MIP was not in place (or did not include these indicators). Similar to the evolution of the macroeconomic indicators themselves (see Figures 1 to 3), there is a general tendency of worsening during the two crises and an improvement afterwards.

However, there is also quite some country heterogeneity as regards the level of total flags. Austria, the Netherlands, or Slovenia, for example, have a relatively low number of flags before the crises and the introduction of the MIP. In contrast, Estonia, Hungary or Portugal consistently breached the hypothetical thresholds for three or more indicators before 2012. The dynamics post-2012 are also heterogeneous. The number of flags declines substantially for Portugal, Spain, and Romania, for example, whereas it remains largely constant for countries such as Austria, Germany or the Czech Republic. All in all, the graph suggests that the number of (hypothetical) threshold breaches has declined with the introduction of the MIP. But the initial starting point and the speed of decline differ markedly across countries.

Figure 4: Total number of threshold breaches by country.
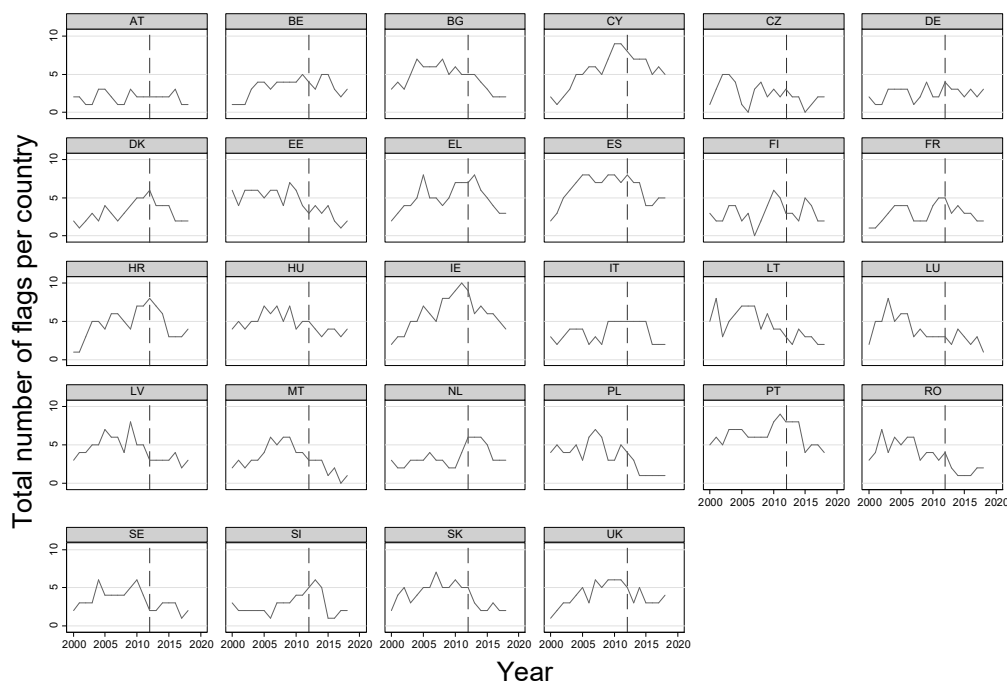
Graphs by Country identifier

Source: Own calculations, Eurostat.

3. EMPIRICAL MODEL AND RESULTS

In this section, we start by describing the empirical model used to evaluate the effectiveness of the MIP framework. Then, we present the main estimation results, before conducting a sensitivity analysis. The data used in the analysis are all 14 main scoreboard indicators, as defined above and downloaded from Eurostat. Most of the time-series start in 1995. They all end in 2018. This yields a panel data set with about 400–600 yearly observations, depending on the variable under consideration.

3.1. Empirical model

We use a difference-in-difference strategy to identify the effect of the MIP. We compute the different macroeconomic performance of countries with a high likelihood of being affect by the MIP before and after the introduction of the surveillance mechanism and compare it to the macroeconomic performance of countries with a low likelihood of being affect by the MIP over the same period. This requires three ingredients. First, we require a definition of the treatment period. We use the years from 2012 onwards for the external and internal indicators and the years 2016 and subsequent ones for the labour market indicators. Second, we need to measure macroeconomic performance. Here, we closely follow the MIP framework and investigate the evolution of the 14 main scoreboard indicators, as they are measured in the scoreboard. Although these indicators are not policy targets, they allow to shed light on the economic dimensions along which the MIP works and along which it does not. Third, we need to define a treatment and a control group. For this, we exploit the fact that macroeconomic country characteristics are persistent. Hence, countries that perform poorly according to the MIP criteria before 2012, are likely to be affected most by the surveillance framework post 2012.

For example, a country with high unemployment rates in the period 1995-2011 is likely to have relatively high unemployment rates in the period 2012-2018 as well, compared to a country with lower

unemployment rate in prior to 2012. Unemployment rate consist of two components, a cyclical and a structural factor. The cyclical factor will fluctuate similarly in both countries and periods, due to common factors, such as a common monetary stance for euro area countries, the external value of the currency or global economic cycles. The structural component, on the other hand, largely reflects labour market institutions, such as employment protection, unemployment benefits, or active labour market policies. These institutions change only slowly over time. Hence, a country with high unemployment before 2012, is likely to have higher rate after 2012 as well, because the labour market institutions are persistent.

The question then is whether the instalment of the MIP leads to a stronger decline in unemployment rates post 2012 in the country with initially higher unemployment than in the country with initially lower unemployment rates. The effect can come to pass through several potential channels. First, the country might (partially) adhere to the country-specific recommendations implied by the surveillance framework and (partially) implement the suggested reforms. Second, the mere presence of the MIP could induce countries to reform because they would like to reduce the likelihood that they breach the thresholds, become classified as having imbalances, and have to follow the country-specific recommendations, which may not perfectly align with their preferred way of addressing the underlying sources of misalignment. Third, political peer pressure and increased visibility of national policies at the European level through the MIP could incentivise national governments to act pre-emptively.

At the heart of the identification strategy is the assumption that the evolution of the indicator under consideration in both country groups would have been the same in the absence of the MIP. Then, any differential between countries from before to after the introduction of the MIP can be attributed to the MIP. In other words, the treatment in form of the MIP induces deviations of the affected countries from the common trend. At the end of the analysis, we test this assumption. The level of the indicators under consideration can differ between countries. Econometrically, this difference will be absorbed by a country specific constant that capture time-invariant institutional or political factors of individual countries.

To construct the treatment group, that is the set of EU countries that is most affected by the MIP, we compute the total number of hypothetical flags across all 14 main scoreboard indicators before 2012. The idea is that this number reflects structural country characteristics, such as institutions or economic structures that are unlikely to change within a few years. For example, countries with a small manufacturing sector might have persistently lower export market shares compared to countries with a large manufacturing sector. Similarly, countries with rigid and potentially fragmented labour markets are likely to have higher general and/or youth unemployment rates both before and after the introduction of the MIP.

Moreover, these structural country characteristics can be expected to be positively correlated across indicators. For example, countries with more rigid labour markets are typically less competitive and have higher unemployment rates, lower activity rates and both lower export market shares and current account balances. Moreover, current account deficits typically go hand-in-hand with other maladjustments, such as excessive private or public debt accumulation, a negative net international investment position, or real exchange rate misalignment. This is corroborated by the average correlation among the total number of hypothetical flags per indicator before 2012, which is 0.2. Hence, countries with a high total number of hypothetical flags across indicators in the period before 2012 are likely to be affected most by the MIP regarding all 14 indicators of the scoreboard. As this correlation is not very high, we show in the Annex that the main results are robust to using indicator-specific definitions of treatment and control groups.

Figure 5 shows the composition of the treatment and the control groups. They are identified according to the total number of flags summed over the 14 main scoreboard indicators and the years prior to 2012. The median number of hypothetical flags is 62.5. Thus, the 14 EU countries with 63 or more hypothetical flags are the treatment group. They are shown in the upper panel. The remaining countries, with 62 or fewer hypothetical flags, are the control group. They are shown in the bottom panel. The treatment group mostly coincides with the general notion of peripheral countries with weaker macroeconomic fundamentals and less efficient political institutions, which have been hit hardest by the global and the European crises. The control group, instead, contains many Member States that are often referred to as core countries, with competitive external sectors and more efficient political and economic institutions. There are some exceptions to this general pattern. Luxembourg, for example, is borderline in the treatment group and Italy borderline in the control group. The former country, however, has persistently breached current account, exchange rate and private credit and debt thresholds. In the latter, the threshold breaches cluster in the government debt and labour market indicators.

In a sensitivity analysis, we define indicator-specific treatment and control groups. There, we compute the number of hypothetical flags before 2012 (or alternatively 2008) per indicator and year and divide the country sample in two at the median number of flags for each indicator. This yields different treatment and control groups for each indicator. The average correlation between the treatment group definitions across indicators is 0.25, reflecting that the number of hypothetical flags per indicator is positively correlated within countries. In other words, countries with many hypothetical flags for one indicator are more likely to have more hypothetical flags for another indicator as well, and are therefore more likely to be in several of the indicator-specific treatment groups and in the treatment group defined by aggregating over all hypothetical flags across indicators.

Figure 5: Treatment and control group defined according to total number of hypothetical flags prior to 2012 across 14 main scoreboard indicators.
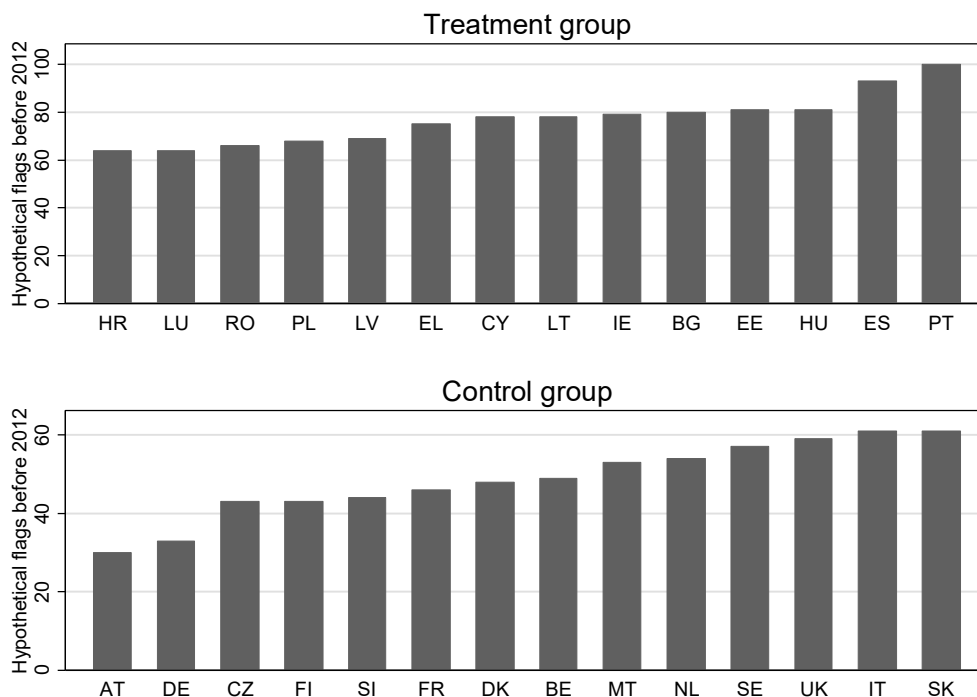
Source: Own calculations, Eurostat.

We construct a binary indicator T_i that equals one if country i belongs to the treatment group, and zero otherwise. The baseline estimation equation is:

$$y_{it} = \alpha_i + \beta_t + \gamma(T_i * D) + X'_{it}\delta + \varepsilon_{it},$$

where y_{it} is one of the 14 main scoreboard indicators for country i in year t, α_i are country fixed effects, β_t are year fixed effects, D a dummy indicator equal to one for the years 2012-2018 when considering the internal or the external indicators and equal to one for the years 2016-2018 when looking at the labour market indicators, and X_{it} is a set of control variables. γ is a parameter to be estimated. It measures the impact of the MIP on the dependent variable. The variable ε_{it} is an error term, which we adjust for (common) autocorrelation and heteroskedasticity across panels using a feasible generalized least squares estimator. The control variables differ across specifications. We correct for country-specific trends, for all lagged scoreboard indicators that are not within the same category as the indicator under consideration (for example, when y_{it} is the current account balance, which is part of the external and competitiveness indicators, then the control variables include all external and labour market indicators lagged by one year), or we maintain these indicator-set specific control variables and additionally interact them with an indicator variable equal to one for the years 2012 onward, and zero otherwise.

3.2. Estimated impact of the macroeconomic imbalance procedure

In this section, we present the estimated impact of the MIP based on the difference-in-difference approach outlined above. Panel (a) of Table 1 shows the baseline regression results for the five external and competitiveness indicators. They are based on a simple model with time and year fixed effects and no further control variables. The results suggest that the MIP has a significant impact on the current account balance. The point estimate in column (1) is positive with value 0.78 and, given a standard error of 0.36, statistically significant at the five percent level. The estimate suggests that, on average, the current account balance is 0.8 percentage points of GDP higher in the treatment group after the introduction of the MIP than before, relative to the change in the current account balance in the control group over the same period. The relatively high Chi-squared statistic in column (1) at the bottom of the panel of 701.81 indicates that the model describes the data well. The test statistic corresponds to the null hypothesis that all parameters of the model are jointly equal to zero. This is strongly rejected by the data, suggesting a good fit.[1]

For the other indicators, there is no improvement. At a first glance, column (4) suggests that the impact of the MIP on the export market share is negative. However, this counterintuitive result is not robust, as we show below, so that we will not interpret it further. Moreover, it needs to be kept in mind that the real effective exchange rate has both an upper and a lower threshold. Hence, the non-significant result is consistent with a reduction of threshold breaches post 2012, but which entails both appreciations and depreciations that cancel out on average. The same argument potentially holds for the current account balance indicator, which also has two-sided thresholds. But the significant impact implies that increases in the current account dominate the average effect. In a sensitivity analysis, we account for this two-sided threshold and show that the results hold. Nevertheless, the finding of a positive impact might be of concern because it suggests that on average current account balances, including those of excessive surplus countries, have increased.

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[1] The table does not show the more familiar R-squared statistic as in standard ordinary least squares, as this measure of fit is not well-defined for generalized least squares estimation.

Panel (b) contains the results for the internal indicators. They suggest that the MIP has a significant negative impact on private sector credit flow, private sector debt and financial sector liabilities. They also indicate a positive impact on the unemployment rate. As we show below, only the impact on private sector credit indicator and the unemployment rate are robust. The coefficients in column (3) and (5) imply that the introduction of the MIP led to an average decline in the private sector debt level of 4.6 percentage points of GDP in the treatment group from pre- to post-2012, relative to the decline in that indicator in the control group over the same horizon, and to an increase of 0.5 percentage points in the unemployment rate, respectively. Finally, panel (c) presents the results for the labour market indicators. They suggest strong effects, in particular for long-term and youth unemployment rates, which drop by about 2 and 3 percentage points for the treatment group in the evaluation period, relative to the change in the control countries.

Table 1: Estimated impact of MIP – baseline regression results.

Panel (a): External and competitiveness indicators

Model	(1)	(2)	(3)	(4)	(5)
Dependent variable	Current account balance	International investment position	Real effective exchange rate	Export market share	Unit labour costs
Impact MIP	0.78**	-1.90	-0.87	-6.01***	-4.18
	(0.36)	(2.19)	(0.95)	(2.01)	(5.71)
Observations	523	536	616	463	597
Chi2	701.87	938.43	626.72	724.23	39.04

Panel (b): Internal indicators

Model	(1)	(2)	(3)	(4)	(5)	(6)
Dependent variable	House price index	Private credit flow	Private sector debt	General government debt	Unempl. rate	Financial sector liabilities
Impact MIP	1.31	-3.07***	-4.60**	1.26	0.51*	-6.36***
	(1.18)	(1.02)	(1.87)	(1.26)	(0.29)	(1.58)
Observations	467	653	656	660	572	630
Chi2	319.81	487.04	2275.04	1870.51	431.26	418.48

Panel (c): Labour market indicators

Model	(1)	(2)	(3)
Dependent variable	Activity rate	Long-term unempl. rate	Youth unempl. rate
Impact MIP	0.65***	-1.88***	-2.88***
	(0.25)	(0.31)	(1.03)
Observations	561	437	586
Chi2	126.75	227.49	306.64

Notes: The table shows the estimated impact of the macroeconomic imbalance procedure on the 14 main indicators of the macroeconomic scoreboard. All models contain country and year fixed effects. Standard errors adjusted for autocorrelation and heteroskedasticity are in parentheses (* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$).

To assess the robustness of the results, we conduct several sensitivity tests. First, we add country-specific time-trends to the model. Although, in theory, the dependent variables are all stationary, it could be that the data appear as if they had trends in our relatively short sample. Panel (a) of Table 2 shows that the impact of the MIP on the current account remains positive and statistically significant at the 5% level. The point estimate actually increases from 0.8 to 1.8. In addition, the effect on the net international investment position now appears as being significant. In contrast, the counterintuitive negative effect on the export market share vanishes.

Table 2: Estimated impact of MIP – controlling for country-specific time-trends.

Panel (a): External and competitiveness indicators

Model	(1)	(2)	(3)	(4)	(5)
Dependent variable	Current account balance	International investment position	Real exchange rate	Export market share	Unit labour costs
Impact MIP	1.80***	7.95***	-0.44	-1.83	4.85
	(0.42)	(2.15)	(1.06)	(2.20)	(6.89)
Country trends	yes	yes	yes	yes	yes
Observations	523	536	616	463	597
Chi2	2169.36	4600.16	906.65	1722.61	116.39

Panel (b): Internal indicators

Model	(1)	(2)	(3)	(4)	(5)	(6)
Dependent variable	House price index	Private credit flow	Private sector debt	General government debt	Unempl. rate	Financial sector liabilities
Impact MIP	1.96	-1.02	-6.83***	0.67	1.14***	0.18
	(1.68)	(1.33)	(1.91)	(1.24)	(0.32)	(2.26)
Country trends	yes	yes	yes	yes	yes	yes
Observations	467	653	656	660	572	630
Chi2	568.71	691.98	4867.00	6301.79	8800.84	594.21

Panel (c): Labour market indicators

Model	(1)	(2)	(3)
Dependent variable	Activity rate	Long-term unempl. rate	Youth unempl. rate
Impact MIP	0.36	-1.96***	-5.21***
	(0.28)	(0.41)	(1.26)
Country trends	yes	yes	yes
Observations	561	437	586
Chi2	303.26	267.90	364.68

Notes: The table shows the estimated impact of the macroeconomic imbalance procedure on the 14 main indicators of the scoreboard when controlling for country-specific time trends. All models contain country and year fixed effects. Standard errors adjusted for autocorrelation and heteroskedasticity are in parentheses (* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$).

Panel (b) of Table 2 contains the estimates of the MIP impact on the internal indicators when controlling for country-specific trends. Only the impacts on private sector debt and the unemployment rate remain statistically significant. The effect on private credit flow and financial sector liabilities instead turns non-significant. Panel (c) of Table 2 presents the findings for the labour market indicators as dependent variables. They show the clearest pattern. The effect on both the long-term and youth unemployment rates is highly statistically significant. It is also economically relevant.

Next, we remove the country trends and instead add the dependent variable lagged by one year as additional regressor, to account for medium-run dynamics of the dependent variables. Table 3 contains the results. The dependent variable of each model is given at the top of the panels. In column (1) of panel (a), for example, the explanatory variables include country and year fixed effects, as before, and the current account balance lagged by one year (denoted by *Dependent, t-1*). Across all indicator categories, the lagged dependent variables are estimated to be highly persistent. In column (1) of panel (a), for example, the autocorrelation is 0.89. The point estimate is statistically significant at the one percent level. The finding of generally high persistence is consistent with the argument above, used to construct the treatment and control groups, that the macroeconomic performance of a country reflects underlying structural economic and political factors which are moving only slowly over time.

The estimated effects of the MIP are similar to the previous results. There is a significant impact on the current account, private sector debt as well as long-term and youth unemployment rates. The impact on the current account is again positive, while for private sector debt, as well as long-term and youth unemployment rates, the effect is estimated to be negative. The high explanatory power of the models, as indicated by the large R-squared, is reassuring as it suggests that the models capture the dynamics of the endogenous variables well. As we are using ordinary least squares now, the R-squared is well-defined and used instead of the Chi-squared statistic.

Table 3: Estimated impact of MIP – fixed effects with lagged endogenous variable.

Panel (a): External and competitiveness indicators

Model	(1)	(2)	(3)	(4)	(5)
Dependent variable	Current account balance	International investment position	Real exchange rate	Export market share	Unit labour costs
Impact MIP	0.66**	2.16	-1.20	-0.27	-1.83
	(0.28)	(1.85)	(0.92)	(1.67)	(7.05)
Dependent, t-1	0.89***	0.85***	0.66***	0.77***	0.49***
	(0.02)	(0.02)	(0.03)	(0.03)	(0.01)
Observations	495	508	588	435	569
R2 within	0.87	0.84	0.59	0.76	0.74

Panel (b): Internal indicators

Model	(1)	(2)	(3)	(4)	(5)	(6)
Dependent variable	House price index	Private credit flow	Private sector debt	General government debt	Unempl. rate	Financial sector liabilities
Impact MIP	1.01	-6.19***	-3.36**	0.90	-0.11	-5.62**
	(1.16)	(1.47)	(1.57)	(0.73)	(0.18)	(2.81)
Dependent, t-1	0.40***	0.10**	0.86***	0.92***	0.94***	0.16***
	(0.04)	(0.04)	(0.02)	(0.01)	(0.02)	(0.04)
Observations	439	625	628	632	544	602
R2 within	0.52	0.36	0.92	0.94	0.89	0.25

Panel (c): Labour market indicators

Model	(1)	(2)	(3)
Dependent variable	Activity rate	Long-term unempl. rate	Youth unempl. rate
Impact MIP	-0.26	-1.41***	-5.14***
	(0.27)	(0.39)	(1.07)
Dependent, t-1	-1.86***	2.60***	6.82***
	(0.16)	(0.25)	(0.56)
Observations	561	437	586
R2 within	0.33	0.54	0.54

Notes: The table shows the estimated impact of the macroeconomic imbalance procedure on the 14 main indicators of the macroeconomic scoreboard when controlling for the lagged endogenous variable. All models contain unreported country and year fixed effects. Standard errors are in parentheses (* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$).

Finally, we conducted two additional sensitivity analyses which are presented in the Annex. First, we control for all lagged scoreboard indicators that are not within the same category as the indicator under consideration. For example, when y_{it} is the current account balance, which is part of the external and competitiveness indicators, then the control variables include all external and labour market indicators (lagged by one year). Second, we maintain these indicator-set specific control variables and additionally interact them with an indicator variable equal to one for the years 2012 onward, and zero otherwise. In this way, we allow for a change in the relationship between the indicator variables with the introduction of the MIP. Both specifications reinforce the impression from the main results (see Table and Table A2). There is a significantly positive impact of the MIP on the current account balance and the unemployment rate. We also again find a negative effect on the export market share, on private credit flow as well as on long-term and youth unemployment rates.

3.3. The impact of the MIP on euro area countries

In this subsection, we estimate the impact of the MIP on the subset of euro area countries. We employ the same identification strategy as above but restrict the sample to those countries and years where a country is member of the common currency area, for both the construction of the treatment and control groups and the estimation. The assignment of the euro area countries to each group are essentially the same as before, with the exception of the Netherlands and Italy. The former is now in

the treatment group mainly due to its persistent current account balance breaches and the latter because of its permanently excessive government debt level.

By and large, the effect of the MIP on the scoreboard indicators in the subsample of euro area is similar to the estimated impact in the full sample of all EU countries. Regarding the external indicators, the effect on the current account and the international investment position is positive and statistically significant. For the internal indicators, we find a negative impact on private credit flow, but positive effects on government debt and the unemployment rate. Finally, concerning labour markets, the pattern is quite consistent with the evidence for the full sample. Long-term and youth unemployment rates are significantly lower under the MIP than before 2016, compared to the change in these indicators in the control group over the same period.

Table 4: Impact of MIP in euro area countries.

Panel (a): External and competitiveness indicators

Model	(1)	(2)	(3)	(4)	(5)
Dependent variable	Current account balance	International investment position	Real exchange rate	Export market share	Unit labour costs
Impact MIP	2.25***	6.50*	0.20	3.56	-1.00
	(0.44)	(3.36)	(0.72)	(2.23)	(1.01)
Observations	297	291	321	276	319
Chi2	1719.76	5580.95	2146.70	694.45	503.43

Panel (b): Internal indicators

Model	(1)	(2)	(3)	(4)	(5)	(6)
Dependent variable	House price index	Private credit flow	Private sector debt	General government debt	Unempl. rate	Financial sector liabilities
Impact MIP	-0.01	-4.57**	-2.27	5.27***	0.65**	0.47
	(1.45)	(1.86)	(2.87)	(1.40)	(0.30)	(1.66)
Observations	277	330	333	338	320	321
Chi2	422.10	501.19	7789.90	7650.72	872.34	605.54

Panel (c): Labour market indicators

Model	(1)	(2)	(3)
Dependent variable	Activity rate	Long-term unempl. rate	Youth unempl. rate
Impact MIP	0.17	-2.39***	-7.92***
	(0.36)	(0.42)	(1.35)
Observations	311	243	339
Chi2	224.21	355.08	344.49

Notes: The table shows the estimated impact of the macroeconomic imbalance procedure on the 14 main indicators of the scoreboard in the euro area when controlling for country-specific time-trends. All models contain unreported country and year fixed effects. Standard errors adjusted for autocorrelation and heteroskedasticity are in parentheses (* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$).

3.4.   Further sensitivity tests

In this subsection, we conduct further sensitivity tests. First, we control for the fact that formally the MIP does not apply to countries under macro-economic adjustment programs. Therefore, we drop all observations for countries and years when countries were subject to a program. In the years post-2012, these are Cyprus, Greece, Ireland, Portugal, and Spain. The MIP could still influence the performance of these countries when they are subject to a program, because they may want to avoid being classified as having imbalances when re-entering the MIP formally, but the impact of the MIP can be expected to be smaller, as the countries are not directly subject to the formal procedure during the program years. Table A3 in the Annex shows that the main results hold when excluding the program country-year observations. In particular, there is a statistically significant and positive impact of the MIP on the current account balance and statistically significant negative effects on private sector debt, long-term and youth unemployment rates.

Given that throughout the specifications the impact of the MIP on the current account balance and the long-term unemployment rate appears as most significant, we now focus on several tests for these two indicators. For this, we include a large set of control variables, namely, the lagged indicators of the other two categories and interaction terms of these variables with a post 2012 indicator variable. Moreover, we define the treatment and control groups using only data until 2007, thus excluding the global financial and European banking and sovereign crises. Furthermore, for the current account, we allow for the two-sided threshold by using as dependent variable a dummy indicator that is one whenever the current account in a given year breaches either the lower or the upper threshold, and zero otherwise. Thereby, deficits and surpluses obtain similar weight.

Panel (a) of Table A4 in the Annex focuses on the current account. The dependent variable is the just-described flag indicator. Column (1) shows that the MIP has a significant negative impact on the likelihood that a country breaches the threshold. The average number of current account flags in the treatment group after the MIP is 22 percent lower than the change in that variable in the control group over the same horizon. In column (2) we restrict the sample further to the years post-2008, to ensure that the result is not driven by particularities of accession countries in the early 2000s. The result holds. In column (3), we use the alternative definition of the treatment group, sketched above. We classify countries not according to their overall number of hypothetical flags prior to the treatment, but only according to their hypothetical current account flags. The result is similar to columns (1) and (2). In column (4) we check whether there are significant pre-treatment trends. For this we construct two interaction variables with the treatment indicator and the year dummy 2010 and 2011, respectively. The insignificance of these variables suggests that there are no strong pre-treatment trends or anticipation effects. Finally, in column (5), we conduct a placebo test by shifting the treatment further to the year 2009. We find no significant effect, suggesting that the significant impact of the MIP in columns (1) – (4) is no coincidence.

In panel (b) of Table A4 we conduct the same analyses with the long-term unemployment rate as the dependent variable, instead of the current account flag. Here, we keep the original measurement of the dependent variable, that is, in percentage points, as this indicator does not have two-sided thresholds. The results are similar to those of panel (a). The sample for the definition of the treatment group or the estimation sample (columns 1 and 2) does not change the main conclusion of a statistically significant negative impact of the MIP. The point estimate drops considerably, however, compared to the baseline estimates. The indicator-specific definition of the treatment group tends to strengthen the estimated impact. Finally, there are no indications of significant pre-trends and the placebo test is insignificant, as well.

3.5. Policy recommendations

Before we provide recommendations based on our estimation results, we summarize them briefly. Our findings show on the one hand that the introduction of the MIP has led to an improvement in the current account deficits and private sector debt in the EU. For the euro area, we find that the introduction of the MIP has improved the current account deficits and private credit flow. In both cases, total unemployment increased, but long-term unemployment and youth unemployment decreased. On the other hand, we find for the majority of 14 headline scoreboard indicators that the introduction of the MIP did not lead to a decrease in breaches of the thresholds. In addition, large current account surpluses, as we observe them in Germany, still persist. Our finding regarding the current account balances are thus foremost related to the reduction of current account deficits.

The result that the introduction of the MIP had an effect on the current account balances, as well as on private sector credit flows, has important implications for the question whether unsustainable macroeconomic developments can be prevented in the future. Current account deficits, as well as high private sector debt, contribute to deep financial and economic crises. Persistent current account deficits or surpluses are a danger to macroeconomic stability, because importing more than exporting often implies that the country has to take on credit. A sudden dry-up of external financing can generate deep economic contraction, as it requires an adjustment of internal demand. Persistently running surpluses goes hand in hand with increasing debt in other countries and also implies excessive savings over investment, which endangers the capital stock and thus long-term growth prospects for the country.

Moderate levels of current account balances may also matter for countries in the euro area, where most of the debt is denominated in Euro. Persistent current account imbalances can cause exit expectations of a number of countries from the euro area (Bayer, Kim, and Kriwoluzky 2018). The exit expectations from a currency union decrease output and employment in countries that are subject to them (Kriwoluzky, Müller, and Wolf 2019).

Furthermore, in a seminal study, Schularick & Taylor (2012) show that financial crises are associated with high credit growth and that recessions are more deep if private debt is high. Given this background, our result that the MIP has led to an improvement of private credit indicators is important. It implies that if the MIP were in place and private credit growth were monitored and curbed at the right time, the MIP would have helped to mitigate the effects of the financial crisis in 2007/08.

In the aftermath of the financial crisis, six countries received financial assistance: Cyprus, Latvia, Greece, Ireland, Spain, and Portugal. In three countries, the financial assistance was motivated and given to recapitalise the financial sector (Cyprus, Ireland and Spain) or to assist in a balance-of-payment crisis (Latvia). Since the MIP leads to a reduction of current account deficits and to an improvement in the private debt indicators, we conjecture that it would have mitigated the height of the financial assistance to these countries. Due to the existence of other imbalances, we cannot rule out that the financial assistance would have been necessary.

Next to the encouraging results, we also find that the introduction of the MIP did not lead to a decrease in breaches of thresholds for the majority of the headline indicators. One reason for this finding has been set out in the Commission's document "Economic Governance Review": the degree of CSR implementation has declined. Efstathiou and Wolff (2019) find that even Member States with excessive imbalances do not implement significantly more reforms than other Member States. In their report, the Five Presidents stated that the EIP "*should be triggered as soon as excessive imbalances are identified and*

be used to monitor reform implementation". We suggest a different road to obtain a higher rate of compliance with country-specific recommendations that is the implementation of a fund such as the BICC. The fund could provide grants (or incentives) to countries that implement the CSRs, by making sufficient progress with the implementation of economic reforms and thereby increasing compliance.

Our second policy recommendation is the introduction of a new set of indicators. These indicators should cover environmental issues and reflect the goals formulated in the context of the European Green New Deal. While there exists the danger of having too many objectives and indicators, incorporating environmental indicators into the MIP would have the advantage of having a precise surveillance system that could also launch a corrective action. Economic crises in the future could well be associated with environmental catastrophes, which disrupt supply chains, trigger large migrations, or destroy a part of the capital stock.

4. CONCLUSIONS

In this paper, we have investigated whether the introduction of the MIP has been successful in detecting economic imbalances and whether the countries of the European Union, and especially in the euro area, are better equipped today to prevent unsustainable economic developments in the future. Our analysis has been based on the idea that macroeconomic imbalances are persistent and that those countries that have hypothetically been breaching thresholds of the MIP scoreboard indicators before its implementation are more likely to be in breach of these indicators afterwards, compared to countries with a sound macroeconomic environment before the introduction of the MIP. We find that the MIP contributed to a more stable economic development. If it were in place in the run up to the financial crisis, the crisis would probably not have been so severe.

We nevertheless find that the MIP did not lead to a decrease in breaches of thresholds for most of the headline indicators. This finding corroborates recent observations that the implementation of country-specific recommendations has been slowing down drastically. In order to improve the compliance with country-specific recommendations, and thus the effectiveness of the MIP, we recommend to further develop the MIP. First and most importantly, the MIP should have access to a fund that provide grants (or subsidies) to countries that meet the requirements of the CSRs. This would not only increase the enforceability of the recommendations but alleviate the costs of structural economic reforms and thus make countries more willing to implement the recommendations. Furthermore, additional fiscal indicators and especially environmental indicators should be monitored.

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ANNEX

Table A1: Estimated impact of MIP – controlling for lagged other indicators.

Panel (a): External and competitiveness indicators

Model	(1)	(2)	(3)	(4)	(5)
Dependent variable	Current account balance	International investment position	Real exchange rate	Export market share	Unit labour costs
Impact MIP	1.36***	-0.04	-0.56	-7.54***	0.15
	(0.38)	(1.73)	(0.66)	(1.71)	(0.86)
Observations	371	374	379	367	379
Chi2	2160.50	5598.70	1038.45	1095.65	724.19

Panel (b): Internal indicators

Model	(1)	(2)	(3)	(4)	(5)	(6)
Dependent variable	House price index	Private credit flow	Private sector debt	General government debt	Unempl. rate	Financial sector liabilities
Impact MIP	-0.92	-4.62***	0.58	1.30	0.64***	-1.24
	(1.21)	(1.24)	(2.02)	(1.36)	(0.25)	(1.47)
Observations	367	379	379	379	379	379
Chi2	441.73	706.37	6342.11	4472.70	1449.26	602.51

Panel (c): Labour market indicators

Model	(1)	(2)	(3)
Dependent variable	Activity rate	Long-term unempl. rate	Youth unempl. rate
Impact MIP	0.18	-1.66***	-4.12***
	(0.23)	(0.31)	(0.99)
Observations	387	372	389
Chi2	218.39	554.96	659.91

Notes: The table shows the estimated impact of the macroeconomic imbalance procedure on the 14 main indicators of the macroeconomic scoreboard when controlling for the lagged indicators of the other two categories. All models contain unreported country and year fixed effects. Standard errors adjusted for autocorrelation and heteroskedasticity are in parentheses (* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$).

Table A2: Estimated impact of MIP – controlling for lagged other indicators and interactions.

Panel (a): External and competitiveness indicators

Model	(1)	(2)	(3)	(4)	(5)
Dependent variable	Current account balance	International investment position	Real exchange rate	Export market share	Unit labour costs
Impact MIP	1.33***	-2.38	-0.04	-6.32***	0.82
	(0.39)	(2.02)	(0.68)	(1.84)	(0.86)
Observations	371	374	379	367	379
Chi2	2313.21	6520.80	1143.66	1179.16	826.15

Panel (b): Internal indicators

Model	(1)	(2)	(3)	(4)	(5)	(6)
Dependent variable	House price index	Private credit flow	Private sector debt	General government debt	Unempl. rate	Financial sector liabilities
Impact MIP	-1.78	-5.01***	0.59	1.92	0.68**	-2.82*
	(1.30)	(1.37)	(2.20)	(1.40)	(0.28)	(1.59)
Observations	367	379	379	379	379	379
Chi2	485.12	738.27	6674.46	6412.03	1949.11	674.90

Panel (c): Labour market indicators

Model	(1)	(2)	(3)
Dependent variable	Activity rate	Long-term unempl. rate	Youth unempl. rate
Impact MIP	0.21	-1.34***	-3.43***
	(0.24)	(0.30)	(0.99)
Observations	387	372	389
Chi2	248.84	775.41	783.94

Notes: The table shows the estimated impact of the macroeconomic imbalance procedure on the 14 main indicators of the macroeconomic scoreboard when controlling for the lagged indicators of the other two categories and interaction terms of these variables with a post 2012 indicator variable. All models contain unreported country and year fixed effects. Standard errors adjusted for autocorrelation and heteroskedasticity are in parentheses (* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$).

Table A3: Impact of MIP excluding program countries and years.

Panel (a): External and competitiveness indicators

Model	(1)	(2)	(3)	(4)	(5)
Dependent variable	Current account balance	International investment position	Real exchange rate	Export market share	Unit labour costs
Impact MIP	1.53***	10.36***	-0.03	-1.09	6.00
	(0.44)	(2.29)	(1.18)	(2.34)	(7.38)
Observations	502	515	595	442	576
Chi2	1951.69	5342.21	891.08	1752.73	114.59

Panel (b): Internal indicators

Model	(1)	(2)	(3)	(4)	(5)	(6)
Dependent variable	House price index	Private credit flow	Private sector debt	General government debt	Unempl. rate	Financial sector liabilities
Impact MIP	5.30***	-1.09	-10.59***	0.67	0.85**	0.96
	(1.72)	(1.38)	(2.03)	(1.28)	(0.34)	(2.55)
Observations	446	632	635	639	551	609
Chi2	661.26	657.59	6178.86	6714.79	1164.18	554.51

Panel (c): Labour market indicators

Model	(1)	(2)	(3)
Dependent variable	Activity rate	Long-term unempl. rate	Youth unempl. rate
Impact MIP	-0.23	-1.09***	-4.30***
	(0.30)	(0.41)	(1.29)
Observations	540	416	565
Chi2	321.96	496.32	485.36

Notes: The table shows the estimated impact of the macroeconomic imbalance procedure on the 14 main indicators of the scoreboard in the euro area when excluding country-year observations when a country participates in an external macroeconomic adjustment program and when controlling for country-specific time-trends. All models contain unreported country and year fixed effects. Standard errors adjusted for autocorrelation and heteroskedasticity are in parentheses (* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$).

Table A4: Sensitivity analysis for current account balance and long-term unemployment rate.

Model	(1)	(2)	(3)	(4)	(5)
Panel (a)					
Dependent variable: current account balance flag					
Impact MIP common treatment	-0.22***	-0.31***			
	(0.06)	(0.06)			
Impact MIP indicator-specific treatment			-0.19***	-0.18***	
			(0.06)	(0.06)	
Placebo test year 2010				0.02	
				(0.06)	
Placebo test year 2011				0.05	
				(0.06)	
Placebo test treatment in 2009					-0.11
					(0.07)
Observations	371	305	305	305	305
Chi2	607.03	644.35	565.79	598.23	538.82
Panel (b)					
Dependent variable: long-term unemployment rate					
Impact MIP common treatment	-0.56**	-0.52**			
	(0.25)	(0.26)			
Impact MIP indicator-specific treatment			-0.65**	-0.64**	
			(0.28)	(0.28)	
Placebo test year 2010				-0.01	
				(0.30)	
Placebo test year 2011				0.29	
				(0.30)	
Placebo test treatment in 2009					-0.04
					(0.26)
Observations	372	304	304	304	304
chi2	720.64	752.97	742.71	735.43	730.38

Notes: The table shows the estimated impact of the macroeconomic imbalance procedure on current account flags in panel a and on the long-term unemployment rate in panel b when using alternative samples, definitions of treatment group and conducting pre-trend and placebo tests. All models contain unreported country and year fixed effects and the set of control variables discussed in Table 6. Standard errors adjusted for autocorrelation and heteroskedasticity are in parentheses (* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$).

This paper analyses the effects of the implementation of the Macroeconomic Imbalance Procedure (MIP) on the macroeconomic performance of countries in the EU and the euro area. We find that the introduction of the MIP led to a decline in current account imbalances and private sector debt and credit flows, but that the overall effects are limited. To strengthen the MIP, we support the introduction of the Budgetary Instrument for Convergence and Competitiveness, i.e. a fund that pays grants, conditional on the implementation progress of economic reforms.