

## RESEARCH REPORT

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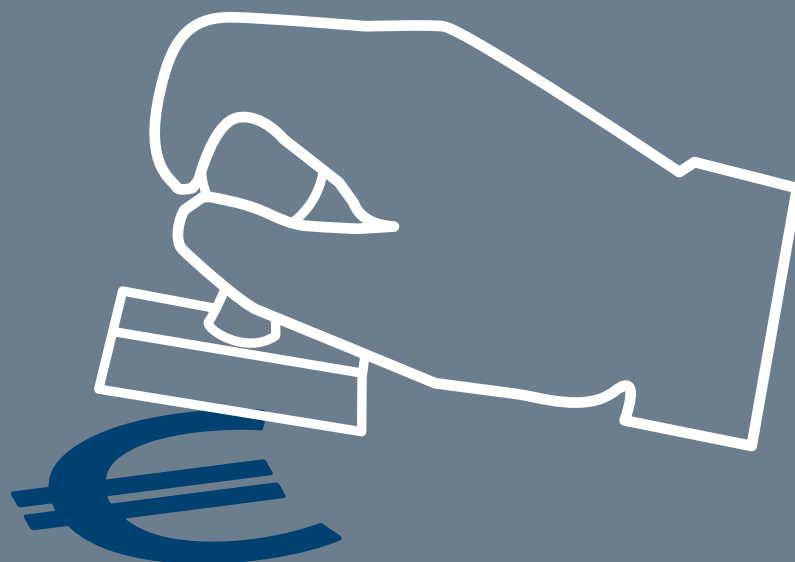
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# Fiscal Rules for Europe

*Charles Wyplosz, Roel Beetsma, Martin Larch, Jean Beuve,  
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ifo DICE Report

ISSN 2511-7815 (print version)

ISSN 2511-7823 (electronic version)

A quarterly journal for institutional comparisons

Publisher and distributor: ifo Institute

Poschingerstr. 5, 81679 Munich, Germany

Telephone +49 89 9224-0, Telefax +49 89 9224-1462, email [ifo@ifo.de](mailto:ifo@ifo.de)

Annual subscription rate: €50.00

Editors: Marcus Drometer, Yvonne Giesing, Christa Hainz, Till Nikolka

Editor of this issue: Marcus Drometer ([drometer@ifo.de](mailto:drometer@ifo.de))

Copy editing: Tanja Stitteneder

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# Fiscal Rules for Europe

## Charles Wyplosz Fiscal Discipline in the Eurozone: Don't Fix It, Change It

### INTRODUCTION

After twenty years, the conclusion is unescapable: the Stability and Growth Pact has failed. This failure was predictable and now widely acknowledged.<sup>1</sup> Even such insiders as the former Chair of the Eurogroup admits that “the present rules-based system of the Stability and Growth Pact (SGP) has become nearly unmanageable due to its complexity, and the constant addition of exceptions, escape clauses, and other factors.” (Wieser 2018). Beyond this near-consensus, opinions about reforms greatly diverge. Some propose to streamline the pact, others to focus on a different rule or set of rules, while others again seek a greater role for market discipline through the issuance of various types of eurobonds.

Yet, these proposals fail in five crucial aspects. First, they ignore the inconsistency of the Treaty on the Functioning of the European Union (TFEU). On the one hand, the treaties establish that national budgets are an exclusive competence of member states. On the other hand, they assert that national budgets are of common interest (Art. 121–1). Second, while they set out to provide a simplification, most proposals formulate complicated rules replete with exceptions and sophisticated procedures that citizens cannot comprehend. Third, rules have become an end unto themselves, deviating from the underlying economic logic. Fourth, numerical targets cannot be rigorously justified and the justifications provided are time-dependent and therefore bound to become outdated. Fifth, the proposals that seek to promote market discipline fail to recognize that it can be weak as an early signal, violent when it is triggered, and possibly arbitrary in the presence of self-fulfilling prophecies.

This paper adopts a different approach. It argues that no fiscal discipline framework will be effective

unless it recognizes that national budgets are intrinsic to Western democracies. It therefore proposes to decentralize the responsibility for fiscal discipline to the national level. It also seeks to ground the rules to sound economic principles. This leads to establish long-term debt as the only target and to use the annual budget balance as the instrument. It recognizes that fiscal policy can be a useful instrument to stabilize income and employment when discipline is established. This means that annual budgets must be seen as steps toward achieving the long-run target, which allows for fluctuations when needed. This, in turn, entails judgments that can be made only by independent fiscal councils that are properly equipped with adequate resources. Finally, it shows how the “common interest” can be preserved in a decentralized approach by subjecting national rules, and their implementation, to a European certification process that respects national sovereignty regarding budgetary decisions.

### ECONOMIC PRINCIPLES I: WHAT IS FISCAL DISCIPLINE?

No economic principle justifies capping the budget deficit at 3 percent year after year. The 3 percent ceiling is neither necessary nor sufficient to achieve fiscal discipline. In fact, most existing rules include various obligations that are not justified. More importantly, fiscal discipline often remains shrouded in normative misconceptions. This matters a great deal because, for a rule to be enforced, ultimately citizens must be convinced that it makes sense.

Fiscal discipline is best understood as the obligation imposed by the budget constraint. The difficulty is that the budget constraint is intertemporal. It says that in the infinity of time, the public debt must be negative or nil. Infinity, of course, must be made practical, which means looking at the very long run. But then the debt does not have to strictly be negative or nil, just “not too big”. Of course, “not too big” is highly subjective. How then to operationalize “not too big in the very long run”? The proposed solution is the eyeball test, illustrated in Figure 1, which displays the ratio of public debt to GDP for selected countries. The Netherlands passes the eyeball test: the debt ratio never seems to drift endlessly upward. Ireland lost control of its public debt during its banking crisis in 2008–2010, then recovered it. Italy never managed to significantly bring its debt ratio down, although it was “too big”. Greece lost control in the early 2000s, although the debt ratio was

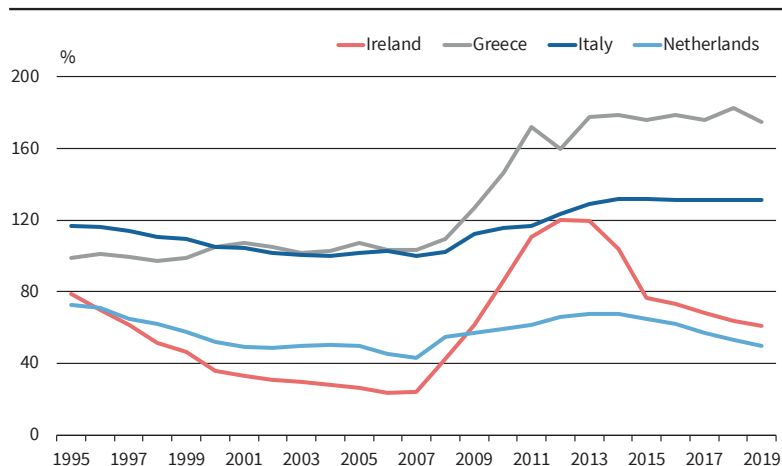


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<sup>1</sup> The literature has become too voluminous to quote. A few examples are Eichengreen and Wyplosz (1998); Ioannou and Stracca (2011); Christofzik et al. (2018); European Fiscal Board (2018); and the survey in Eyraud et al. (2018).

Figure 1

## Debt-to-GDP Ratios



Source: European Commission, AMECO online (UDGG).

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already big, and has not yet managed to bring it down. Note that the test allows for different starting positions, which fixed numerical targets do not.

This definition may seem vague. In fact, it is sufficient to distinguish fiscal discipline from indiscipline. Applying the eyeball test to Italy and Greece at any point from the 1990s onward would have issued the correct signal. In the case of the Netherlands over the period 2007–2014, the test would not have called for immediate correction, given the ongoing recession. In the case of Ireland, the post-2018 slippage could not have been missed. The “soft” eyeball test is, in fact, far more precise than rules that focus on tenths of percentage point deviations.

## ECONOMIC PRINCIPLES II: ONE TARGET AND ONE INSTRUMENT

The eyeball test requires making projections of the likely evolution of the debt ratio over the long run, defined as a few decades, and passing judgement. It can be argued that this is impossible, but it is not. The evolution of the public debt ratio is driven by three variables: the growth rate of GDP, the interest rate, and the annual budget balances. Long-run growth is commonly estimated, as is the interest rate. The precision of these projections is limited, of course, but probabilities can be assigned to derive fan charts or scenarios. The advantage of fan charts and scenarios is precisely to bring to the fore the uncertainty of projections, which should warn against sanguine statements and policy recommendations. It also serves as an important reminder that precise numerical targets are unrealistic and possibly misleading.

Regarding the path of future budget balances, the procedure is to inverse the reasoning. Instead of attempting to forecast the evolution of the debt, it asks whether the evolution of the debt predicted by various assumed paths of budget balances is compatible with

fiscal discipline. This allows to immediately distinguish acceptable budget balance paths from unacceptable ones. The procedure has three key advantages. First, it clarifies that the debt is the target and the budget is the instrument, an important distinction that is lost in most rules. Second, it allows for an unlimited number of feasible budget paths, thus fully preserving the right of governments to make intrinsically political decisions. Third, it makes it clear that a few years of large deficits have a negligible impact on the long-run evolution of the debt ratio provided that they are corrected, which

allows for the countercyclical use of fiscal policy while preserving fiscal discipline.

It is worth emphasizing that the rule is not numerical. There is no set debt target. The eyeball test merely considers the long-run evolution of the debt ratio. Countries that start with a high debt level must aim at a declining trend. Countries that start with a low debt level can choose to keep it where it is, to bring it down, or even to let it rise (a bit) if there is a good reason to do so. Theory has not identified any optimal public debt level. Empirical work suggests that debt ratios in excess of, say, 90 percent of GDP can lead to instability and impose a growth-reducing burden of taxation.<sup>2</sup> This can be taken as an indication of what “too big” is, bearing in mind that some safety margin is needed to cope with unforeseeable events.

## ECONOMIC PRINCIPLES III: TIME CONSISTENCY

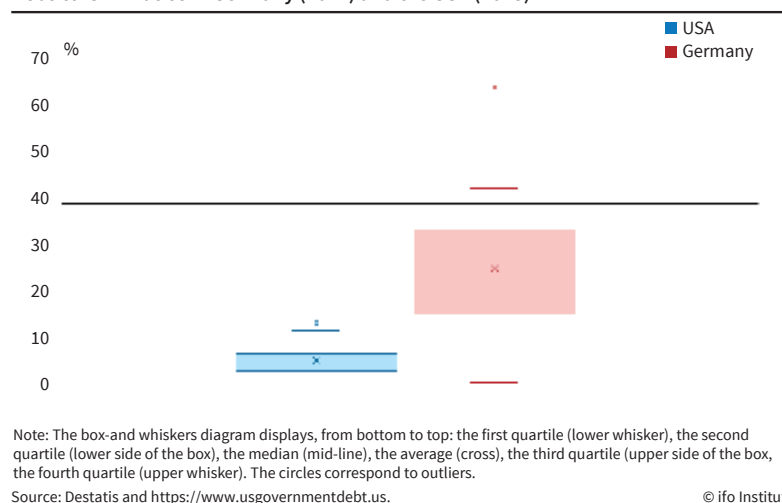
An important issue is that the current government cannot tie future governments down to its own commitments. This is not what the proposed rule attempts to do, but it must deal with the associated time inconsistency. The natural solution is to explicitly introduce and define fiscal discipline in the constitution. Doing so does not reduce government autonomy, as is sometimes claimed. It merely recognizes the fact that no country can escape the budget constraint and that the constraint creates a time inconsistency problem. As for the definition, it ought to link fiscal discipline to the internal budget constraint. As argued above, the proper statement should be based on the long-run path of the debt ratio, in effect the eyeball test. Finally, if it is not already the case, the constitution must unambiguously assign responsibility for upholding this obligation to the parliament in its role of voting on the budget.

<sup>2</sup> The classic (and controversial) reference is Reinhart and Rogoff (2010) but other studies deliver similar limits. Precision, again, is illusory.

In practice, the procedure requires that the government in place announces publicly its planned long-run debt target and the associated budget balance path. The next government can change the debt and budget paths, but it must do so publicly. It is then up to the parliament to ensure that any change satisfies the constitutional requirement. The constitutional court may intervene if it considers that fiscal discipline is not upheld. The precise implementation may vary from country to country according to existing institutions and traditions.

Figure 2

Debt-to-GDP Ratios in Germany (2017) and the USA (2018)



## INDEPENDENT FISCAL COUNCILS

The main advantage of the proposed approach is that it leaves the government, the parliament and the constitutional court with a wide margin of appreciation. It obviously opens up the possibility that this margin will be exploited to avoid the rule. Somehow, during the budgetary process, someone must tell the truth, evaluating the economic situation and assessing the rule's inherent uncertainty. The solution calls for an independent fiscal council that is nonpartisan and whose expertise is beyond doubt.

The Fiscal Compact already requires every eurozone member country to establish an independent fiscal council, but this requirement is imprecise and has been diversely implemented from country to country. The proposed rule requires a modification of the Fiscal Compact. Three requirements are in order.

First, the council must be in charge of translating the government's budgetary decisions into numbers – both the budget and the public debt path. This is already the case in some countries, for example in the Netherlands but, in many others, this task is conducted by the Ministry of Finance, which is not independent.<sup>3</sup> One solution is for the Ministry to entirely devolve the task to the independent fiscal council, another solution is to provide the council with the resources and information required to perform the task on its own, independently of the Treasury.

Second, the council must be tasked to determine whether the government's choices are compatible with fiscal discipline, as defined in the constitution. This requires professional, nonpartisan judgment. The council's view must be taken into account by the parliament when it votes on the budget. In the event that the constitutional court is called upon, its own judgment must acknowledge the council's opinion.

Third, the competence of the council must be beyond doubt. To that effect, its members – or its manager – must be chosen on the basis of explicit criteria that focus exclusively on competence and nonpartisanship. In addition to the Netherlands, several countries (for example, Sweden, the UK, and Spain in Europe, or Chile and the US Congressional Budget Office) provide useful examples.

## IMPLEMENTATION AND EUROPEAN OVERSIGHT

Obviously, there is no guarantee that each eurozone member country will adopt and adequately enforce the proposed rule. The logic of the Stability and Growth Pact is to rely on centralized enforcement, involving the Commission and the European Council, but that did not work out satisfactorily. One reason is politicization. The European Council is a political institution and, as such, not inclined to blindly follow technical rules. This was made clear by the 2005 decision to put the pact in abeyance when the two largest countries, France and Germany, faced the possibility of sanctions. More generally, no country was ever sanctioned in spite of repeated challenges to the pact. Neither is the Commission free from political interference.

Another reason is the internal inconsistency of the treaties, as noted in Section . This problem is vastly underestimated. It arises even in federal countries. The case of Germany, whose experience inspired the Stability and Growth Pact, is telling. The fiscal autonomy of the Länder (federal states) is more limited than that of the eurozone's member states. Even though the federal government has the power to intervene, some Länder have accumulated rather large debts: Bremen's debt ratio stands at 65 percent of its GDP, Berlin's at 43 percent and Saarland's at 41 percent. In contrast, in the US, the states are fully autonomous, as the federal government has no authority to intervene. Yet the largest state debt – in Rhode Island – amounts to 15 percent of

<sup>3</sup> Interestingly, the New Zealand Treasury is fully independent.

its GDP. More generally, Figure 2 shows that fiscal discipline is far better achieved in the US than in Germany.

How can this surprising result be explained? In the US, each state (save Vermont) has adopted a constitutional rule. The rules vary from state to state but they are variants of a budget balance rule. The reason why these rules have been adopted, and why Vermont is fiscally disciplined, is that the federal Congress created a jurisprudence in the 1840s that bans bailouts. In contrast, in Germany, the Constitutional Court has imposed on the Federal Government the obligation to bail out Länder that face financial difficulties. The unmistakable lesson is that a solid no-bailout rule provides sub-federal governments with the incentive to adopt fiscal discipline constitutional rules and to respect them. Restoring and guaranteeing the European no-bailout rule is essential.

Even so, the treaty's declaration that national budgets are of common interest recognizes an important externality that must be dealt with. In the proposed framework, it means that the European level should have a say on the arrangements adopted by member countries. This concerns the constitutional provisions, the associated rule, the budgetary process and the independent council. These arrangements do not have to be the same in each country, but they should be certified before they are adopted. The detailed requirements would be specified ex ante. The certification could be delegated to the Commission or to the European Fiscal Board. This would go a long way toward resolving the internal contradictions of the treaties: each country would retain full sovereignty in budgetary matters but the budgetary process would have to comply with European-wide norms, pretty much as is already the case in a variety of cases ranging from human rights to democracy.

In the same spirit, the implementation of fiscal discipline would be subject to the European Court of Justice. The Court should be given the mandate to verify that each member country abides by its own constitutional commitments. In contrast with the sanctions envisaged by the Stability and Growth Pact, this is a decision that is inherently nonpolitical. While it is impossible to have an iron-clad guarantee that a member state would always respect fiscal discipline, the prospect of a condemnation by the European Court of Justice would provide a powerful incentive. For the process to be effective, it is essential that the requirements be very precisely stated. The experience with the no-bailout clause is a reminder of the risks that apparently clear legal obligations can be circumvented.

## CONCLUSIONS

Fiscal discipline is a necessary condition for the smooth functioning of the euro. It is a sad accident of history that the solution adopted to fulfil this condition has been the Stability and Growth Pact. When the limitations of the pact started to become evident, the

response has been to try and “improve” it, sometimes by making it more flexible, at other times by closing loopholes or by trying to enhance national ownership, always by making it more complex. Even though this logic has failed repeatedly, it remains the order of the day. Further improvements and refinements will fail to be effective because fiscal policy will remain a national competence, as it is even in tighter federal systems.

This paper proposes a different approach. It aims at combining national competences and the collective interest. National competence in budgetary matters must come with national responsibility for fiscal discipline. The collective interest is to be served by requiring that adequate national budgetary processes be inscribed in the national constitutions of member states.

Another distinctive characteristic of the proposed framework is to align the definition of fiscal discipline with economic principles. Fiscal discipline is not about year-by-year budget balances nor about numerical targets that do not have solid foundations. Following the successful experience with inflation targeting in monetary policy, it is suggested to adopt the long-run evolution of the debt-to-GDP ratio as a target and annual budget balances as the instrument. This allows for the countercyclical use of fiscal policy while constraining the path of the debt ratio. Importantly, the path of the debt ratio is not encased in a priori numerical targets, rather it is subjected to an “eyeball test” that checks whether current and future budget balances deliver a prudent long-run evolution of the debt.

Substituting for numerical targets, the eyeball test requires a professional and nonpolitical judgment. To that effect, independent fiscal councils must be empowered to compute the long-term evolution of the debt and to determine whether fiscal discipline is respected. Their conclusions must fit in the budgetary process and guide parliaments as they vote on annual budgets subject to the constitutional obligation to enforce fiscal discipline.

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## Roel Beetsma and Martin Larch<sup>1</sup> EU Fiscal Rules: Further Reform or Better Implementation?

### INTRODUCTION

The roots of EU fiscal rules reach deep into the foundations of the single-currency area's governance framework. When the blueprint for the euro was drawn up in the late 1980s, the prevailing paradigm was built around the understanding that macroeconomic stability would hinge on two conditions: sound public finances and low and stable inflation. To achieve the latter, policy makers agreed to centralize and delegate monetary policy to the ECB, an independent institution with a clear mandate. With regard to sound public finances, policy makers could not agree on centralizing fiscal policy, but they concurred that commonly agreed rules should limit the discretion of national fiscal policies.

Twenty years after the introduction of the euro, the understanding that national fiscal policies should be bound by rules to safeguard the sustainability of public finances and the smooth functioning of the single currency remains uncontested. What has changed, though, is the assessment of whether the current set of EU fiscal rules is effective. When the Stability and Growth Pact (SGP) entered into force in 1997, most policy makers and pundits assumed that member states participating in the common currency project would show the necessary commitment to the agreed rules. After all, the introduction of the euro was a major political step, signaling the determination to go and think beyond national borders. Several countries had undertaken important reforms and made important sacrifices to qualify for the euro. However, reality caught up with expectations fairly quickly. Compliance with the rules turned out to be weak right from the start. Attempts to strengthen or improve the rules, mostly in the wake of major difficulties, have solved some problems but given rise to new ones.

Today, observers and policy makers are deeply divided. Some are of the view that EU fiscal rules are fine and do not need to undergo yet another reform, while others think the fundamental problem is not the design of the rules but a lack of commitment on the part of some member states. As a result, revisiting the current set of rules is not at the top of the policy agenda. In December 2017, when the European Commission updated the roadmap for completing Europe's

Economic and Monetary Union (EMU), precedence was given to the completion of the banking and capital market union (European Commission 2017). A reform of EU fiscal rules is mentioned, but as a possible step to be taken once all the other elements have been put in place.

While giving priority to the banking union is justified on economic and political grounds, the debate on the effectiveness of the current EU fiscal framework has not abated. It is actually being fueled by a series of Commission and Council decisions that have further increased the divide between member states over how the SGP should be implemented. Pushing out the debate on what to do with the SGP in the context of the broader project of deepening the EMU may gain some time, but it does not solve the underlying problem. The proverbial silver bullet has not been found yet, but a discussion on how to make EU fiscal rules work needs to continue.

The remainder of this paper is structured as follows: Section 2 presents a brief history of EU fiscal rules, highlighting the main trends and innovations since the inception of the SGP. Section 3 turns to the current situation, reviewing the main challenges and shortcomings of EU fiscal rules and how they are implemented. Section 4 discusses possible options for reform, pointing to a growing convergence of views among experts coupled with persisting political differences across member states.

### AN ABRIDGED HISTORY OF EU FISCAL RULES

The tendency of politicians to run high deficits is well documented. If a country were completely disconnected from the rest of the world, one could argue that, no matter how badly it affects its own population, such a deficit bias is a domestic problem and there is no compelling reason for other countries or supranational authorities to interfere with profligate budgetary policies. However, this is not the reality. Fiscal profligacy is a common concern in the EMU because of the advanced degree of economic integration and, linked to that, the adverse spillovers to other countries. These spillovers take several forms. While the original focus was on increased inflationary pressure in the monetary union, over time, the focus shifted to the unavailability of implicit (via the ECB) or explicit bailout when the financial system (in particular the banking sector) faces the threat of a collapse. Because the negative consequences of adverse spillovers are not (or are only partially) internalized by national governments, increased monetary and financial integration will exacerbate pre-existing deficit biases. Hence, as long as fiscal policy making continues to be conducted at the national level, the EMU needs constraints on national fiscal policies. In fact, the rationale for such constraints is not confined to the euro area: because there are spillovers to and from non-participating member states, these, too, ought to be subject to constraints.



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<sup>1</sup> The views expressed in this paper are not necessarily those of the European Commission, the European Fiscal Board, or other institutions the authors are associated with.



The fear of adverse spillovers from undisciplined policies resulted in the SGP, which has undergone a number of important changes since its inception more than 20 years ago. In the triangular trade-off between simplicity, adaptability, and predictability, it started as a reasonably simple and predictable set of rules. Member states were expected to achieve balanced budgets in the medium term. In light of the sustained rates of nominal GDP growth observed at the time, this also ensured a declining trend of the debt-to-GDP ratio. To address gross policy errors, which were defined as a deficit in excess of 3 percent of GDP or a debt ratio that would not decline at a satisfactory pace toward 60 percent of GDP, the SGP included the excessive deficit procedure (EDP), a structured sequence of policy guidance that, if not followed, would ultimately escalate toward sanctions. Although strictly speaking not part of the SGP, the architects of the euro area also added a no-bailout clause to the governance framework with the intent of keeping member states clear of any situation that would put the sustainability of public finances at risk.

The lack of flexibility of the SGP mark I became evident quite quickly when, in the early 2000s, most euro-area economies took a nosedive after the dot-com bubble of the late 1990s eventually burst. Built around the headline budget balance, the agreed fiscal rules forced member states into successive rounds of pro-cyclical tightening. While smaller countries swallowed the bitter pill, France and Germany, supported by Italy, defied the “stupid” prescriptions of the Pact and, in November 2003, staged a stand-off with the European Commission. This eventually led to the first reform of the Pact in 2005. Two additional reforms followed: one in 2011, in the wake of the post-2007 financial and economic crisis, which revealed important gaps and blind spots in the SGP, and the other in 2013, on the back of the euro-area sovereign debt crisis.

While reviewing the details of the successive reforms goes beyond the scope of this short paper, four main themes in the evolution of the Pact deserve to be mentioned (European Fiscal Board 2018). First, the original SGP clearly prioritized debt sustainability over fiscal stabilization. The rules were meant to be followed independently of prevailing cyclical conditions. Successive reforms led to a significant rebalancing of the almost lexicographic order of priorities of the early years: the weight attached to stabilization increased progressively and rules increasingly catered for additional contingencies outside the control of the government. Second, successive

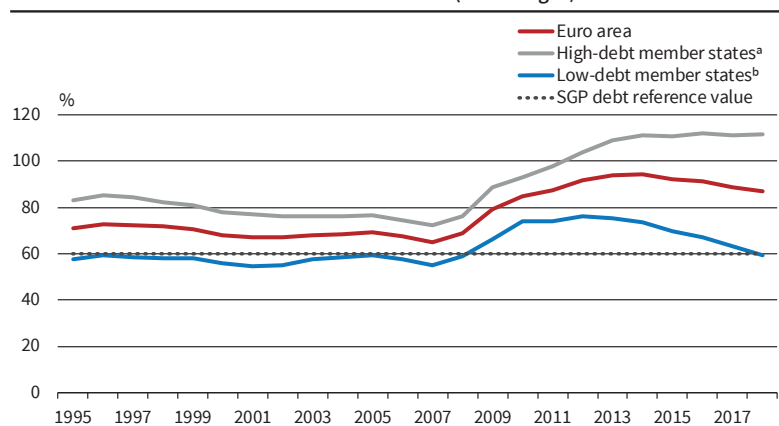
reforms had a major impact on the surveillance process. The early rules defined a fairly light surveillance system. Member states were expected to communicate medium-term budgetary plans in the autumn of each year and the Commission would issue formal guidance only if countries went off course. Over time, fiscal surveillance turned into a tight-meshed annual cycle – the European Semester – with a rapid succession of *rendez-vous* involving reporting, monitoring, granular policy guidance, and, in theory, a progression of sanctions. The tightening of surveillance was intended as a counterweight to more flexible and intelligent rules coupled with the realization that, contrary to initial expectations, member states would not spontaneously comply with the rules. Third, the Commission’s role in implementing the rules has grown in importance over time, turning EU fiscal surveillance into an increasingly unilateral process as opposed to a multilateral one. In parallel, the Commission decided to take a more political stance in relation to the application of fiscal rules, departing from its original role as the guardian of the treaties. Fourth, while the original set of rules was exclusively managed and implemented from the center by the Commission and the Council, the 2011 and 2013 reforms complemented EU rules with a call for national fiscal rules and independent national bodies mandated to provide a non-partisan assessment of certain aspects of national fiscal policy making.

## THE CURRENT STATE OF AFFAIRS

Overall, the SGP changed from a relatively simple set of rules to a complex framework in which simplicity has been sacrificed to adaptability and discretion, at the cost of making the application of the rules much less predictable and transparent. On paper, the successive reforms of the SGP were aimed at achieving a double objective: (i) improving the economic rationale of the fiscal rules by adding elements of flexibility; and (ii) strengthening the surveillance framework with addi-

Figure 1

Government Debt-to-GDP Ratio in the Euro Area (GDP Weight)



<sup>a</sup> Belgium, Greece, Spain, France, Italy, Malta, Portugal.

<sup>b</sup> Germany, Estonia, Ireland, Cyprus, Latvia, Lithuania, Luxembourg, Netherlands, Austria, Slovenia, Slovakia, Finland.

Source: Eurostat (2019).

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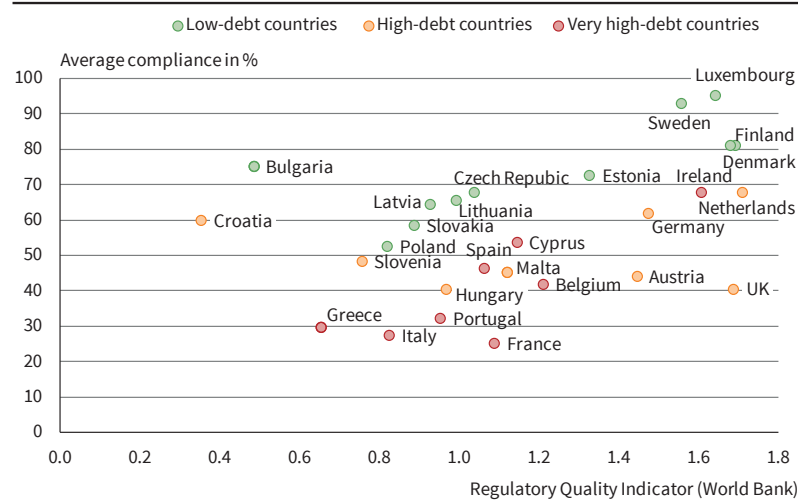
tional elements of discipline. The six-pack reform of 2011 is a particularly evident example. On the one hand, it opened up the possibility of lowering or waiving the required budgetary adjustment in exceptional circumstances (such as natural disasters or during severe economic downturns); on the other hand, it paved the way for new financial sanctions, a new correction mechanism for significant deviations from the required fiscal adjustment, and the possibility to launch an excessive deficit procedure based on the debt criterion. In actual practice, however, decision-makers did not exploit the full spectrum of new possibilities. They largely used new degrees of flexibility and discretion to soften adjustment requirements, but generally shied away from making use of the new set of disciplining instruments or options to tighten the fiscal adjustment requirements.

The debt criterion to launch an excessive deficit procedure is probably the most obvious case in point. Already included in the Maastricht Treaty, there was no need to make it operational in the initial phase because, at the rates of nominal GDP growth prevailing at the time (around 5 percent on average), the deficit threshold of 3 percent of GDP was actually more binding than keeping the government debt ratio below 60 percent of GDP or on a declining path toward it. The tide turned on the back of the secular decline in nominal GDP growth. It became clear that, for high-debt countries with slow economic growth, keeping the government deficit below 3 percent of GDP would no longer suffice to ensure a declining debt ratio, and the six-pack reform of 2011 offered the first opportunity to address the shortcoming. However, when the new constraint started to bite, expedients were found not to apply the tighter rules on the assumption that low inflation would be temporary. As inflation and, in some countries, economic growth did not recover, new forms of flexibility had to be found. In a recent prominent case, flexibility ultimately meant giving the benefit of the doubt to manifestly overoptimistic budget plans to avert a major political crisis.

Such forbearance in the application of the rules has exacerbated a long-standing division between member states, which has become exceedingly apparent in their aggregate fiscal performance. Those with a preference for fiscal discipline succeeded, on average, in bringing government debt as a percentage of GDP back to pre-crisis levels (see Figure 1) and are increas-

Figure 2

### Compliance with the Stability and Growth Pact (SGP) and Structural Conditions of the Economy, 1998–2018



Note: A higher value for the Regulatory Quality Index indicates a higher degree of regulatory quality. Average compliance = percent of years in the reference period for which a member state complied with at least one of the four rules of the SGP: the deficit rule, the debt rule, the required structural adjustment and the expenditure benchmark. Low-debt countries = EU member states with an average debt ratio of less or equal to 60% of GDP in 1998-2018. High-debt countries = EU member states with an average debt ratio of more than 60% and up to 90% of GDP in 1998-2018. Very-high debt countries = EU member states with an average debt ratio of more than 90% of GDP.

Source: Authors' calculations based on data from the World Bank.

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ingly frustrated with the lopsided application of the reformed EU fiscal rules. Other countries that, on average, barely managed to stabilize government debt-to-GDP ratios at high levels are very much content with the increased margins of flexibility or may even find the rules still too restrictive.

Unfortunately, the division does not stop at budgetary policies and performance. It is reflective of a broader shortcoming in the EU economic governance framework, namely the failure to safeguard a sufficiently homogenous degree of competitiveness across member states via structural reforms. The single currency was built on the expectation that the loss of the exchange rate instrument would leave national governments with no choice but to push through structural reforms to sustain productivity growth. This expectation turned out to be sound in some countries and completely flawed in others. A quick look at the data does not reveal an unambiguous correlation between fiscal performance and structural conditions. However, one thing is clear: countries where compliance is particularly low are typically also those with a low score for regulatory quality; they find themselves with their back against the wall of even the most flexible interpretation of the SGP (see Figure 2). Member states that combine lower regulatory quality with higher compliance are typically catching-up countries that still benefit from higher nominal GDP growth – but for how long?

The macroeconomic imbalance procedure (MIP) introduced with the six-pack reform of 2011 constituted a very sound attempt at going beyond fiscal rules. Its objective was and still is to spot, early on,

developments – such as credit and housing bubbles – that would directly or indirectly affect the macro-financial stability of a member state, with adverse systemic consequences. While it may be too early to draw final conclusions as to whether the MIP has worked or not, it has certainly not helped in narrowing the above-mentioned divide between member states.

On the contrary, the divide has polluted and very much hampered efforts to deepen and complete the Economic and Monetary Union (EMU). The fiscally more virtuous countries are unwilling to take new steps that involve more fiscal integration. They condition any future agreement on new forms of risk sharing on tangible progress with risk reduction, which is simply a code for saying: if you want more solidarity, first prove you are (i) prepared to comply with the fiscal rules we all signed up to and (ii) capable of implementing structural reforms. The Hanseatic League, led by the Netherlands, is the most evident manifestation of this view.<sup>2</sup>

### OPTIONS FOR THE FUTURE: PUNDITS CONVERGE, POLITICIANS DON'T

What is the way out of the current state of affairs: a new reform of the SGP or more resolve in implementing the existing rules? The answer and motivations vary depending on whom one asks: pundits or politicians.

Economists and experts largely concur that the current set of rules has run its course and a new chapter needs to be written.<sup>3</sup> A wide range of more or less elaborate proposals has been advanced in the recent past (e.g., Bénassy-Quéré et al. 2018; 2019, Darvas et al. 2018, Eyraud et al. 2018, EFB 2018, Feld et al. 2018, Heinemann 2018, and Kopits 2018). Despite the inevitable idiosyncrasies, there are quite a few common themes. Starting with the diagnosis, all agree that the current system lacks effectiveness as a result of having grown far too complex with a multitude of objectives (the government deficit and debt), more than one way of defining the adjustment toward the medium-term budgetary target (the structural budget balance and the expenditure benchmark), different indicators or methods for assessing whether a country has complied with the recommended adjustment, and many very detailed exceptions and contingencies.

Proposals on how to move forward also largely overlap. A reformed system of fiscal rules should (i) be transparent and simple, (ii) target fiscal indicators directly under the government's control, (iii) allow for countercyclical fiscal stabilization, and (iv) offer an escape when a very large shock hits. A combination of government debt as the long-term anchor and a cap on net expenditure growth as the operational rule to move

toward the anchor is generally considered to satisfy these conditions. Numerical simulations illustrating the properties and benefits of such a combination can be found in EFB (2018).

Most proposals underscore the importance of rethinking governance as well as the rules. They see the increasing mix-up of objective analysis and political consideration as an integral part of the current predicament. The wide margins of discretion allowed by the current system are perceived as being used to fix political problems rather than economic ones. Hence, a simplification of the rules *per se* would not be sufficient. Governance would have to be adapted in such a way as to clearly demarcate the assessment of how fiscal policy fares compared to agreed rules from the final political decision on how to apply the rules. The latter will and should remain with those who have the democratic/institutional legitimacy. However, there is scope for independent entities – such as national fiscal councils – to take a more prominent role in providing objective analysis and advice. Politicians may still decide to ignore independent advice, but the input of independent advice (and its publication) enhances the transparency of decision-making and, in turn, the accountability of the decision-maker. Currently, the role of independent fiscal councils in the EU is largely limited to assessing the macroeconomic forecasts that underpin the government budget. Going forward, many observers see merit in strengthening their role. For instance, the EU Independent Fiscal Institutions Network (2019) argues in favor of incorporating adequacy standards on the design and operational capacity of the independent fiscal institutions (IFIs) into EU legislation, and of a more effective application of the comply-or-explain principle with sufficient procedural detail on the interaction between IFIs and the administrations. Following the example of the Office for Budgetary Responsibility in the United Kingdom, IFIs could also be tasked with making the official budgetary projections.

The broad agreement among economists stands in sharp contrast with the thinking of policy makers. Most policy makers in the EU member states oppose a reform of the SGP, although for different reasons. There are those who very much appreciate the adaptability of the rules and the political approach taken over the years to their implementation. Others see a reform of the SGP as highly risky with no guarantee of coming up with a better framework; they have a strong preference for simply implementing existing rules with greater determination and less politics.

However, insisting on the status quo will not help. The current economic juncture very much underscores the limits of the current fiscal framework in the EU. Following an extended period of recovery, economic growth is starting to slow once more, at a time when neither centralized monetary policy nor decentralized fiscal policies have regained the leeway to comfortably respond to any further slowdown, let alone a new eco-

<sup>2</sup> The Hanseatic League encompasses eight EU member states: Ireland, the Netherlands, Denmark, Sweden, Finland, Estonia, Latvia, and Lithuania. The Czech Republic and Slovakia have occasionally associated themselves with the positions of the Hanseatic League.

<sup>3</sup> However, the intensity of this view is not uniform. The ECB (2019) suggests in its overview article that the reforms induced by the debt crisis have had a disciplining effect, although it gives most of the credit to the wave of balanced budget rules produced by the Fiscal Compact.

conomic recession in the euro area or significant parts of it. At the same time, there is still no fiscal capacity at the central level. We may again face a situation where, for countries with very high debt, neither additional flexibility nor sudden fiscal rigor may bring much comfort, and where countries with fiscal space may not be willing to deploy buffers for the benefit of others. The limits and constraints of the single currency may undergo a new and difficult test.

To make progress, both sides will have to move. As indicated in Beetsma and Larch (2018), new elements of risk sharing will have to be combined with new elements of risk reduction. The important point to highlight here is that such a bargain would need to go beyond the redesign of fiscal rules as such. The redesign – and strengthening – of fiscal rules can be made palatable to the proponents of risk sharing only if it is combined with some form of a central fiscal capacity (CFC). Conversely, proponents of risk reduction tend to overlook the fact that a CFC can stimulate fiscal discipline if access is conditional on adhering to credible fiscal rules. However, for this bargain to work in practice, the design of both the rules and the governance has to be right. The current rules need to be simplified, while the monitoring of whether a country adheres to the rules needs to be conducted by an independent entity. The latter is crucial to avoid having political considerations determine whether a country can make use of the CFC. In addition, market-disciplining mechanisms and mechanisms that encourage structural reforms need to be strengthened, for example by differentiating the risk weighting of sovereign debt in bank asset portfolios and by making EU expenditure conditional on structural reforms.

## CONCLUDING REMARKS

We have reviewed the history of the EU fiscal framework, its flaws, and proposals for reform. The consensus is that, in the absence of sufficient budgetary powers at the central EU level, fiscal rules are needed to limit adverse spillovers from national fiscal policies. While the weaknesses of the current rules are broadly acknowledged, policy makers' appetite for reform is limited for various reasons. In contrast, experts seem to concur on the necessary reform elements. However, to overcome the current deadlock, both sides of the debate – those in favor of enhanced risk sharing and those in favor of more risk reduction – will need to agree on a deal where each side needs to give up some of its objections to the other side's demands. In fact, enhanced risk sharing and fiscal rule reform can be made complements if the reform is designed properly and the appropriate conditionality is applied for participating in risk-sharing arrangements.

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## Simple Rules for Better Fiscal Policies in Europe



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Proposals to reform the euro area are on the agenda again. An overhaul of the complex set of European fiscal rules should be top priority on this agenda because the fiscal framework in place suffers from clearly identified problems: rules are complex (therefore difficult to internalize for policymakers), pro-cyclical (therefore potentially destabilizing), and noncompliance is the norm (therefore not credible).

### THE CURRENT FISCAL FRAMEWORK SUFFERS FROM CLEARLY IDENTIFIED PROBLEMS

Either because countries did not abide by the rules or because the rules were not sufficiently stringent during good years, there was insufficient debt reduction in many countries in the 2000s, and this reduced fiscal capacity during bad years. Consequently, several countries experienced excessive fiscal austerity during the crisis, contributing to the aggravation and prolongment of its consequences. A major drawback of these rules lies in measurement problems. The structural budget balance (the budget balance cleaned from the impact of the economic cycle and one-time budget measures like bank rescue costs), which is the cornerstone of current rules, is a useful theoretical concept but it is not observable and its estimation is subject to massive errors. The typical annual revision in the change of the structural balance is larger than half a percent of GDP, while half a percent of GDP is the baseline fiscal adjustment requirement for countries in breach of EU fiscal rules. Alone, such huge revisions highlight that this indicator is not suitable for policymaking.

The policy mistakes generated by the fiscal rules also led to overburdening the ECB as the main remaining stabilization instrument. The fiscal framework has also put the European Commission in the difficult position of enforcing a highly complex, nontransparent, and error-prone system, exposing it to criticism from countries with both stronger and weaker fiscal fundamentals. The rules are used as a scapegoat by anti-European populists because they are seen as a centralized micro-management that infringes on national sovereignty.

However, in a monetary union like the euro area, arguments exist to justify the existence of fiscal rules and the adoption of a common framework. A specific issue in a monetary union is that governments may not

fully internalize the risk of accumulating public debt. The reason is that they (and markets) may expect a bailout in case of difficulties to finance themselves. Indeed, a debt restructuring event accompanied by exit risk may generate financial disruption, contagion to other countries, and collateral damage so large that other members of the eurozone prefer a bailout. This implies that the no bailout rule is not fully credible in the eurozone (see Gourinchas, Martin, and Messer 2019) and this itself is a reason why a fiscal rule that binds all members of the monetary union is necessary.

In addition, expected bailouts may also have reduced market discipline in the sense that the cost of borrowing for some countries may have been too low in the period before the crisis. This may also have reduced the incentive for fiscal prudence, as was the case in Greece in the 2000s. Note, therefore, that debt sustainability, not public deficit per se, should be the core objective in the EMU. Note also that macroprudential rules that limit the vulnerability of financial institutions are a necessary complement to fiscal rules, as we have seen (for example in Ireland and Spain) that bank debts can rapidly be transformed into public debts.

Finally, because countries in a monetary union lose the monetary instrument to stabilize the economy against asymmetric shocks, the fiscal instrument is a key countercyclical policy tool. Hence, fiscal rules in the EMU, more than in countries with independent monetary policy, must play a countercyclical role.

However, fiscal rules are not a silver bullet and cannot substitute the national democratic debate on fiscal choices and debt sustainability. Instead, they should help frame this debate. In particular, it is important that fiscal rules do not impose a low or high permanent level of public spending, or a low or high permanent level of taxation. This should be left to the democratic debate. However, the fiscal rules should be such that the levels of public spending and taxation are consistent and generate a sustainable level of public debt. If we agree on the necessity to change the rules, how should this be done?

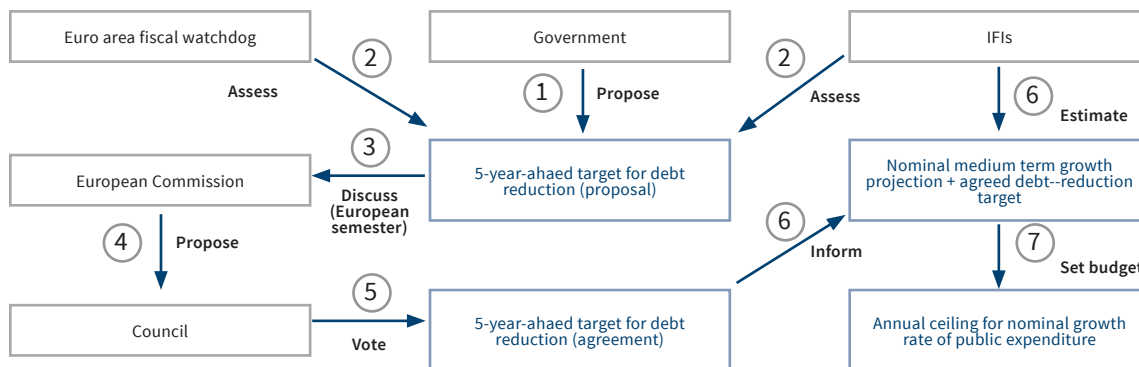
### HOW TO CHANGE THE RULES?

In a nutshell, fiscal rules should be as transparent as possible, set targets under the direct control of the government, allow countercyclical fiscal policy, and generate incentives to reduce excessive public debt.

The Stability and Growth Pact (SGP), put in place in 1997, clarified and complemented the fiscal criteria and in turn was reformed in 2005, in 2011 (by the so-called “Six-pack”), in 2012 (by the so-called “Fiscal compact”), and in 2013 (by the so-called “Two-pack”). Beyond these legislative acts, the European Commission regularly updates and extends a detailed Code of Conduct and a detailed Vade Mecum, which specify various aspects of the implementation of the fiscal rules. Moreover, academia has proposed a myriad of reforms to European fiscal rules. Budget federalism with “cycli-

Figure 1

## Institutional Process of the Expenditure Rule



Source: Authors' illustration.

cal transfers” across states has long been put forward as an efficient way to stabilize the economy in Europe but remains hard to implement politically (see Italianer and Pisani-Ferry 1992). Other proposals include the golden rule for public finance (Truger 2015) inspired by the British rule, where the budget is balanced but leaves public investment to be financed through borrowing. This proposal is appealing because of its good cyclical properties, but opens up the Pandora’s box that is the definition of public investment. Several proposals put public debt level as cardinal point for fiscal rules. The long-term target for the public debt level is already included in the European rules since if public debt is higher than 60 percent, it must decline annually by at least 5 percent of the gap between the actual debt level and the 60 percent reference value. However, the 60 percent reference point is ad hoc and should rather take into account country-specific characteristics, such as the initial level of public debt, and could be revised. As pointed out by Teulings (2018), this reference point might be incompatible with the aging population in big eurozone countries (Germany, Italy, Spain) that is likely to lead to higher savings and thus to low interest rates, deflation, and increasing level of public debt.

Contributing to this lively debate, we propose a major overhaul that builds on a recent report from the French Council of Economic Advisors (see Darvas et al. 2018). We recommend substituting the present numerous and complex rules with a new, simple rule focused on limiting the annual growth rate of expenditures. Other economists (Claeys et al. 2016; Benassy-Quéré et al. 2018; Feld et al. 2018) have made similar recommendations and international organizations – such as the IMF – have published positive analyses on such rules (Debrun et al. 2018).

Our expenditure rule requires that nominal expenditures do not grow faster than long-term nominal income, and that they grow at a slower pace in countries with excessive levels of debt. This translates into a two-pillar approach: (1) a long-term target debt level, such as 60 percent of GDP; and (2) an expenditure-based operational rule to achieve the anchor.

The expenditure rule could take the following form: the growth rate of nominal public spending (net of interest payments and of unemployment spending and after properly taking into account public investment) is the sum of real potential growth and expected inflation, minus a debt-brake term that takes into account the difference between the observed debt-to-GDP ratio and its long-term target (which we take to be 60 percent in line with the EU Treaty). The key parameter in this formulation is the speed at which the country converges to its long-term debt target (i.e., the debt-brake parameter). In our simulations of this formula, we found that a public spending rule with a constant and homogenous debt-brake parameter to reach the 60 percent target does not generate realistic fiscal policy recommendations for certain European countries. In countries with debt levels significantly higher than 60 percent of GDP, the necessary initial budgetary effort is unrealistically high if, for example, the debt-brake parameter is chosen to fit France or Germany. By recognizing this limitation, instead of a set-in-stone numerical formula, we recommend an expenditure rule based on a rolling five-year country-specific debt reduction target. Figure 1 illustrates what could be an ad hoc institutional process for the implementation of this rule.

Each year, the government proposes a rolling medium-term (e.g., five-year-ahead) target for reduction in the debt-to-GDP ratio. This could be part of the existing Stability Programme that member states provide each year to the European Commission. Both the national independent fiscal council and the euro area fiscal watchdog are consulted and provide a public assessment of the target in terms of both feasibility and ambition. A discussion follows with the European Commission. The discussion should be based on an economic analysis where the important parameters would be: (1) the gap between the actual debt-to-GDP ratio and the long-term target of 60 percent (the higher the gap, the more ambitious the adjustment); (2) a broader analysis of fiscal sustainability (in particular, to give credit to countries that undertake solvency-improving

entitlement reforms, or major reforms expected to raise potential growth); and (3) an economic analysis of the economic situation and the relevant path of debt reduction. The economic analysis could, for example, take into account the rate at which countries can borrow. As a result, the pace of medium-term debt reduction should not be determined by a formula. Subsequently, the Commission presents its conclusion for the debt reduction targets for each country to the council, which can vote against it by a reverse qualified majority.

The national fiscal council would prepare a medium-term nominal GDP growth projection based on expected potential output growth, expected inflation, and a possible cyclical correction in case initial conditions depart markedly from long-run equilibrium. Given the medium-term target on debt reduction, the national fiscal council provides a consistent medium-term nominal public expenditure path and uses it to set a nominal expenditure ceiling for the coming year for use in the preparation of the corresponding budget.

Nominal expenditures are calculated net of interest payments, of unemployment spending (except when these are due to discretionary changes to unemployment benefits), and of the estimated impact of any new discretionary revenue measures (changes in tax rates and tax bases). The first two adjustments allow for more counter-cyclicality, while excluding the effect of expenditure-increasing structural measures. The last adjustment is meant to preclude the manipulation of tax rules (for example, tax cuts ahead of an election) that are not compensated by offsetting expenditure measures. It also allows elected governments to make fiscal policy choices (implying different but consistent long-term levels of expenditures and taxes) that reflect political preferences.

Limited deviations between actual and budgeted spending could be absorbed by an “adjustment account” that would be credited if expenditures net of discretionary tax cuts run below the expenditure rule, and debited if they exceed it. These types of accounts exist in Germany and Switzerland. If a country passes a budget with no excessive spending, but realized spending is above the target, the overrun could be financed without breach of the rule, provided that the deficit in the adjustment account does not exceed a pre-determined threshold (for instance 1 percent of GDP). If the threshold has been breached, the country violates the fiscal rule.

We show (see also Claeys et al. 2016) that structural budget balance estimates are subject to large revisions, partly due to the uncertain estimates of the output gap. Based on that finding, one might argue that the medium-term potential growth estimates, which are the basis of our proposed expenditure rule, could be also subject to large revisions – but this is not the case. For example, for the EU15 core countries, the typical revision to the medium-term potential growth estimate is about 0.15 percentage points per year. A down-

ward revision of 0.15 percentage points would imply that if in spring 2018 a country is allowed to increase expenditures by 3.0 percent, in spring 2019 the allowed growth rate of expenditures would be revised downward to 2.85 percent per year. Given that public expenditures amount to about half of GDP, a 0.15 percent revision in expenditures implies an impact of 0.075 percent of GDP on the budget balance, which is rather small and well below the impact of revisions in the structural balance!

#### HOW WOULD SUCH A RULE PERFORM?

We assess the consequences of an application of this expenditure rule through several quantitative simulations by the Observatoire français des conjonctures économiques (OFCE), based on French data (OFCE 2018). The rule itself should not be governed by a simple equation but of course simulations do require a rule to be specified that takes the form:

$$\hat{g}_{i,t} = \hat{y}_{i,t} + E\pi_{i,t} - \gamma_{i,t}(d_{i,t} - \bar{d})$$

where the growth rate of government expenditures of country  $i$  in year  $t$  should be equal to the long-term growth rate of the economy (estimated in year  $t$ ) plus expected inflation in year  $t$  minus the debt-brake term that takes into account the difference between the observed debt-to-GDP ratio at time  $t$  and its long-term target, which we take to be 60 percent. Note that the parameter  $\gamma$  is key and measures the level of ambition on the speed at which countries should converge the long-term debt-to-GDP ratio. This is itself determined by the 5-year target reduction of the debt-to-GDP ratio. It is easy to check that once the 5-year target reduction of the debt-to-GDP ratio is determined, the parameter  $\gamma$  is itself set. Once potential growth and expected inflation are determined, the rule-consistent growth rate of expenditures is defined.

Examples of OFCE’s simulations of France’s debt dynamics and real public expenditures growth rates under three objectives (a -2%, -4%, or -6% decrease in debt over GDP at a five-year horizon) suggest that, depending on the degree of ambition of the 5-year debt reduction target, an expenditure rule can generate debt-reduction dynamics that are similar or less stringent than the present rule. In all cases of the proposed expenditure, the real growth rate of expenditures for France would converge to a bit less than 1 percent (i.e., less than the potential growth rate assumed to be 1.1 percent) but with more front loading of the adjustment in the initial years.

Concerning countercyclical properties for unexpected demand shocks, our rule also performs better. First, the nominal growth rate of expenditures is not affected by the shock, and automatic stabilization is at work due to lower revenues and higher deficits. Second, a negative demand shock generates inflation below expectations. As the growth rate of nomi-

nal public spending is based on expected inflation, such a shock induces a higher real growth rate of public expenditure and therefore a positive fiscal impulse. Concerning supply shocks, such as oil price shocks generating a fall in output and an increase in inflation, the expenditure rule is still stabilizing because it induces a budget deficit, but the higher unexpected inflation slightly reduces its stabilizing properties (relative to the current rule). Overall, if, as is mostly believed, demand shocks are predominant in the euro area, we conclude that the expenditure rule has better cyclical properties than the current rule.

To illustrate the better countercyclical properties of the expenditure rule, Figures 2 and 3 show the observed growth rate of primary public spending in France (in black) and of the fiscal impulse and a counterfactual OFCE simulation of these two series (in color), as generated by an expenditure rule.

Both figures suggest that the rule would be more countercyclical than was observed in France. During good years, the growth rate of public expenditure as well as the fiscal impulse would have been lower; and vice versa, in the period 2011–2013 French fiscal policy would have been more expansionary. Note, however, that in 2009, the rule would have implied what we believe is insufficient fiscal stimulus and this is the reason why we advocate keeping an escape clause in case of exceptional circumstances. This escape clause should be decided at the eurozone level.

### FLEXIBILITY, SIMPLICITY, AND ENFORCEABILITY

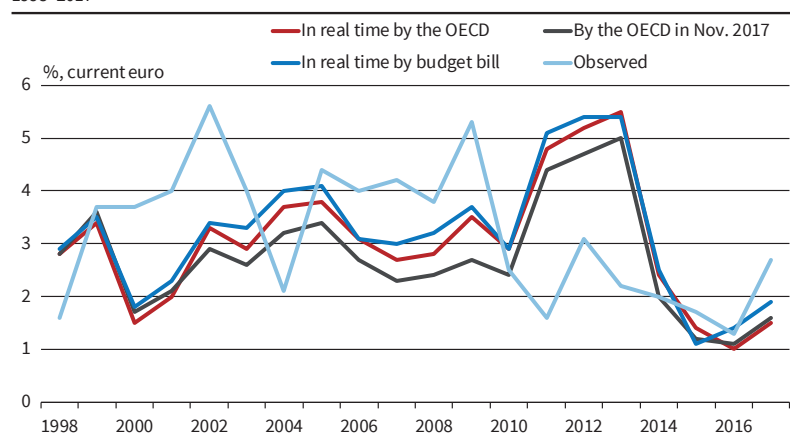
Several studies have pointed out a three-dimensional trade-off faced by fiscal rules (Deroose et al. 2018 and Debrun et al. 2018). The three objectives at stake are flexibility, simplicity, and enforceability.

Regarding simplicity, the proposed rule itself is relatively simple with fewer indicators but de facto adds a layer of rules within the existing framework. As explained by Deroose et al. (2018) a large part of the SGP's complexity does not come from each of its provi-

sions taken individually but rather from the sedimentation of rules. Those rules potentially contradict themselves, make it harder to know which rule is binding, and multiply the number of indicators to be measured and taken into account. It is therefore important to think about the compatibility of the expenditure rule with the existing framework and the potential adjustments to be made. For instance, the rule we propose to add does not necessarily comply with the 3 percent deficit threshold. Because we anticipate that the EU Treaty will not change soon, we exclude the first-best option of rewriting the whole set of rules. Alternatively, it is possible to change the Two-Packs and the Six-Packs with co-decision of the council and the European Parliament and to design a “light excessive deficit procedure” when the 3 percent deficit rule is violated but the expenditure rule is obeyed. This would de facto mitigate the importance of the 3 percent rule and limit the complexity linked with additional layers.

Figure 2

#### Growth Rate of Primary Public Spending in France 1998–2017

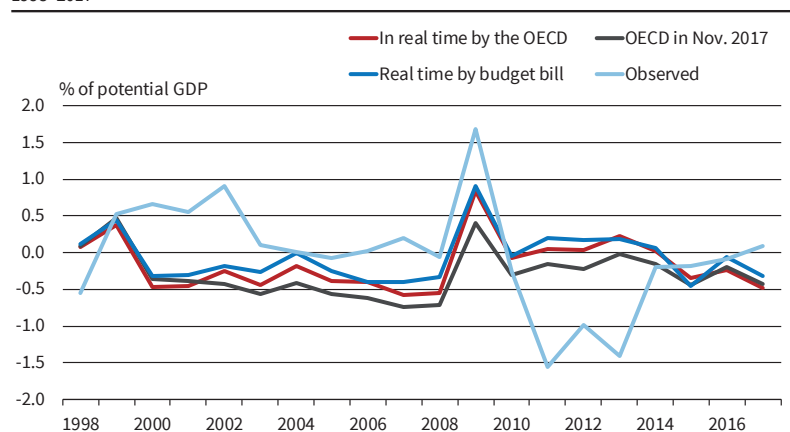


Note: Based on the expenditure rule with potential GDP.  
Source: Ducoudré et al. (2018).

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Figure 3

#### Fiscal Impulse in France 1998–2017



Note: Based on the expenditure rule with potential GDP.  
Source: Ducoudré et al. (2018).

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Regarding flexibility, the simulations of the expenditure rules show that a common debt target is unrealistic and can lead to bad economic effects (Darvas et al. 2018). Moreover, as explained by Teulings (2018), deeper country-specific heterogeneities (like demography) justify that indebtedness targets could differ from one country to another. This is why the target should be country-specific and commonly decided by the member state at the European level. Given the institutional framework proposed to supervise the rule (described above), this flexibility given to the rule does not imply much complexity and can add to the renationalization of the debate on fiscal rules and hence foster its understanding for the general public. Another dimension of flexibility that should be added to the rule is the introduction of an escape clause. Contrary to the German Council of Economic Experts (Feld et al. 2018), we think that the degree of complexity added by the introduction of an escape clause is justified by the need for fiscal stimulus in time of deep economic crisis, as experienced in 2009. To finish with, the absence of an escape clause risks violation of the rule in times of crisis, which would undermine the credibility of the rule. Thus, the escape clause would indirectly reinforce its enforceability.

Turning to the enforceability of the rule, the European experience suggests that enforcing compliance through penalties imposed by what is seen in many countries as bureaucracy from Brussels or political might from Berlin has major deficiencies. Instead, we advocate for a credible enforcement of fiscal rules, mixing several instruments pertaining to surveillance, positive incentives, market discipline, and increased political cost of non-compliance while renationalizing the debate. The Six-Pack reform in 2011 has formalized the role of Independent Fiscal Institutions (IFI) in the budget process for eurozone countries. Such institutions are central in the supervision of the rule.<sup>1</sup> Independent Fiscal Institutions should therefore see their mandate harmonized across European countries and, if needed, broadened in order to match the criteria pointed out by the OECD, namely, integration into the national budget process (including evaluation of medium-term sustainability of public finances and economic analysis), adequacy of resources with the mandate, access to relevant information, credible communication, impartial stance, and good collaboration with parliament.

One possibility is to relate the enforcement of fiscal rules to the creation of a fiscal capacity for the euro-

zone. In a sense, this also shifts the mechanism from using sticks to offering carrots. For example, the participation in a fiscal stabilization scheme that offers one-off transfers in case of large downturns could be made conditional on the compliance with fiscal rules. Market discipline should also be part of the package, even if it has not worked well in the past. In the 2000s, markets did not discipline countries that were running imprudent fiscal policies – or imprudent financial policies that generated excessive private leverage. And, during the euro crisis, market discipline overreacted with mechanisms of self-fulfilling expectations where the fear of default and exit were pushing the cost of several countries' financing to levels that were driving them towards default. Steps have already been taken to guide market discipline. For example, the introduction of collective action clauses to government bonds will likely help to avoid the pre-2007 market complacency. A further “stick” would be to increase the political cost of deviating from the fiscal rule, in line with the objective to renationalize the fiscal debates. For example, whenever the national fiscal council concludes that the rule is not respected, it should hold a press conference and the minister of finance should testify in front of the national parliament. When the European Fiscal Council concludes that the deviation from the rule is major, the minister of finance should also testify in front of the European Parliament.

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<sup>1</sup> French government forecasts on growth one year ahead have been characterized by an optimistic bias on budget balances (0.36 percentage points of GDP on average between 1996 and 2003) and growth (0.57). Only 7 of these 20 countries have a more optimistic bias on the balance forecast than France. Since 2013 and the creation of the French High Council of Public Finance – Haut-Conseil des finances publiques (HCFP) – these biases have been drastically reduced: the budget balance bias forecast is 0.06 percentage points of GDP and the GDP growth bias forecast is at 0.05 percentage points of GDP. Although it is still too soon to fully assess the role of the French IFI on forecast bias, this suggests that the mere presence of HCFP reduced pressure by the government on the forecast unit of the Treasury to “massage” data so as to provide growth forecasts.

## Armin Steinbach

# Making the Best of EU Fiscal Rules and Structural Reforms<sup>1</sup>

An insufficient level of structural reforms remains a perennial phenomenon in the EU. Some of these reforms are critical for the growth and sustainability of the eurozone as a whole, as they imply positive externalities across countries. At the same time, laxity in applying fiscal rules has been viewed as a major cause of sovereign debt turmoil in the euro debt crisis. This reveals a dilemma: strict application of fiscal rules may be counterproductive in cases where economic policy measures may improve the fiscal stance in the long term, the short-term fiscal burden notwithstanding. This applies particularly to two instances: First, public investment may stimulate growth and thus improve the debt-to-GDP situation, while giving rise to numerous controversial issues regarding nature, size, and crowding-out (Mouragne et al. 2016). Second, structural reforms are widely claimed to be necessary in order to foster growth (Griffith and Harrison 2004; International Monetary Fund 2017), while less attention has been given to the fiscal implications of structural reforms.

We address the latter strand of literature by examining the interaction between legal and economic insight in the relationship between fiscal rules and structural reforms. The analytical approach is to indicate avenues of legal interpretation inspired by economic analysis on the impact that structural reforms have on a country's fiscal position. Given political constraints in changing the EU legal fiscal framework (both through modifications to EU Treaties as well as secondary law), this analysis seeks an economic interpretation of the existing EU rules governing fiscal conduct. Put differently: How can legal interpretation lend itself to incorporating economic insight?

Relevant legal questions regarding the enforcement of fiscal rules are: How can fiscal rules be interpreted to the extent that structural reforms should be accounted for under the fiscal governance regime? Can fiscal leeway be granted in exchange for structural reforms? And how can vague legal terms as laid out in EU regulations – such as “prompt” positive budgetary effect of structural reforms or “major” structural reforms (European Commission 2015a; European Commission 2019) – be interpreted with a sound economic rationale? The claim is to make these legal questions

addressable through economic analysis. To understand whether a government should invest time and public expenditure on the costs of structural reforms, it is important to compare the potential short-run fiscal costs to the effects of those reforms on public finances in the long run. In particular, reforms that boost economic growth can improve the fiscal balance in the long run, and so be self-financing despite the fiscal costs in the short run. Methodologically, this can be shown by simulating reform scenarios within a structural model of the euro area.

### THE LEGAL STANCE ON FISCAL RULES

Relevant economic questions are: To what extent do structural reforms alter the fiscal position of a country? What is the short-term versus long-term effect of structural reforms on the fiscal position? Do size and type of the structural reforms matter? These questions are embedded into a legal framework. The EU offers a suitable case to study the interaction of legal and economic questions. More specifically, the Stability and Growth Pact (SGP) is the key instrument of fiscal policy coordination, featuring binding rules and sanction mechanisms (Steinbach 2013). In the past, application of the SGP focused on fiscal policy and compliance with numerical budget rules. Even though the rules have not always been applied consistently due to political reasons, there is a strong inclination in legal and economic scholarship towards strict enforcement of fiscal rules. This stance has been subject to criticism pointing, inter alia, at other elements promoting growth and positive long-term budgetary effects, such as structural reforms. The call for structural reforms has been raised broadly by the IMF, OECD and the EU Commission (European Commission 2015).

In principle, under EU rules the fiscal regime allows integration of non-fiscal considerations at two stages of the fiscal surveillance. Under the preventive arm of the SGP (i.e., ensuring sound budgetary policies over the medium term), the relevant legal provision explicitly states that the Commission and Council shall “take into account the implementation of major structural reforms” when defining the adjustment path to the medium-term budgetary objective.

Thus, “major structural reforms” may, under specific circumstances, justify a temporary deviation from the medium-term budgetary objective of the concerned Member State or from the adjustment path towards it. Less clarity, however, exists as regards the relevant norms of the corrective arm (i.e., correction of excessive deficits). The provisions are silent on the treatment of structural reforms. The only legal term potentially allowing the incorporation of structural reforms into the assessment under the corrective arm states that the Commission “[...] shall take into account all relevant factors [...] in so far as they significantly affect the assessment of compliance with the deficit and debt criteria by the member state concerned”.



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<sup>1</sup> The article contains personal views only and builds on Sajedi R. and A. Steinbach (2019), Fiscal Rules and Structural Reforms, *International Review of Law and Economics* 58, 34-42.

The legal terms have been subject to legal interpretation and implementation. A first legalistic approach to interpretation is to account for the “purpose and spirit” of legal rules as element of the standard teleological method of interpretation. There is no indication that interpreting structural reforms as “relevant factors” would be incompatible with the overall purpose of the excessive deficit procedure, which is to ensure the correction of excessive deficits, that is, making sure that member states return to a sustainable fiscal position. Second, on the basis of its discretionary power, the EU Commission finds that structural reforms can be recognized provided they have a long-term positive budgetary effect, where this effect can have direct budgetary savings from reforms (e.g., pension reform) or through increased revenues (e.g., as a result of increased employment). The plausibility of this interpretation of fiscal rules can be explored by economic methods as presented below. Third, the legal text requires reforms to be “major” in relation to their effect on growth and the sustainability of public finances. Requiring a significant impact enables the EU Commission to request sizeable and effective reforms and the appropriate choice of policy mix. The soundness of this requirement can be assessed through economic modelling. Finally, according to the legal requirement, structural reforms must account for the main purpose of the corrective arm of the SGP, which is to ensure the “prompt” correction of excessive deficits.

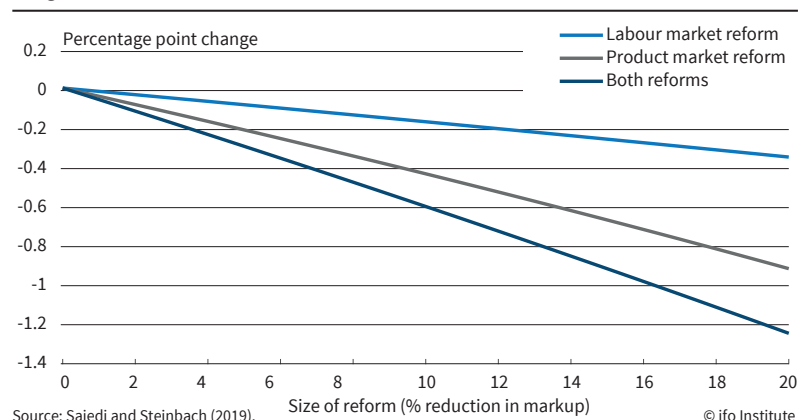
### ECONOMIC ANALYSIS

The legal requirements and interpretations can be subject to an economic review by rephrasing the legal reasoning in economic questions: Do structural reforms alter the deficit-to-GDP both in the short and long run? Only if they do is there rationale to discuss the integration of structural reforms into the fiscal regime, because if, in the short run, deficit-to-GDP increases, this would require flexibility in the enforcement of fiscal rules. And if, in the long run, structural reforms lead to a lower post-reform deficit-to-GDP ratio compared to the non-reform scenario, this offers rationale for granting leeway due to a better ex-post fiscal position.

In our model economy, imperfect competition in product markets leads to a markup of prices over marginal costs, and imperfect competition in labor markets leads to a markup of wages over the marginal disutility of labor. These markups represent the distortions caused by regulations, and structural reforms will be defined as reductions in these markups. We label a

Figure 1

#### Long-run Effects of Reforms



reduction in price markups as “product market reform” (PMR), and a reduction in wage markups as “labor market reform” (LMR). Both of these reforms boost output in the long run by removing distortions created by the excess regulations.

#### Long-run and Short-run Effects of Reforms

To answer the relevant legal questions, we first look at the long-run effects of reforms on deficit-to-GDP. Figure 1 shows the decline in the deficit-to-GDP ratio for different size reforms, measured here by the percentage reduction in markups. It presents the case of LMRs and PMRs separately and if both reforms are combined. Naturally, the deficit-to-GDP ratio falls further for larger reforms, and falls the furthest when both reforms are carried out. However, it is clear that most of the gains in deficit-to-GDP come from the PMRs, with even very large LMRs having only small effects. On the other hand, LMRs and PMRs together – reducing the markups by 15–16 percent, which would bring the periphery countries in line with core countries in the euro area – can cut the deficit-to-GDP ratio by a full percentage point. Nonetheless, for small reforms of either type, the gains are small.

Regarding short-run effects of structural reforms, in the first scenario we consider, No Stabilization, where fiscal policy remains fixed, there are short-run output costs from the reform. Notice that these short-run output costs lead to movements in the deficit-to-GDP ratio even without any active fiscal policy response. In the second scenario, Active Stabilization, governments spend to offset the short-run output costs of reform. While output is stabilized in this scenario, additional fiscal costs arise due to the excess spending.

Table 1 reports the results. An active fiscal stimulus can offset the short-run output costs of reform, but with an additional rise in the deficit. In particular, we find that the PMRs have the highest fiscal costs from active stabilization. In this case, the deficit-to-GDP can rise by 0.3 percentage points, with a total fiscal cost of

Table 1

**Short-run Costs of Minor Reforms**

1% Reforms (minor)	Long-run Gain (percentage points)	Peak Deficit-to-GDP Deviation (percentage points)		Total Excess Deficit (% Initial GDP)	
		No Stabilization	Active Stabilization	No Stabilization	Active Stabilization
PMR	0.04	0.04	0.30	0.01	0.58
LMR	0.02	0.03	0.08	0.03	0.22
Both	0.06	0.06	0.34	0.02	0.72

Source: Sajedi and Steinbach (2019).

almost 0.6 percent of the initial GDP. In contrast, the LMRs require a rise in deficit-to-GDP of only 0.08 percentage points and a total excess deficit of 0.22 percent to offset the short-run output costs.

Given the positive budgetary long-term effect of structural reforms, the legal rules should be applied with a degree of leniency, allowing for a short-term deterioration of the fiscal position in return for a stronger long-term fiscal position. Further, the above applies not only to accepting the fiscal deterioration due to the immediate short-term contraction from structural reforms, but also extends to fiscal stabilization. While active stabilization amplifies the fiscal deterioration in the short-term, it allows a return to the same post-steady-state fiscal position (and a better fiscal state than without the structural reforms being carried out) as in the scenario of no stabilization, that is, strict enforcement of fiscal rules. Moreover, unlike the no stabilization scenario, if active stabilization is pursued, the output losses associated with structural reforms are fully offset, offering a desirable macroeconomic smoothing effect. In other words, leeway granted to the enforcement of fiscal rules comes at a considerable, but recoverable, fiscal cost in return for a significant macroeconomic benefit.

The results reported in Table 1 for minor structural reforms (size: 1 percent) appear to be in line with the European Union's current enforcement practice. As set out in European Commission (2019) and European Council (2017), the EU ties the flexibility under the SGP to certain conditions. The temporary deviations must not exceed 0.5 percent of GDP and, in addition, the cumulative temporary deviation granted under the structural reform clause must not exceed 0.75 percent of GDP. Our analysis shows that even if structural reforms are adopted cumulatively, the peak deficit-to-

GDP remains below 0.5 percent of GDP and the total excess deficit does not exceed 0.75 percent.

**Gauging Prompt Correction of Deficits**

EU law has been specified to require that deviation is temporary only and that Member States invoking the structural reform clause return to their MTO.<sup>2</sup> Specifically, the EU implementation practice foresees that in the fourth year of the adjustment period, the deviation is no longer applied and the Member States is required to adjust (European Council 2017; European Commission 2019).

To capture whether the reforms lead to a “prompt” correction of deficits, we report two statistics in Table 2. First, we report the number of periods before the deficit-to-GDP falls below its initial level, in other words, the time before the fiscal gains from the reform materialize. Second, we calculate the ratio of the total excess deficit to the long-run gains from the reform, which captures the number of periods that it would take for the reduced deficit in the long run to repay the excess deficit in the short run. Again, we calculate these for different types of reform and under the alternative short-run policy scenarios.

Looking first at the time for the fiscal gains to materialize, we see that without active stabilization it can still take between 9 and 18 months (3–6 quarters) for deficit-to-GDP to fall below its initial level. With active stabilization, this rises to 18–24 months (6–8 quarters). Despite the smaller fiscal cost, we see that the LMR takes the longest to provide any fiscal gains,

<sup>2</sup> Article 1 of Council Regulation (EC) No 1467/97 of 7 July 1997 on speeding up and clarifying the implementation of the excessive deficit procedure provides that the main purpose of the corrective arm of the Pact is to ensure the prompt correction of excessive deficits.

Table 2

**Prompt Correction of Deficits under Baseline Reforms**

1% Reforms	Time until Fiscal Gains Materialize (quarters)		Time until Fiscal Costs are Repaid (quarters)	
	No Stabilization	Active Stabilization	No Stabilization	Active Stabilization
PMR	3	6	0.25	16
LMR	6	8	2.50	19
Both	4	7	0.45	15

Source: Sajedi and Steinbach (2019).

but again the two reforms together can provide complementarities that make the fiscal gains materialize faster than the LMR alone.

Looking at the time to repay the total excess deficit with the long-run fiscal gains from the reform, we see a similar pattern, with LMRs implying the longest time to repay. This is due to the fact that the long-run gains are smaller for LMRs, meaning that even the smaller long-run costs take longer to be repaid. Still, without active stabilization these numbers are small, with a maximum of 6–9 months to repay the costs of the LMR. On the contrary, with active fiscal stabilization, these numbers are much larger. It can take 4–5 years (16–19 quarters) to repay the costs of either reform alone, and still close to 4 years (15 quarters) to repay the cost of the reforms together.

Given that EU fiscal enforcement practice requires states to reach their MTO within the four-year horizon, this requirement is largely compatible with the realistic pace of positive budgetary effects from structural reforms. In most cases, fiscal recovery remains within the four-year period, but additional flexibility would be needed if (labor market) reforms are sidelined by active fiscal stabilization.

### Defining “Major” Structural Reforms

Finally, to gauge what should count as a “major” reform with significant fiscal implications (as required by European Commission 2019; European Council 2017), in Table 3 we compare the baseline reforms against two larger reforms of 5 percent and 10 percent reductions in markups. Firstly, as seen earlier in Figure 1, the long-run gains from the reforms increase almost exactly linearly with the rise in the size of the reform. For the most part, the short-run costs of reforms also increase with the size of the reform, but costs increase proportionally less than gains as structural reforms become more substantial. The increase in the deficit-to-GDP that is implied by the larger reforms rises marginally in the case of no active stabilization, but increases almost linearly with the size of the reform in the case of active stabilization. Even for the 5 percent reforms, there are

now sizeable increases in the deficit-to-GDP of around 1.5 percentage points implied by the PMRs and the joint reforms.

Hence, the “major” requirement attached to the size of structural reforms can be determined on the basis of the economic analysis. In principle, excluding minor structural reforms from being eligible for fiscal leniency does not seem compatible with the linear relationship of short-term costs and long-term benefits across different sizes of structural reform. That is to say that minor structural reforms also produce higher benefits than costs and should generally be accepted. Also, while larger reforms typically produce larger absolute benefits and should thus be preferable over small size reforms, they also require proportionally more fiscal leniency in the short run. Finally, the economic analysis further refines our understanding of the type of structural reform that should be implemented. PMR tend to produce larger deficit-reducing effects than LMR and should, from this perspective, be preferred. Also, there is an indication that a combination of both PMR and LMR offer fiscal advantages, as the total excess deficit is less than the sum of the individual reforms, suggesting complementarities between the reforms. Hence, the legal term “major”, from a perspective of teleological interpretation, should not only be indifferent for the size of the reform but also account for the type of reform to be pursued.

However, the results reveal significant differences in fiscal costs associated with active stabilization, implying higher peak deficit-to-GDP deviations and total excess deficit. In case of no stabilization, the thresholds set by EU fiscal enforcement practice are met (0.5 percent peak deviation and 0.75 percent cumulative temporary deviation), and this even holds true for major structural reforms (as defined as 5 percent and 10 percent reductions in markups). Yet there is a clear violation of the fiscal rules if active fiscal stabilization is pursued to sideline structural reforms (up to 2.87 percent peak deficit-to-GDP deviation). This shows that the current rules allow for an active fiscal policy by which government consumption expenditures react to the output gap only in the case of minor structural

Table 3

#### Short-run Costs of Major Reforms

Reform Scenarios (major)	Long-run Gain (percentage points)	Peak Deficit-to-GDP Deviation (percentage points)		Total Excess Deficit (% Initial GDP)	
		No Stabilization	Active Stabilization	No Stabilization	Active Stabilization
<b>5% Reforms</b>					
PMR	0.21	0.12	1.43	0.03	2.79
LMR	0.09	0.10	0.33	0.14	1.01
Both	0.30	0.22	1.50	0.07	3.16
<b>10% Reforms</b>					
PMR	0.44	0.21	2.68	0.01	5.03
LMR	0.17	0.16	0.45	0.21	1.24
Both	0.61	0.39	2.87	0.05	6.01

Source: Sajedi and Steinbach (2019)

reforms (size: 1 percent), with active fiscal policy for major structural reforms (size: 5 percent and 10 percent) ruled out due to its significant impact on budget deficit. This approach under EU fiscal rule enforcement is contradictory. On the one hand, it ties eligibility for fiscal flexibility to the performance of major rather than minor structural reforms. On the other hand, it does curtail fiscal expenditures smoothing the impact on output gap due to structural reforms. Hence, the current fiscal regime does not appreciate the positive effect of active fiscal policy as a tool to counteract the adverse fiscal effects of structural reforms.

Finally, as regards the four-year period set out in EU fiscal enforcement practice (European Council 2017), larger reforms require similar periods for fiscal deficit to be repaid. However, since the fiscal gains of larger reforms increase more quickly than the fiscal costs compared to minor reforms (as can be seen from Tables 1 and 3), the fiscal costs of larger reforms should be recoverable slightly more rapidly than those of minor reforms.

## CONCLUSIONS

Structural reforms are generally desirable within an economic union, as they offer positive spillovers for other countries as well. They may, however, go along with fiscal burden in the short term. An imminent issue of economic policy is how fiscal discipline and (costly) structural reforms can be reconciled. This analysis offers the economic underpinning necessary to sustain an economically sound legal interpretation of EU fiscal governance rules. Given the nature and size of the positive fiscal long-term effects, there is a strong indication towards employing an interpretation of fiscal rules in light of these effects. Hence, the analysis rejects a rigid application of fiscal rules ignoring the effects of structural reforms in the long-term. Rather, there is scope for a “stick-and-carrot” application of fiscal rules rendering structural reforms a suitable incentivizing device for fiscal leeway (and thus sparing the country from sanctions for rule violation).

The results may further inform the ongoing debate on reforming EU economic surveillance. Recent policy proposals have stressed the importance of structural reforms and pointed at the use of existing instruments in implementing structural reforms (European Commission 2018). We provide insight for designing fiscal rules in a way that permits the effect of structural reforms to be taken into account. Our results also feed into the debate on reforming the SGP. To date, a significant part of the relevant policy practice examined in this analysis has emerged through administrative practice – mainly in the guise of non-legal and non-binding but practically relevant enforcement guidelines (European Commission 2015a, 2019) or Codes of Conduct (European Council 2017) rather than being stipulated as precise and operational legal rules in EU law. Both from a legitimacy as well as a predictability perspective, a

reform of the SGP should abandon this practice of administrative dominance and instead incorporate the insight from this analysis into the relevant legal rules of the SGP (i.e., on the level of EU secondary law). This requires changes to the current legal SGP rules in three regards.

First, while maintaining the objective of ensuring long-term fiscal viability as the primary goal of EU fiscal rules, there should be sufficient discretionary margin to allow short-term fiscal leniency for structural reforms on the condition that they are suitable to improve long-term fiscal viability. Requirements related to the size of the structural reform must correspond with sufficient policy flexibility on the budgetary effect, without ruling out counter-cyclical expenditures sidelining structural reform in order to smooth its impact on output gap. This requires the current caps on permissible peak deviation and cumulative temporary deviation (0.5 percent and 0.75 percent, respectively) to be loosened, as these caps curtail fiscal smoothing of the output gap disruptions due to structural reforms.

Second, reference to the prompt correction of excessive deficit should be integrated into SGP rules, with a further concretization added that excess deficit due to structural reforms should generally be repayable within five years (rather than the current period of four years). As seen even if fiscal reforms are sidelined by active fiscal counter-cyclical policy (fully offsetting output losses associated with structural reforms), fiscal gains from major structural reforms exceed the cumulated deficits after the period of five years at the latest.

Third, references to the desired size of the reform (“major”) should be abandoned given that minor structural reforms also produce positive fiscal effects. However, legal rules should ask for an appropriate combination of both PMR and LMR given the complementarities between the reforms, as highlighted in this analysis.

On a more general note, our analysis calls for a coordination of economic policies recognizing the interdependent nature of fiscal policy and structural economic policies. Future institutional arrangements should reflect that enforcement of fiscal adherence should not be pursued as a short-term objective per se. Rather, such arrangements should incorporate the positive long-term fiscal effects associated with sound structural policies.

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## A Eurozone Budget – For Which Purposes Exactly?

### INTRODUCTION

The fact that monetary policy in the euro area has been centralized, while fiscal policy has essentially remained a national responsibility, is what Anglo-Saxon economists in particular have described as the original sin of the European Economic and Monetary Union (EMU). With reference to the theory of optimal currency areas, there is a plea for more fiscal integration in the EMU. The Glienicke Group (2013) as well as Dolls et al. (2014) can be mentioned here as examples from the field of science. However, enhanced fiscal integration in the EMU is not a panacea, and could result in considerable drawbacks under the current political circumstances. The following is a brief overview of some of the proposed fiscal policy instruments at EMU level, in addition to a general evaluation.

To begin with, there are proposals for far-reaching institutional changes to the fiscal architecture of the EMU, which include the creation of a European finance minister who could avail of a fiscal capacity, or the introduction of Eurobonds based on joint liability as a means for member states to raise funds based on a safe asset (Busch and Matthes 2012). Such proposals would help EMU countries finance their budgets, but also incur the risk of overspending at the expense of other member states.

To avoid moral hazard, EMU countries would have to surrender (part of their) fiscal sovereignty to the central level. For example, a European finance minister would have to be able to prevent national parliaments from implementing unsustainable public budgets. However, there is no political willingness in EMU member states to go this far. This limits the scope of any further fiscal integration in Europe, as liability and control have to go hand in hand. In the following, the focus is thus laid on less far-reaching proposals for a central fiscal capacity at euro area level. Nevertheless, the president of the Eurogroup has revived the discussion about a finance minister for the euro area in the context of the discussion about a eurozone budget that will be discussed in the following.

The meaning of a “central fiscal capacity” is not clearly defined. According to mainstream proposals, it is often intended to foster macroeconomic stability should individual EMU countries be hit by an asymmetric shock. This is regularly justified by the argument that the requirements of the Stability and Growth Pact (SGP) would impose fiscal constraints on individual member states so that they would not be able to react

adequately in the event of an economic downturn. In addition, in the context of the optimum currency area (OCA) theory there is the argument that central fiscal stabilization is needed in a monetary union because individual member states can no longer devalue their currency in order to regain lost competitiveness. It is also no longer possible for them to manage their own monetary policy.

Macroeconomic stabilization could in principle be achieved in different ways through a common fiscal capacity in the euro area. Two such methods are deemed most suitable for fighting recessions (European Commission 2017a). First, the fiscal capacity could help stabilize public investment expenditure, which is particularly at risk of being cut in an economic downturn. Second, a fiscal capacity could potentially function as an unemployment reinsurance system and could reimburse part of the rising expenditure on unemployment benefits in the member states.

There are different options as to how to organize a potential fiscal capacity: it could be based on an independent budget of only EMU member states, or it could be broadly based on the budget of the EU-28 with special assignments for EMU member states, potentially in the form of a special budget line. Partly depending on this decision, there are also various options as to how the financial resources for a fiscal capacity can be raised: resources from the EU budget, special contributions by EMU member states (in relation to their GNI), and new sources of revenue stemming from new taxes. Financing through borrowing can also be considered, at least in principle. Obviously, any decisions regarding the organization and the financing mechanism would have consequences for the governance structure of a fiscal capacity, i.e., for whoever is entitled to decide on the allocation of funds.

### STATE OF THE POLITICAL DEBATE ON A FISCAL CAPACITY AT EMU LEVEL

#### Proposals by the European Commission on an EISF

Apart from proposals from academia, the idea of a fiscal capacity has also been raised in the political arena. At EU level, important proposals for the creation of a fiscal capacity in recent years include the 2015 Five Presidents’ report (Juncker 2015), the 2017 White Paper of the European Commission (2017b), and the related Reflection Paper on the deepening of the EMU (European Commission 2017a). More specific proposals were made in the Commission’s Roadmap for deepening the EMU (the so-called ‘Saint Nicholas’ package of December 2017) and in the Commission’s proposals for the Multiannual Financial Framework (MFF) for the years 2021 to 2027 (European Commission 2018). In the latter, the Commission proposes several instruments that could be part of a fiscal capacity for the euro area (for an evaluation, see Hüther and Matthes 2018; Demary et al. 2018).



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As a fiscal stabilization facility against macroeconomic shocks, a European Investment Stabilisation Facility (EISF) is put forward. In the event of an asymmetric shock, a member state could receive a (back-to-back) loan in order to stabilize public investment. The Commission defines an asymmetric shock as a situation in which the quarterly seasonally adjusted unemployment rate has risen by more than one percentage point compared with the previous quarter, and is above the average of the previous 60 quarters. Moreover, the proposal specifies particular access conditions in order to mitigate moral hazard concerns. The precondition for access to the EISF is that the economic policy of the applicant member state has complied with the rules of the EU's economic and fiscal surveillance framework in the period prior to the shock. This concept of ex ante conditionality appears reasonable and can be distinguished from the ex post conditionality applied in the context of a full ESM program, which requires a reform program as a precondition for financial support.

In terms of financing, the Commission aims to allocate EUR 30 billion to the EISF and establish the fund primarily within the EU budget, but outside the EU budget's expenditure ceilings proposed for each policy area. The proposal sees this EUR 30 billion used for loans which are guaranteed by the EU budget. The Commission would borrow the loans on the capital market and would lend them to the applicant state that has been hit by an asymmetric shock (back-to-back loan). Although the EU may not finance itself through loans, it may take out back-to-back loans within the margin between the budgetary framework and the own resources ceiling. The Commission's borrowing capacity is therefore limited. The Commission's proposal also contains a small transfer component in the form of interest subsidies to cover the costs of borrowing for the crisis state, but probably only after the loan has been repaid.

The Commission has also proposed other components of a potential fiscal capacity that focus more on structural policy aspects. This pertains to a EUR 25 billion Reform Support Programme for the new MFF, financed from the EU budget, to assist member states with institutional, administrative, and growth-enhancing structural reforms. The Reform Support Programme consists of three parts: a Reform Delivery Tool (EUR 22 billion) to foster and financially support reforms in the context of the European Semester; a technical support instrument (EUR 0.84 billion) to assist specifically with the administrative implementation of reforms; and a convergence facility (EUR 2.16 billion) to help "EMU outs" to prepare for the EMU.

### **French-German Initiatives and the Reaction of the Eurogroup**

On a parallel track, the political process towards more fiscal integration in the EMU has been driven by France and Germany. Even though the Commission's propos-

als drew on important elements of the positions of both countries, several joint proposals of France and Germany exerted a more direct influence on the decision-making process of the Eurogroup and the Euro Summit.

It is striking that the French-German compromise on more fiscal integration in the EMU involved a major change in the German position on EMU reform. Previously, the need for a central fiscal stabilization function to sustain the EMU was broadly and constantly denied in conservative circles in Berlin. However, in the course of late 2017/early 2018, the position of the German Chancellor and of major parts of the CDU/CSU seemed to shift. This appears to be mainly due to the French president's strongly pro-European efforts and initiatives. In fact, Emmanuel Macron strongly favors an EMU-19 budget with a sizeable central fiscal stabilization function, particularly to support investment in economic downturns. With his impressive election campaign and particularly with his now famous Sorbonne speech in September 2017, Macron held out a hand that pro-European conservatives in Germany could not completely refuse to take. Thus, in the French-German duet, Macron clearly set the tone.

The change of course in the German position manifested itself in the coalition agreement of March 2018 (CDU/CSU/SPD 2018). On European issues, the agreement was interpreted to be a concession on the part of the CDU/CSU to the more integration-friendly SPD. The agreement advocates specific financial resources for "economic stabilization" and "social convergence," as well as "support for structural reforms in the euro area," which could be the "starting point for a future investment budget" of the euro area. A further milestone was an extensive newspaper interview with Angela Merkel (2018) on European challenges in early June 2018, in which she also briefly set out her views on EMU stabilization. By arguing for a short-term credit facility of the ESM, she also implicitly recognized the need for fiscal stabilization instruments. Moreover, she reiterated Macron's idea of an EMU budget for investment purposes. However, in her view, such a budget should focus not on macroeconomic stabilization but on mitigating structural weaknesses by fostering competitiveness and convergence.

This was followed by the formal French-German initiative of the Meseberg Declaration in mid-June 2018 (Bundesregierung 2018), together with a joint paper of both finance ministries (Nonpaper 2018). By that time, Paris had managed to get Berlin to agree to a stabilization function as a part of a "Eurozone budget within the framework of the European Union to promote competitiveness, convergence, and stabilization in the euro area, starting in 2021." The finance ministries' roadmap for the euro area put forward financing options such as, among others, new taxes on financial transactions or on the digital economy. It also included a vague proposal for a European Unemployment Stabilisation Fund. This suggestion was understood to be a pet pro-

ject of the German finance minister, in his attempt to also set the agenda in Germany (besides the Chancellor) and to position himself as sufficiently integration-friendly within the SPD.

The German-French proposal for a “Eurozone budget for competitiveness, convergence, and stabilization” was of major importance to the political debate. It was reiterated just a few days later in a letter from Eurogroup President Mário Centeno to the Euro Summit that took place at the end of June (Centeno 2018). However, Centeno had to report that differences remained on this issue among the finance ministers of the Eurogroup (in inclusive format, including EMU outs except the UK). Obviously, the initiative of the French-German tandem – which is usually considered to set the agenda – was met with considerable resistance.

In fact, a new grouping dubbed the Hanseatic League 2.0 had emerged in the political arena towards the end of 2017 (Financial Times 2017). Now led by the Netherlands, it includes, among others, Ireland, Austria, and the Baltic countries. The emergence of this group can (also) be understood as a reaction to the German government’s change of course on EMU issues (and to Brexit). In the past, most smaller EMU members of the Hanseatic group supported Germany’s opposition to more fiscal integration for stabilization purposes. From this comfortable position, hiding behind Germany’s broad shoulders, they now had to step to the fore and stand up for their arguments. As a result of strong opposition from the Hanseatic League 2.0, particularly from the Netherlands, the Eurogroup report of early December 2018 to the Euro Summit in mid-December 2018 eliminated the stabilization function from the purposes of the Eurozone budget and deferred it to technical discussions alone (Eurogroup 2018).

### **Budgetary Instrument for Convergence and Competitiveness (BICC)**

This left only convergence and competitiveness as objectives for the envisioned EMU budget. Accordingly, the Euro Summit in December 2018 tasked the Eurogroup to design the features of a Budgetary Instrument for Convergence and Competitiveness (BICC) within the context of the MFF.

Again, a (leaked) French-German proposal (Non-paper 2019) set the tone for the discussions.

However, no common position has yet emerged regarding financing aspects. The BICC will be part of the EU budget, but France in particular intends to enlarge the funding base through regular contributions from EMU members only. With this step, France also intends to open the door for autonomous decision making of EMU members. This would likely require an Intergovernmental Agreement (IGA). Even though Germany resents France’s EMU-only approach and insists on keeping fiscal integration open to all EU members, Berlin has broadly supported the French proposal. However, other finance ministers in the Eurogroup do

not seem convinced of the need for an IGA. Based on the endorsement of the progress achieved so far by the Euro Summit in June 2019, the Eurogroup will thus strive to achieve agreement in autumn 2019 so that the BICC can be included in the final phase of the MFF negotiations.

### **EVALUATION OF SPECIFIC PROPOSALS FOR MORE FISCAL INTEGRATION**

#### **Central Fiscal Stabilization Instrument**

Concerning a possible central fiscal stabilization mechanism in the EMU, we share the scepticism of the Hanseatic League 2.0 for various reasons. The arguments brought forward to justify such an instrument do not appear to be sufficiently convincing (Matthes, Iara, and Busch 2016).

First, to justify a central fiscal stabilization instrument with the alleged limited flexibility of the SGP appears problematic. The SGP prescribes a balanced budget in normal times, in principle, so in a crisis there is ample fiscal space for national countercyclical fiscal policy up to the fiscal deficit ceiling of 3 percent of GDP. Moreover, in crisis situations, the 3 percent criterion is not sacrosanct. Thus, the SGP leaves plenty of room for fiscal maneuver to combat economic crises. Indeed, from the point of view of the subsidiarity principle, fiscal economic stabilization is primarily a national task (Diermeier et al. 2018). In the recent crisis, fiscal space was not available in the downturn to some countries, for the precise reason that they had not adhered to the SGP rules beforehand (it was also due to the impact of the global financial crisis). To justify a greater degree of common risk sharing without adherence to the SGP is highly questionable.

Second, from the economic perspective of the OCA theory, the EMU appears to be in better shape than its reputation suggests, at least on closer inspection (Matthes and Iara 2017).

Structural reforms in the southern EMU countries have reduced EMU countries’ heterogeneity in terms of the key aspect of labor and product market regulation.

The one-size-does-not-fit-all problem of monetary policy, with its problematic real interest rate effect, can be tackled in a country-specific manner by means of macroprudential policies that have proved to be effective.

The adjustment capacities to asymmetric shocks also appear better than commonly suggested. Structural reforms have enhanced price and wage flexibility. Indeed, by drawing on micro-data, nominal and real wage flexibility has been shown to be as high in southern European countries as it is in the United Kingdom and the reaction of wage policy to unemployment broadly as high as in the United States (Verdugo 2016). Equally, short-term labor mobility has been proved to be as high as it is in the United States in the recent crisis (Beers et al. 2014).

However, even though the OCA properties of the EMU appear better than commonly suggested, there is no guarantee that they will suffice to ensure the EMU's future sustainability. Indeed, high public debt burdens render some EMU countries vulnerable to economic shocks. Therefore, it appears reasonable to introduce an ESM-light instrument based on sound and reliable ex ante conditionality, as has been suggested (Matthes 2017) and as the Eurogroup proposed in December 2018. On top of this ESM-based stabilization tool, it appears that further fiscal stabilization tools in connection with a eurozone budget are not indispensable.

Upon final analysis, the question of whether or not an additional stabilization instrument for a greater degree of risk sharing among EMU members should be recommended from an economic point of view depends on the degree of risk aversion. When deciding on this issue, political considerations also come into play. As already pointed out in the introduction, more fiscal integration (or risk insurance) always incurs the risk of moral hazard, i.e., national misconduct. For example, the existence of a common unemployment insurance system could reduce incentives for member states to make their national labor markets more resilient. Moreover, the possibility of unintended permanent transfers has to be considered. It is true, that most proposals do not intend a central fiscal stabilization instrument in the EMU to redistribute financial resources among EMU members in the long term. However, there is no way of saying whether this goal can be achieved.

Intelligent rules for new instruments might be imagined to mitigate both the risks of moral hazard and of permanent transfers. However, there is no guarantee that such rules would be followed in all circumstances due to time inconsistency problems. Experience to date with Europe's fiscal rules is not particularly encouraging in this respect, as they involve large degrees of flexibility and discretion.

### **Budgetary Instrument for Convergence and Competitiveness**

It is true that the EMU lacks income convergence and that certain EMU countries lack competitiveness. Reforms to tackle these weaknesses would surely improve the functioning of the EMU. However, it is questionable whether a country should receive money for structural reforms from the EU if the measures are in the member state's own interest. A certain justification might lie in the fact that some structural reforms incur economic or political costs that reduce the incentive for policy makers to undertake such reforms. However, it is very difficult to quantify such costs. Moreover, the danger is that offering money for reforms reduces the ownership of structural reforms. In other words, a reform might be undertaken simply because money is being made available from Brussels, even though the respective national government is not convinced that the reform is justified. This could pose risks for the opera-

tional implementation and sustainability of reforms in the medium term. Moreover, the BICC runs the risk of subsidizing reforms that would have been carried out anyway.

The BICC focuses on the structural weaknesses of the EMU countries, as do the existing structural and regional policies of the EU. The focus of the BICC on investment also coincides with the InvestEU project and the EFSI. Thus, there is a risk of developing inefficient twin structures. For example, financial support is also foreseen for EMU outs to help them prepare for joining the EMU. Yet the Cohesion Fund is already designed to help prepare for the euro. In fact, in 2017 alone, the EMU outs received around EUR 5.6 billion from the Cohesion Fund, while the other member states that met the eligibility criteria received EUR 1.5 billion. In contrast, the Commission has proposed a budget of EUR 2.16 billion for the above-mentioned convergence facility for the entire seven-year funding period of the next MFF.

The redundancy of conflicting twin structures could be partially mitigated if the BICC focused especially on fostering innovation in lagging countries, or if the BICC provided more flexibility in the shorter term to change the allocation of resources in line with changing priorities. However, another tricky problem is that it is unclear how the BICC could avoid the kind of waste and lack of effectiveness from which the EU's structural funds suffer.

Various arguments come into play concerning financing aspects. If the BICC were based on grants, the financial needs would be larger than if it relied on loans. Basing the BICC within the MFF of the EU budget tends to limit its financial scope. This would be all the more true if, in the course of current MFF negotiations, funds for structural policy programs were reduced in substitution for the BICC. Nevertheless, introducing the BICC opens the door for potential future extensions of its financing.

Overall, there is a risk that in order to accept even the briefest shake of Macron's hand, a false compromise will be reached by creating a new instrument that is redundant, overly bureaucratic, and lacking in effectiveness. The BICC needs to be very cleverly designed if it is to avoid these potential drawbacks.

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## Thorvaldur Gylfason From Equality, Democracy, and Public Health to Economic Prosperity

*We can have democracy in this country,  
or we can have great wealth  
concentrated in the hands of a few,  
but we can't have both.*

Louis Brandeis,  
US Supreme Court Justice 1916–1939.



Thorvaldur Gylfason  
University of Iceland.

Inequality in the distribution of income and wealth was long considered to lie outside the purview of mainstream macroeconomics. Distribution issues were widely seen as normative in nature. Many economists doubted that distribution, just or unjust, could matter much for macroeconomic performance. Courses on distribution were rare in university curricula. The idea that rich and poor households save different proportions of their incomes, with potentially important macroeconomic consequences, did not leave a lasting imprint on mainstream macroeconomics. The notion that consumers and workers care about relative incomes and wages did not make a lasting imprint either (Duesenberry 1949; Gylfason and Lindbeck 1984).

Then, all of a sudden, inequality was ushered into the mainstream. Piketty's *Capital* (2014) became an overnight sensation, following several other important books dealing with distribution, including Deaton's *Great Escape* (2013), Galbraith's *Inequality and Instability* (2012), Milanovic's *Worlds Apart* (2005), Rajan's *Fault Lines* (2011), and Stiglitz's *Price of Inequality* (2013) and *The Great Divide* (2015). The works of Anthony Atkinson, Thomas Piketty, Emmanuel Saez, and others had prepared the ground for the sudden flare-up of interest in distribution among economists as well as politicians.

### EQUALITY OF INCOME, WEALTH, AND HEALTH

Since 1980, with the economic ascent of China and India, income inequality among nations has decreased as inequality within nations has increased (Milanovic 2016). From the 1980s to 2015, the top 1% of households increased its share of pre-tax national income from 8% to 12% in Europe and from 8% to 20% in United States. Meanwhile, the top 1% of households increased its share of net national wealth from 20% to 40% in both Europe and the United States (World Inequality Database 2018). In 2017, it took ordinary workers the whole year to earn the average daily compensation of J. P. Morgan's CEO (Mishel and Schieder 2018). While this was going on, the share of pre-tax national income accruing to the bottom 50% of US households declined from 20% in 1980 to 12% in 2015 (and 2018). This rever-

sal of economic fortunes was in part triggered by the collapse of the progressivity of the tax code (Piketty and Saez 2007). While the average tax rate of the top 0.1% of US households dropped from 60% in 1950 to 30% in 2015, the average tax rate of the bottom 90% of US households rose from less than 20% to almost 30%.

This is not the whole story, however. When viewed alongside economic indicators of rising per capita incomes, various social indicators help to sharpen the picture of the steady progress of living standards around the globe since 1960. Over time, better health and longer lives have become available to a steadily increasing part of the world's population (Peltzman 2009). From 1960 to 2016, average global life expectancy rose by four months per year on average, or by 19 years in all: from 53 years in 1960 to 72 years in 2016. Even so, while health inequality across countries has dropped in recent years, health inequality within the United States and, to a lesser extent, in Europe has increased. The wealthiest 1% of US men live 15 years longer than the poorest 1% and the wealthiest 1% of US women can expect to live ten years longer than their poorer counterparts (Chetty et al. 2016). The US male life expectancy divide of 15 years corresponds to the current difference between the European Union and Ethiopia. The US female life expectancy divide of ten years corresponds to the estimated difference between a nonsmoker and a life-long smoker. The US gap is widening. From 2001 to 2014, the richest Americans gained about three years in longevity while the poorest ones made no gains.

Similar trends, albeit weaker ones, have been observed in the United Kingdom. Less is known about the rest of Europe but research is underway. In Sweden, for example, from 1986 to 2007 the life expectancy gap between the richest and poorest quintiles of households is reported to have increased by almost two years for men and by about one year for women (Hederos et al. 2017).

Increased inequality of incomes, wealth, and health within countries has transformed politics. A self-described democratic socialist, Sen. Bernie Sanders – who suddenly became a mainstream politician without having changed the thrust of his message for decades – came close to winning US presidency in 2016, and remains a strong contender in 2020. Donald Trump won the presidency by appealing to those who felt left behind by globalization, and may win again in 2020. In another 2016 surprise, British voters, also feeling left behind, chose to leave the EU. Thus, among other things, increased inequality seems to have fed and spread political turmoil.

### SIGNS OF DECAYING SOCIAL CAPITAL

In the US, earlier signs of social capital decay include declining interpersonal trust, as documented in Putnam's brilliantly named book *Bowling Alone* (2000). Transparency International (2018) has lowered the US

corruption perceptions index to well below that of Canada. Earlier, in 2012, 73% of US respondents had told Gallup that they considered corruption to be “widespread throughout the government” compared with 46% in Canada (Gallup 2013). Further, Gallup (2018) reports that only one in nine US respondents have confidence in Congress. For the first time since the First World War and the Spanish flu that killed 50–100 million people around the globe, life expectancy in the US declined three years in a row in 2015, 2016, and 2017 for health-related reasons, including “deaths of despair” (Case and Deaton 2017). Freedom House (2018) lowered the democracy score of the US from 94 in 2010 to 86 in 2017 compared with Canada’s score of 99 and Poland’s 85. Even democracy is under stress as evidenced by a string of striking book titles from political scientists and historians in the US, including Jason’s *How Fascism Works* (2018), Levitsky and Ziblatt’s *How Democracies Die* (2018), Mounk’s *People vs. Democracy* (2018), Page and Gilens’s *Democracy in America?* (2017), Runciman’s *How Democracy Ends* (2018), and Snyder’s *Road to Unfreedom* (2018).

The decay of social capital can be contagious. Misbehavior by US elites encourages similar misconduct elsewhere. Some other liberal democracies show disquieting signs of decaying social capital, including Hungary and Poland.

How does social capital, including distributive justice and democracy, interact with economic prosperity as reflected in per capita Gross National Income (GNI)? It seems easy to imagine that gross disparities – think Brazil, for example – can create frustrations that undermine social cohesion and economic performance. If so, it also seems easy to imagine that democratic decay likewise creates frustrations that erode the social fabric. If reasonable equality and unfettered democracy are viewed as two among several aspects of social capital, then we should not be surprised to see social capital decay weaken social efficiency and economic growth. A similar argument can be applied to other ingredients of social capital such as the rule of law, transparency (in contradistinction to corruption), and trust. This is because social capital – that is, social cohesion – matters for economic growth just as the buildup and use of human capital, physical capital, and, yes, natural capital matter for growth. The buildup of physical capital boosts growth directly while human capital, social capital, and natural capital, if well managed, spur growth indirectly by underpinning efficiency and technology.

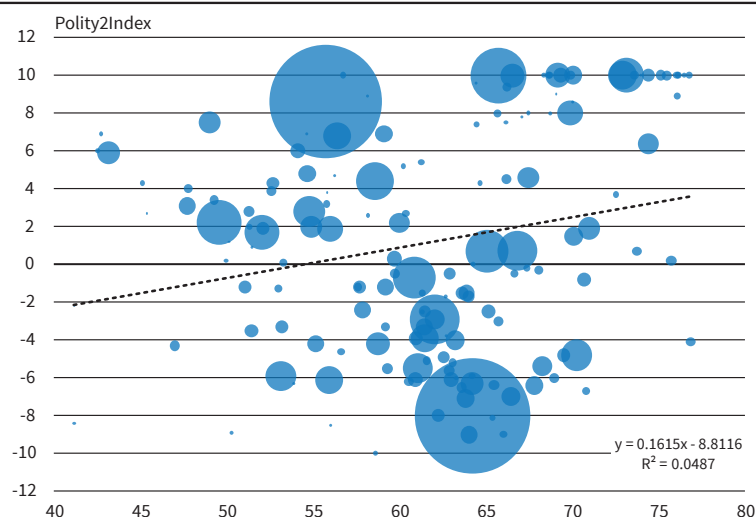
## FROM EQUALITY, DEMOCRACY, AND PUBLIC HEALTH ...

Experience seems to suggest that different aspects of social capital tend to go together within and across countries in ways that reinforce its uplifting effect on economic performance (Gylfason 2019).

For a first example of this tendency, Figure 1 shows the relationship between equality and democracy in a cross-section of 156 countries. Each country is represented by a circle whose size reflects the country’s population; hence, India and China are easy to spot in the figure. Income inequality is measured by the Gini index taken from The Standardized World Income Inequality Database (SWIID, Solt 2016). Equality is accordingly measured by 100 minus the Gini index. The SWIID is more comprehensive than corresponding World Bank data, contains more countries and years (1962–2017), and has fewer gaps. Democracy is measured by the Polity IV Project’s Polity2 variable, which reflects several characteristics of democratic vs. autocratic authority in governance (Polity IV Project, 2019). The index spans a spectrum from fully institutionalized autocracies through mixed authority regimes (“anocracies”) to fully institutionalized democracies on a 21-point scale ranging from minus ten (hereditary monarchy) to plus ten (consolidated democracy). The correlation between equality and democracy in the figure is 0.22. Even if the correlation is not strong per se, the slope of the regression line in Figure 1 is statistically significant ( $t = 2.8$ ). Taken at face value, the slope of the regression line, 0.16, in Figure 1 suggests that an increase in the Gini index of income equality by 25 points, corresponding to the difference between Brazil and Norway in the sample, would in the average country go along with a four-point strengthening of democracy – spanning a fifth of the scale observed

Figure 1

### Equality 1962–2017 and Democracy 1960–2012 (156 Countries)



Horizontal axis shows 100 minus Standardized Gini Index. Equality rises from left to right.  
Source: SWIID, Solt (2016), and Polity IV Project (2018).

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Figure 2

Equality 1962–2017 and Life Expectancy 1960–2016 (182 Countries)

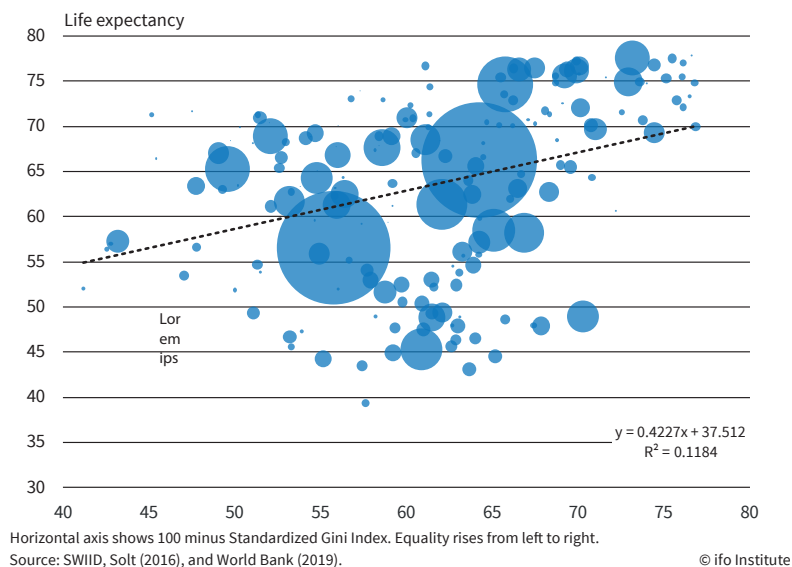
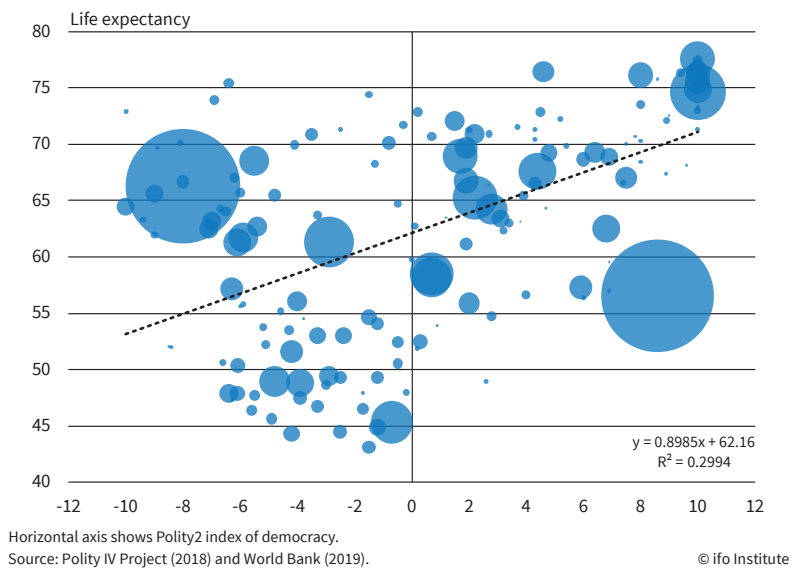


Figure 3

Democracy 1960–2012 and Life Expectancy 1960–2016 (160 Countries)



across countries from minus ten under dictatorship to plus ten under democracy.

Another example is given in Figure 2 that shows the relationship between equality, measured as before, and life expectancy at birth in a cross-section of 182 countries. The correlation between equality and life expectancy in the figure is 0.34. The slope of the regression line in Figure 2 is statistically significant ( $t = 4.9$ ). Taken at face value, the slope of the regression line, 0.42, in Figure 2 suggests that an increase in the Gini index of income equality by 25 points, again corresponding to the difference between Brazil and Norway, would in the average country go along with more than ten extra years of life. Long lives and high incomes go hand in hand, a relationship known as the Preston Curve. Because research on the distribution of

life expectancy and other indicators of public health across income groups is in its infancy, the data necessary to figure the cross-country relationship between health distribution and per capita incomes are not yet available.

For yet another example, consider the cross-country relationship between democracy and life expectancy shown in Figure 3. Democracy is measured as in Figure 1 and life expectancy as in Figure 2. The correlation between equality and life expectancy in the 160 countries covered by the figure is 0.55. The slope of the regression line in Figure 3 is statistically significant ( $t = 8.2$ ). Taken at face value, the slope of the regression line, 0.90, in Figure 3 suggests that a five-point increase in the Polity2 index of democracy, spanning a quarter of the scale from minus ten to plus ten, goes along with an increase in life expectancy by four to five years in the average country. This suggests that people tend to live longer under democracy than under dictatorship.

All in all, equality, democracy, and public health seem to go together across countries. Moreover, as we shall see, all three go along with economic prosperity, each in its own way. As always, however, simple bivariate correlations need not imply causation. Even so, the

possibility that  $x$  is good for  $y$  does not necessarily dim the prospect that  $y$  returns the favor by being good for  $x$ .

During the interwar period, economic inequality was a matter of intense public debate as it has now become again since about 1980. As stated before, the top 1% of households saw their share in total pre-tax income rise from 8% in 1980 to 12% in Europe and to 20% in the US and Russia in 2015. Further, the top 1% of households saw their share of total net personal wealth rise from 20% in 1980–1990 to 40% in 2015 in Europe, the US, and Russia (World Inequality Database 2018). In Germany, the pre-tax national income share of the top 1% of households rose from 9% in 1980 to 13% in 2008 and then fell to 11% in 2016. Corresponding data on the distribution of wealth in Germany is not available. In France, for comparison, the pre-tax national

income share of the top 1% of households rose from 9% in 1980 to 12% in 2008 and then fell to 11% in 2016. The distribution of personal wealth has had a bumpier ride. The pre-tax share of the top 1% of French households in total net personal wealth rose from 17% in 1980, a far cry from the 57% share observed in 1905, to 22% in 2008 and 23% in 2014.

English-speaking countries have experienced a greater increase in income inequality since 1980 than continental Europe and Japan. The English-speaking countries have experienced a return to the disparities of the 1920s, with the top 1% receiving 10% (Australia, Ireland) to 20% (US) of national income. By contrast, Europe and Japan have seen a reduction in the national income share of the top 1% of households from 15% to 25% in the 1920s to anywhere from 6% (Denmark, the Netherlands) to 11% (France, Japan) in recent years. These figures need to be taken with a grain of salt, however, because personal wealth hidden in tax havens, estimated at 6% of world output in 2008, may significantly skew official estimates of economic inequality (Zucman 2013; 2015).

### ... TO ECONOMIC PROSPERITY

We now ask: Do equality, democracy, and life expectancy vary systematically with economic prosperity across countries? What do the data say?

Figure 4 shows a positive cross-country relationship between equality and per capita GNI. The correlation between equality and income in the 180 countries covered by the figure is 0.30. The slope of the regression line in the figure is statistically significant ( $t = 4.3$ ). Taken at face value, the slope of the regression line, 0.044, in Figure 4 suggests that an increase in the “100 minus Gini” index of equality by, say, 20 points, corresponding to the difference between Brazil and France in the sample, would in the average country be accompanied by an 88% increase in per capita GNI. As always, however, a simple correlation need not imply causation. Even so, statistical endogeneity bias

Figure 4

#### Equality 1962-2017 and Per Capita GNI 2016 (180 Countries)

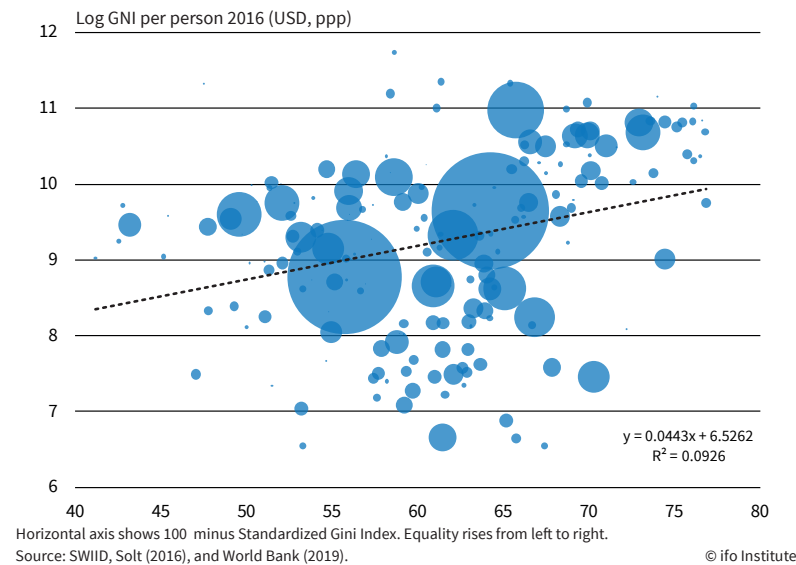
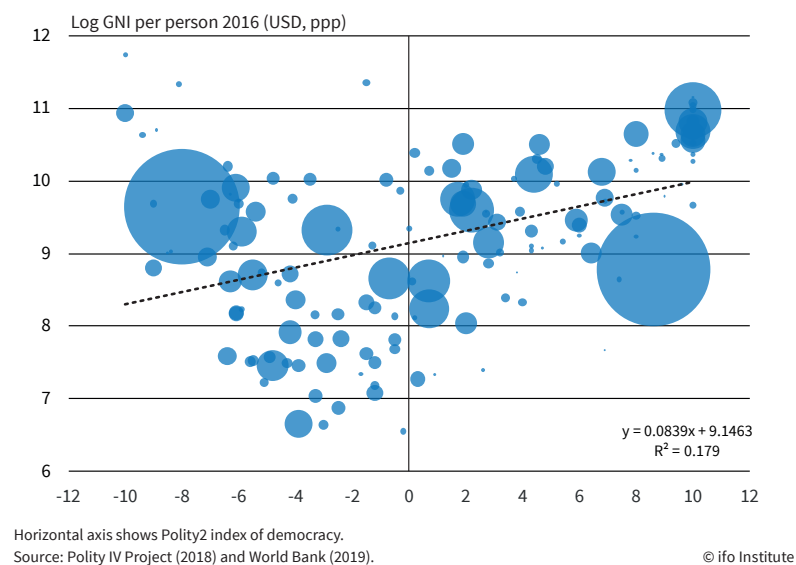


Figure 5

#### Democracy 1960-2012 and Per Capita GNI 2016 (154 Countries)

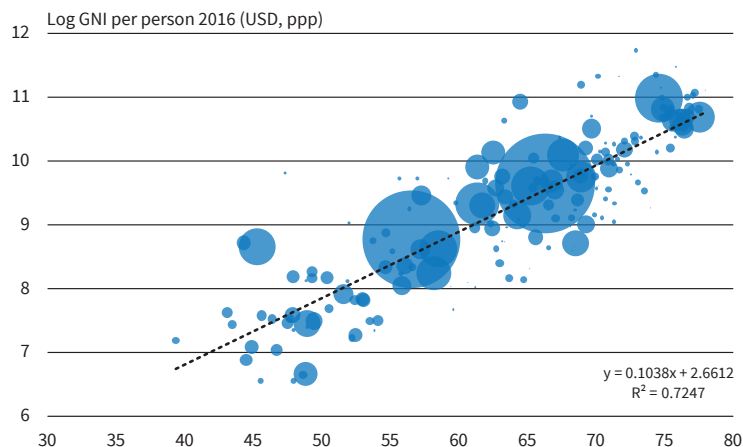


is not an issue in Figure 4 because current per capita GNI cannot possibly affect equality retroactively. The pattern observed accords broadly with the results of Berg and Ostry (2017) and Berg et al. (2018). Equality appears to be good for growth across the globe, partly perhaps because equality goes along with several other ingredients of social capital, including democracy (Figure 1) and public health (Figure 2), that are also good for growth, a matter to which we now turn before concluding the story.

Figure 5 shows a positive cross-country relationship between democracy and per capita income. The correlation between democracy and income in the 154 countries shown in the figure is 0.42. The slope of the regression line in the figure is statistically significant ( $t = 5.6$ ). Taken at face value, the slope of the regression



Figure 6

**Life Expectancy 1960–2016 and Per Capita GNI 2016 (185 Countries)**

Horizontal axis shows life expectancy at birth in years.  
Source: World Bank (2019).

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line, 0.08, in Figure 5 suggests that a five-point increase in the Polity2 index of democracy, spanning 25% of the scale of the democracy index (i.e., 5 out of 20), would in the average country be accompanied by a 40% increase in per capita GNI. As in Figure 4, endogeneity bias is not an issue in Figure 5 because current per capita GNI cannot possibly affect democracy retroactively.

To close the circle, Figure 6 shows the cross-country relationship between life expectancy and per capita income (the Preston curve). The correlation between life expectancy and income in the 185 countries shown in the figure is 0.85. The slope of the regression line in the figure is statistically significant ( $t = 21.9$ ). Taken at face value, the slope of the regression line, 0.10, in Figure 6 suggests that a ten-year increase in life expectancy would in the average country be accompanied by a doubling of per capita GNI. Once more, endogeneity bias is not an issue here because current per capita GNI cannot possibly affect life expectancy retroactively.

**CONCLUSION**

Where do we stand at the end of this brief bird's-eye-tour of international cross-sectional data on equality, democracy, public health, and economic performance?

We have seen statistically and economically significant bivariate cross-country relationships among those four variables, pair by pair. Specifically, we have seen that income equality, democracy, and life expectancy are positively correlated with each other (Figures 1-3) as well as with per capita GNI (Figures 4-6). Put differently, three key components of social capital – equality, democracy, and public health – have been shown to vary systematically and significantly with one another as well as with per capita income in a large cross-sectional sample of countries from 1960 onward.

These relationships have a bearing on the current state of the world. Political scientists now describe the

US as an oligarchy that systematically disrespects the will of the people (Page and Gilens 2017). Many Europeans and others also worry about recent political developments within the European Union, especially in Hungary and Poland whose current leaders openly advocate “illiberal democracy.” The grim lessons from the interwar period remind us that increased inequality has undermined democracy and prosperity before (Jason 2018; Snyder 2018). More could hardly be at stake. Many of us believe that reasonable equality in the distribution of income, wealth, and health under democracy,

which thrives on pluralism, tolerance, transparency, and trust, are not only desirable in themselves, each in their own right, but they also seem to go together across countries through an intricate web of bivariate linkages, some of which were reviewed here. In the final analysis, good things tend to get along. Let us try to keep it that way.

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## Ofer Malamud The Effect of Home Computers and the Internet on Children’s Human Capital Development



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The development of the personal computer in the late 1970s enabled households to purchase a computer for the home and made it possible for children to gain access to an important new technology. This technology was further augmented by the rapid expansion of internet access to households starting in the mid-1990s. Today, home computers and internet access are practically ubiquitous in developed countries: over 95 percent of 15-year-old students in OECD member countries report having a link to the internet at home (OECD 2017). In contrast, access to home computers and the internet in middle-income and developing countries continues to lag. For example, less than half of 15-year-old students in Algeria, Peru, and Vietnam report having internet access at home (OECD 2017). In an effort to alleviate this “digital divide,” many governments and non-governmental organizations have invested substantial resources to expand computer and internet access to children in developing countries. Yet until recently, compelling evidence on the causal impact of home computers and internet access on children’s outcomes has been lacking.

There are many potential mechanisms through which home computers and internet access can affect children’s outcomes. First and foremost, exposure to computers and the internet can develop digital skills that may be valuable on the labor market (Krueger 1993). Computers and internet access might also improve learning through educational software. For example, if children lack educational materials, internet access could improve academic achievement by providing access to educational websites with subject-specific content, as well as e-books and other reading

materials such as newspapers, blogs, and online encyclopedias. On the other hand, home computers and internet access could diminish learning if children spend more time on activities that are not conducive to developing academic skills, such as playing online games, and less time reading and doing homework. Computer and internet access may also affect cognitive skills by exposing children to activities that alter cognitive processes (Johnson 2006; Mills 2014). In addition, use of home computers and the internet has been associated with a lack of physical activity, increased risk of obesity, decreased social involvement, and more aggressive behavior when playing violent computer games or engaging with other adult content (Subrahmanyam et al. 2000; 2001). Finally, it is possible that the internet could expose children to broader cultural and social perspectives.

Viewed through an economic framework, the introduction of computers and internet access into a household is likely to alter the relative price and time cost of certain activities available at home. Children would then substitute into activities that are made relatively cheaper or become newly available. Any change in the mix of activities could then impact children’s human capital developmental and subsequent adult outcomes. Computers and internet access may also change the productivity of certain activities in the

Figure 1  
Impact of Winning a Computer Voucher on Academic Achievement in Romania



Source: Malamud and Pop-Eleches (2011).

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development of human capital. To the extent that children do not choose those activities that necessarily improve their skills and their future outcomes, there is an important role for parents to monitor and supervise their children's use of technology.

The remainder of this article summarizes some of the evidence on the causal impact of computer and internet access on children's outcomes, drawing especially on my recent work with several coauthors in a variety of different settings. This is not intended to be an exhaustive review but one that hopefully helps shed light on this important topic.

### THE EFFECT OF COMPUTER ACCESS: EVIDENCE FROM ROMANIA

In Malamud and Pop-Eleches (2011), we examined a government program administered by the Romanian Ministry of Education that subsidized the purchase of home computers. The program awarded approximately 35,000 vouchers worth EUR 200 (about USD 300) in 2008 towards the purchase of a personal computer for low-income students enrolled in public schools. The computers purchased through this "Euro 200" program had to fulfill certain minimum specifications (2 GHz CPU, 1 GB RAM, 160 GB HD), but internet access was not one of them. Vendors were encouraged

to install educational software but, in practice, this was rarely done.

Since the fixed number of vouchers were allocated based on a simple ranking of family income, we employed a regression discontinuity design that allowed for comparisons across students very similar in family income and other respects, but markedly different in their access to a computer at home. Using data on approximately 3,500 households, which we collected through in-person interviews one year after receipt of the computers, we estimated the impact of winning a EUR 200 voucher on a broad range of skills and child outcomes.

Our findings indicate that home computers had both positive and negative effects on child outcomes. Winning a voucher increased the likelihood of households owning a home computer by over 50 percentage points, making them almost twice as likely to own a computer compared to households with incomes just above the program threshold. As expected, these higher rates of computer ownership also led to increased computer use, with children in households that won a voucher using computers about 3 to 4 hours a week longer than their counterparts in households that did not win a voucher. As shown in Figure 1, we found strong evidence that children in households that just barely won a voucher had significantly lower

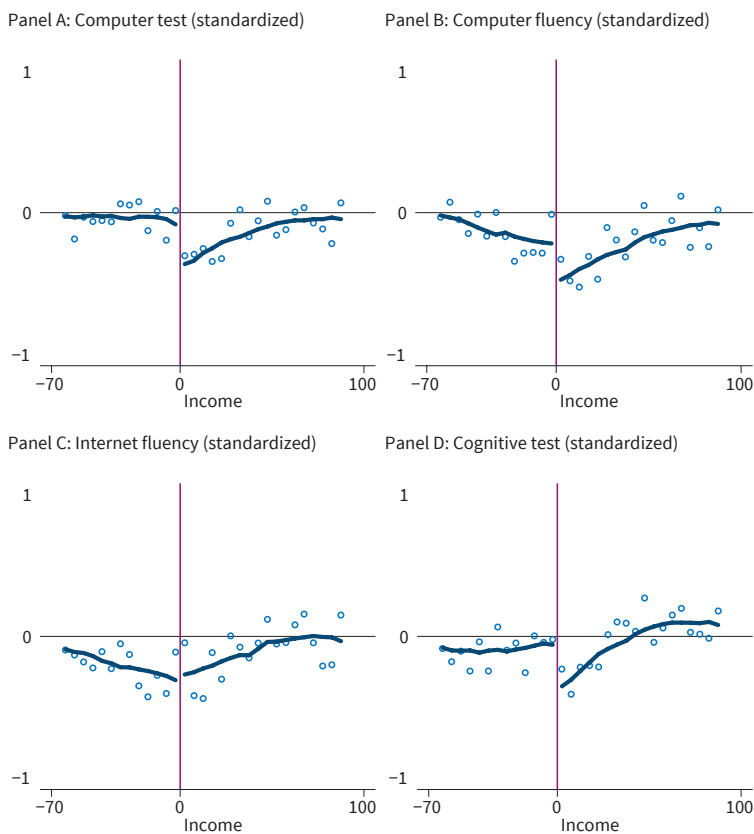
school grades in Math (panel A), Romanian (panel B), and English (panel C) compared to those where income was just below the threshold. There was no significant difference in a grade that captured behavior at school (panel D).

On the other hand, as can be seen in Figure 2, we estimated that children in households that just barely won a voucher had significantly higher scores in a basic test of computer skills (panel A) and in self-reported measures of computer fluency (panel B). Unsurprisingly, given the low levels of internet access, there were no significant differences in self-reported internet fluency (panel C). Finally, there was also some evidence that winning a voucher increased cognitive ability, as measured by a Raven's Progressive Matrices test (see panel D). We found little evidence that winning a computer voucher affected any behavioral outcomes.

How can we reconcile the negative effects on academic

Figure 2

#### Impact of Winning a Computer Voucher on Digital/Cognitive Skills in Romania



Source: Malamud and Pop-Eleches (2011).

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achievement with the positive effects on digital and cognitive skills? The effects on academic achievement are not so surprising given that few parents or children reported having educational software installed on their computers, and few children reported using the computer for homework or other educational purposes. Instead, most computers had games installed and children reported that most of their computer time was spent playing games. There was also some evidence that winning a computer voucher reduced the time spent doing homework, watching TV, and reading for pleasure. Thus, even if computer use improved certain skills, it appears to have caused a shift away from educational activities so that the net effect on academic achievement was negative.

In addition, we found that the presence of parental rules regarding homework helped to mitigate some of the negative effects of winning a computer voucher without affecting the gains to computer skills and cognitive ability. Yet the presence of rules regarding computer use reduced the positive impacts on computer skills without improving academic achievement. These results are merely speculative, since such rules were not randomly assigned and were measured after treatment occurred, but they suggest that encouraging children to do homework might be more effective than restricting their computer use.

**THE EFFECT OF INTERNET ACCESS: EVIDENCE FROM PERU**

The findings from Romania raise the question of whether similar patterns would be observed in other contexts, and whether the availability of internet access could make a difference. Malamud, Cueto, Cristia, and Beuermann (2019) examined the effects of providing internet access using a randomized experiment in Lima, Peru.<sup>1</sup> We began by providing access to XO laptops for home use to a random sample of 540 out of 2,457 children in June/July 2011.<sup>2</sup> These children were enrolled in grades 3 to 5 of low-achieving public primary schools. Then, among children who received these laptops, we randomly selected about 350 children to receive free high-speed internet access in July/August 2012. The laptops included 32 applications selected by Peru’s Ministry of

<sup>1</sup> This followed an earlier study by Beuermann, Cueto, Cristia, Malamud, and Cruz-Aguayo (2015) examining the short-term impacts of access to computers without internet access.

<sup>2</sup> The XO laptops were developed by the One Laptop per Child (OLPC) program with an emphasis on self-empowered learning and with specialized software intended to encourage such learning.

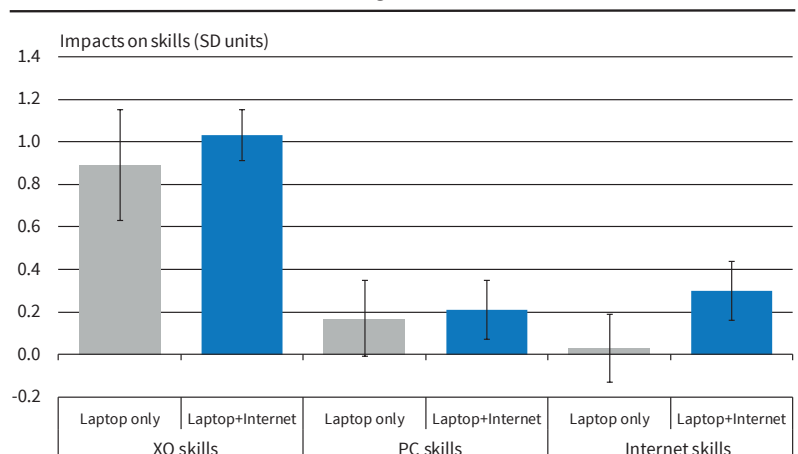
Education for its national program, and we offered training and manuals on how to use them. We also offered tutorials and manuals to children who received internet access in which we showed them how to take advantage of freely available educational websites created by Peru’s Ministry of Education and other online resources, such as Khan Academy and Wikipedia.

To evaluate the impacts of our interventions, we conducted a follow-up survey in November 2012, approximately 17 months after the laptops were initially distributed and 5 months after the provision of internet access. We also conducted an additional follow-up survey in March 2013 to check for longer-run impacts after the summer vacation. We compare (i) children who were randomly chosen to receive laptops with internet access to (ii) those who received only laptops without internet access and (iii) those who did not receive laptops at all. This enables us to estimate the impact of internet access both separately from, and in conjunction with, the impact of the laptops themselves. The figures below show the impact of our interventions on groups (i) and (ii) relative to group (iii), which did not receive laptops or internet access.

Our interventions were successful in increasing children’s use of technology at home and led to substantial improvements in digital skills. Figure 3 below shows that children who were offered laptops with internet access scored 0.3 standard deviations higher on a test of internet literacy than those who were not offered internet access or those who were offered laptops without internet. They also scored 1 standard deviation higher on a test that measured proficiency on the XO laptop compared to those who were not offered internet access or those who were offered laptops, but their scores were not significantly different from those of children who were offered laptops without internet. In addition, children who were offered laptops (with or without internet) showed significant improvements on a Windows-based computer test, suggesting that gains in computer literacy were not lim-

Figure 3

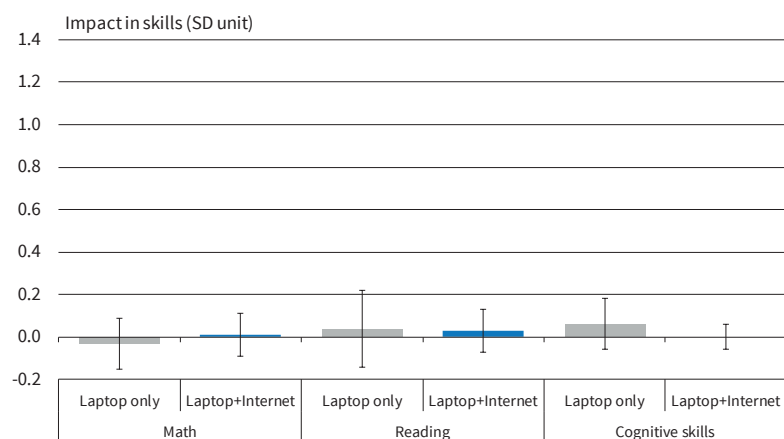
Impact of Access to Home Internet on Digital Skills in Peru



Source: Malamud, Cueto, Cristia, and Beuermann (2019).

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Figure 4

**Impact of Access to Home Internet on Academic and Cognitive Skills in Peru**

Source: Author's calculations.

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ited only to the specific XO platform but also transferred to skills for using other types of computers.

Despite the increase in the use of home technology and the improvements in digital skills, internet access had no significant impacts on academic achievement. Figure 4 below indicates that we can rule out impacts larger than 0.08 standard deviations in math and 0.13 standard deviations in reading with 95 percent confidence when comparing children who were offered internet access to those who did not receive laptops. Nor were there any significant effects on an index capturing a broad set of cognitive skills, as measured by the Raven's Progressive Matrices test, a verbal fluency test, a test of executive functioning, a coding test, a working memory test, and a test of spatial reasoning (or any of these individual tests).

Moreover, we found no significant effects on a self-esteem index measured using a self-reported questionnaire. Based on teacher reports, children in the treatment groups were equally likely to exert effort at school compared to their counterparts in the control group, and there were no differences in grades obtained from administrative school records or in teacher perceptions of children's sociability. Finally, there was no evidence of any improvement when we resurveyed children 8 to 9 months after internet provision following the summer vacation, despite the potential benefits of engaging children to counteract summer learning loss.

Why were there no significant impacts on academic achievement and cognitive skills from providing children with internet access? The intervention itself was not directly linked with pedagogical activities at school, but we did provide children with training to make more effective use of their computers and the internet for educational purposes. We explore reasons for the absence of impacts using time diaries and survey questions on time allocation, as well as detailed computer logs that registered the specific applications and

internet sites that children used at a daily level. When we attempted to classify the main applications and internet sites used by children, we found that children engaged in digital activities that are focused less on information or communication, and more on entertainment.

**THE ROLE OF PARENTS: EVIDENCE FROM CHILE**

As noted earlier, Malamud and Pop-Eleches (2011) found that parental rules might attenuate the negative effects of computer ownership, suggesting that parental monitoring

and supervision may be an important mediating factor. In a follow-up study by Gallego, Malamud, and Pop-Eleches (2017), we examined two factors that might affect parents' ability to monitor their children's internet use. First, parents may lack information about their children's internet use. Children are often quicker to adapt to new technologies, meaning parents encounter challenges in understanding how children use technology. Second, even with perfect information, parents may not be able to influence their children's actions through indirect transfers and threats (Weinberg 2001; Berry 2015). In these cases, parents may wish for a way to control their children's actions directly.

We designed and implemented a set of randomized interventions to test the impact of sending parents weekly SMS messages containing specific information about their children's recent internet use and/or encouragement and assistance with installing parental control software. Providing parents with information about their children's internet use should help alleviate informational frictions. Encouraging parents to install parental control software can help parents bypass the need to incentivize their children or enforce rules related to computer use, assuming that parents are able to install and operate such parental control software.

We focused on a sample of children in 7th and 8th grade who received free home computers and 12 months of free internet through Chile's "Yo Elijo mi PC" (YEMPC) program in 2013. The primary data on the intensity of internet use at the daily level came from the internet service provider (ISP) that served all of the computers provided to the children in our sample. According to this data, children downloaded approximately 175MB of internet content daily, which translated to about three hours of internet use per day. This is similar to recent estimates from the 2015 PISA survey showing that children in Chile spent 195-230 minutes

per day online, the highest rate among all the countries surveyed (OECD 2017).

The experiment consisted of delivering weekly text messages to the 7,700 parents in our experimental sample over the course of 14 weeks. We sent three different types of SMSs using the following texts:

- SMS only: “We hope your child makes good use of the Yo Elijo Mi PC laptop that he/she won.”
- ISP: “We hope your child makes good use of the Yo Elijo Mi PC laptop that he/she won. Your child downloaded XX MBs the week of the DD-MMM, {“more than” or “similar to” or “less than”} what a typical child downloaded: YY MBs.”
- Windows 8: “We hope your child makes good use of the Yo Elijo Mi PC laptop that he/she won. The Parental Control program of Windows 8 can help you supervise your child’s computer use. Call us at XXX-XXXX for assistance.”

We also incorporated a treatment arm that included both ISP information and assistance with Windows 8 parental controls to test for possible interactions between these treatments. To disentangle the informational content and the offer of assistance from the cue associated with SMS messages, we compare the ISP and Windows 8 treatments to the SMS-only control group in which parents received a weekly SMS reminding them that children should make good use of their computers, a message that was included in every treatment.

We found that households in which parents received ISP information about internet use had 6–10 percent lower intensity of internet use during the treatment period relative to households in the control group. These effects persisted in the weeks and months after treatment ended. This can be seen in Figure 5 below, which shows the estimated impacts of the ISP information treatment on weekly internet use relative to the control group (where the red vertical lines bracket the intervention period).

This suggests that our temporary intervention providing information on internet use may have altered the permanent intra-household equilibrium. Indeed,

some parents who received information reported that they were more likely to punish their children while others reported having calm discussions with their children about internet use. There is even some evidence that parenting styles became less permissive. Furthermore, we found that our informational interventions may substitute for the presence of a parent at home but are complementary to parents’ capacity to be involved in their children’s lives.

We also showed that there are statistically significant reductions in use precisely on the days immediately after receiving the ISP information, and that this effect is more relevant in the early weeks of the experiment. Moreover, it was the SMS messages conveying the “bad news,” i.e., that children used more internet than the reference group in a specific week, that produced a much larger decline in internet use. These findings confirm that it is the specific information provided to parents about their children’s internet use that leads to a significant reduction in internet use.

We do not find significant impacts from helping parents directly control their children’s internet access. In particular, we find no difference in internet use between parents who were encouraged and provided assistance to install parental control software versus those in the control group who received only a generic message. Moreover, among the 15 percent of parents who installed parental control software with our assistance, we did not find changes in internet use on the days immediately after installing this software. We believe these findings may reflect the considerable obstacles faced by low-income parents in implementing technological solutions for monitoring and supervising their children.

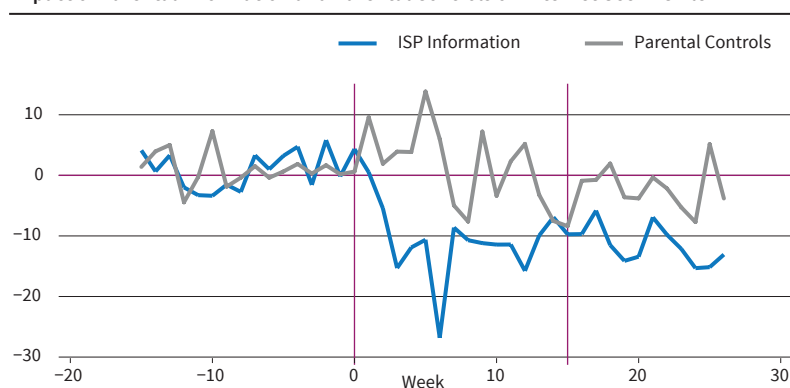
**OTHER EVIDENCE**

There are several other studies that examine the causal impact of home computers and internet access in different settings.<sup>3</sup> Fairlie and Robinson (2013) conducted a randomized experiment in which they provided home computers with partially subsidized dial-up internet

access to 1,123 students in 15 middle and high schools in California. The experiment generated a large increase in computer ownership and computer use, as well as increased internet access. However, they found no impacts on educational outcomes such as school grades, standardized math and reading test scores, or the num-

Figure 5

**Impact of Parental Information and Parental Controls on Internet Use in Chile**



Source: Gallego, Malamud, and Pop-Eleches (2017).

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<sup>3</sup> We focus here on more recent studies that use experimental or quasi-experimental variation in computer and internet use. Previous studies include Attewell and Battle (1999), Fuchs and Woessmann (2004), Fairlie (2005), Schmitt and Wadsworth(2006), Beltran et al. (2010), and Fiorini (2010).

ber of credits earned after 9 months. There were also no impacts on attendance or disciplinary actions. Using the same experimental setting, Fairlie and Kalil (2016) did find positive impacts on the likelihood of having a presence on a social networking site and time spent communicating with friends, but no effects on school participation and engagement.

Vigdor et al. (2014) exploited within-student variation in access to home computers as well as local variation in the introduction of high-speed internet service to examine the effect of both home computers and internet access among public school students in North Carolina. They found evidence for modest but persistent and significant declines of 0.01-0.03 standard deviations in math and reading test scores. Along the same lines, Faber et al. (2016) exploited differences in broadband connection speeds across neighboring residences in England and found a precisely estimated zero effect of internet speed on test scores or time spent studying.

Finally, Mo et al. (2013) conducted a randomized experiment in which they distributed laptops installed with learning/remedial tutoring software to 300 third-grade migrant students in Beijing. They found positive impacts on self-reported computer skills after 9 months of exposure. They also found marginally significant impacts of 0.17 standard deviations on a standardized math test in some specifications (although these are smaller and insignificant at 0.07 standard deviations without the inclusion of controls). Beyond these studies, there are many others that examine the effect of technology in school and after-school settings, but these are outside the scope of this article.<sup>4</sup>

## DISCUSSION

The evidence described above indicates that home computers and internet access have different impacts on different outcomes. Perhaps not surprisingly, there is strong evidence for positive and significant improvements in digital skills, related to either computer or internet fluency depending on the respective intervention. There is also some evidence suggesting positive improvements in cognitive skills, as measured by the Raven's Progressive Matrices test, although this is not a robust finding across all settings.<sup>5</sup> On the other hand, there is almost no evidence for positive impacts on academic outcomes. Some studies find negative effects; others find precisely estimated null effects. To the extent that children spend more time on their computers without a corresponding decline in academic achievement, it could indicate an increase in productiv-

ity. However, among those that find negative effects, it appears that children substitute away from homework and other school-related activities, while spending most of their computer and online time on entertainment activities, such as games and social media.

There is also evidence that parents play an important role in moderating and mediating the impacts of home computers and internet use. Providing information to parents about children's internet use does affect internet use. Furthermore, it appears to influence parent-child interactions in a way that persists over time. But simply providing access to parental control software may not be sufficient to help (low-income) families monitor and supervise their children's internet use.

In spite of this new evidence on the impacts of home computers and internet access, there are many important questions that remain unanswered. For example, given both positive and negative effects on different skills, what is the (net) effect of technology on later-life outcomes? What are the best tools for parents to spur effective use of home technology? What is the effect of mobile devices such as smartphones and tablets? Are there specific applications or portals (e.g. Khan Academy) that can lead to improved academic outcomes? And how can we measure the effect of technology on 21st-century skills beyond the usual academic outcomes? Each of these questions requires further study so we can better understand the effect of home computers and internet use on children's outcomes.

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<sup>4</sup> Cristia et al. (2012) conducted a randomized evaluation of the OLPC program in schools in rural Peru, where children could also take their laptops home. They found no impacts on academic achievement but some positive and significant impacts on cognitive skills (as measured by the Raven's Progressive Matrices test). However, only 40 percent of laptops were actually used at home because of the concerns of school principals and parents.

<sup>5</sup> This is consistent with early evidence from small-scale lab studies showing impacts of playing video games on spatial skills. See Okagaki and Frensch (1994) and Subrahmanyam and Greenfield (1994).



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## Exemption Provisions of the German Small Investor Protection Act: A Follow-up Study<sup>1</sup>

The German Small Investor Protection Act (*Kleinanlegerschutzgesetz*, KASG) from 2015 is designed to create greater transparency for investors on the so-called gray capital market by means of stronger regulation. However, the act also contains provisions exempting companies that finance themselves through a crowdinvesting platform as well as social, charitable, and religious projects from the obligation to provide a prospectus when seeking funding through non-securitized types of investments (henceforth called investments, *Vermögensanlagen*). This report outlines the rules and regulations included in the KASG. In addition, it analyzes the effects of the legal exemptions three years after the introduction of the KASG. The basis for the investigation of these legal exemptions is a comprehensive crowdinvesting database and two survey waves of social and charitable organizations.

Becoming binding on July 10, 2015, the German Small Investor Protection Act (*Kleinanlegerschutzgesetz*, KASG) contains numerous legal amendments concerning the regulation of financial markets. The goal of the KASG is to provide better protection for investors on the so-called gray capital market, which is a market for less-regulated financial products. The KASG amended the German Investment Act (*Vermögensanlagegesetz*, *VermAnlG*) by expanding its regulatory outreach to encompass types of investments that were not previously covered by the *VermAnlG*. Besides requiring all issuers who publicly offer investments above a certain size threshold to publish a prospectus, the KASG also contains a protection mechanism designed to ensure that non-sophisticated investors invest only a certain proportion of their available wealth in such investments. In the course of an evaluation of the KASG in 2016, some of these amendments made by the KASG were partially revised.

When regulating the financial market, the legislator faces a trade-off between the interests of investors and those of the issuers of investments. While investors primarily seek to protect their investments, issuers request easy and affordable access to capital. Since

providing a prospectus comes with high costs for some issuers, the adjustments made by the KASG also include exemptions.<sup>2</sup> Under certain conditions, crowdinvesting initiatives as well as social, charitable, and religious projects are exempted from the *VermAnlG*. In the case of social and charitable projects and religious groups, the goal of such exemptions is to “preserve the diversity of social activities undertaken for the common good in Germany” (Bundestag printed paper 18/4708, p. 60). Crowdinvesting facilitates access to funding and therefore allows companies, especially at an early stage, to overcome barriers to financial access (Carpenter and Petersen 2002; Cassar 2004). By using crowdinvesting platforms, start-ups can promote both their innovative business ideas, as well as the issuing of investments to a wider audience. These offerings are also aimed at non-sophisticated investors since the minimum thresholds are generally low, with some portals offering investments starting at one euro (Hornuf and Schwiendacher 2018). In addition, crowdinvesting can have an advertising effect for the issuing company and may also serve as an indicator of the potential success of the business idea on the market (Colombo and Shafi 2016).

The implementation and the effects of these legal exemptions were already analyzed in 2016 – around one year after the introduction of the KASG (Hainz, Hornuf, and Klöhn 2017; Hainz et al. 2017). Since then, some of the rules and regulations of the KASG were partially revised by the German Bundestag. In this article, we provide an overview of the provisions of the KASG and the amendments and updates that have been made since the act became binding until the end of 2018. We also re-evaluate the effects of the legal exemptions, around three years after the introduction of the KASG. For our investigation of the exemptions for crowdinvesting, we have drawn on a comprehensive crowdinvesting database that has been maintained since August 1, 2011. Our investigation of the exemptions for social and charitable projects and religious groups is based on two surveys of the relevant actors, which were carried out in the summers of 2016 and 2018 respectively.

### THE GERMAN SMALL INVESTOR PROTECTION ACT AS OF 2015

#### Exemption Provisions

The statutory amendments of the KASG in 2015 mainly applied to the *VermAnlG*, which regulates the public offering of investments.<sup>3</sup> The act’s scope of application was extended to profit-participating loans and subordinated loans; however, the extension of the *VermAnlG*



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<sup>1</sup> This article summarizes the main findings of the 2018 evaluation report on the KASG commissioned by the German Federal Ministry of Finance. The full report is published as ifo Research Report (Hainz and Hornuf 2019); a short version appeared in the ifo Schnelldienst (Hainz et al., 2019). Significant parts, in particular on the presentation of the KASG, are taken from Hainz et al. (2017).

<sup>2</sup> The DICE database contains an international comparison of the regulation of crowdinvesting from Hornuf and Schwiendacher (2017) (available at: <http://www.dice.ifo.de>), which is explained in Hainz and Hornuf (2016).

<sup>3</sup> Further amendments concern subjects such as investor protection in the German Securities Trading Act (WpHG) and the German Act Establishing a Federal Financial Supervisory Authority (FinDAG); see Buck-Heeb (2015) for example.

Table 1

**Types of Investments and Their Regulation under the German Investment Act (VermAnlG)**

Investments (cf. § 1 Para. 2 VermAnlG)	Duties and liability requirements of the VermAnlG
<ul style="list-style-type: none"> <li>• Shares that grant a participation in the company's earnings<sup>a</sup></li> <li>• Shares of trust assets</li> <li>• Profit-participating loans</li> <li>• Subordinated loans</li> <li>• Profit-participating subordinated loans</li> <li>• Participation rights</li> <li>• Registered bonds</li> <li>• Other assets</li> </ul>	<ul style="list-style-type: none"> <li>• Minimum term and termination of investments (§ 5a VermAnlG)</li> <li>• Prospectus requirement (§§ 6 ff. VermAnlG)</li> <li>• Liability concerning information contained in the prospectus (§§ 20 ff. VermAnlG)</li> <li>• Financial accounting (§§ 23–25 VermAnlG)</li> </ul>

<sup>a</sup> Cooperative shares, silent partnerships, shares in business partnerships (GbR, OHG, KG), GmbH shares, and shares in foreign businesses with different legal forms.

Source: German Investment Act (VermAnlG); authors' illustration.

only applies if investments (see Table 1) are offered publicly within Germany (§ 1 VermAnlG). An offering is *public* if it is not restricted to a certain group of people. In the case of an existing personal relationship between the investor and the issuer, an offer cannot be considered public (Zwissler 2013).

To the obligations and liability requirements of the VermAnlG, which are presented in Table 1, exceptions are granted. Figure 1 summarizes the exceptions and exemption provisions. Prior to the introduction of the KASG, § 2 VermAnlG already featured several exceptions. Investments that are covered by § 2 VermAnlG are exempt from the requirements of §§ 5a to 26 VermAnlG,<sup>4</sup> and in particular from the obligation to publish a prospectus (§ 6 VermAnlG). In practice, exemptions for public offering are particularly important. Such exemptions exist for the public offering of cooperative shares without performance-based compensation for distribution (No. 1), for cooperatives offering profit-participating loans, subordinated loans, or other investments without performance-based compensation for distribution (No. 1a),<sup>5</sup> for private placements offering a maximum amount of 20 shares (No. 3a) and for investments

with an aggregate value not exceeding EUR 100,000 within twelve months (No. 3b). In addition, the exemptions apply to investments if the price per investor is at least EUR 200,000 (No. 3c), or if they are only offered to a restricted group of people (No. 6). However, the latter exemption has little practical relevance.

New elements introduced in the KASG were the exemption provisions for (i) crowdfunding initiatives (§ 2a VermAnlG), (ii) social projects (§ 2b VermAnlG), and (iii) charitable projects and religious groups (§ 2c VermAnlG). Similar to § 2 VermAnlG, these exceptions to the provisions of the VermAnlG are set out for certain kinds of funding projects. While the catalogue of exemptions is not as comprehensive as in § 2 VermAnlG, it does include important regulations such as the prospectus requirement.

**§ 2a VermAnlG** privileges projects that are financed via crowdinvesting platforms. Its main privilege is the exemption from prospectus requirements according to § 6 VermAnlG; the issuer only has to provide an investment information sheet (*Vermögensanlagen-Informationsblatt*, VIB) in accordance with § 13 VermAnlG. In addition to the exemption from the prospectus requirement, § 2a VermAnlG also reduces requirements regarding the minimum duration of investments

(§ 5a VermAnlG) and financial accounting and reporting (§§ 23–25 VermAnlG). Nonetheless, the application of § 2a VermAnlG is tied to several conditions: Firstly, the aggregate value of the investments offered by the same issuer must not exceed EUR 2.5 million (on this condition, see also the “Amendments and Updates” section below). Secondly, in order to be eligible for the privileges, the issuer must only offer profit-participating loans, subordinated loans, or other investments as stipulated in § 1 Para. 2 No. 7 VermAnlG. Silent partnerships, which were commonly used in the initial days of crowdinvesting, are not covered by the

<sup>4</sup> With the exception of § 18 Para. 2 and § 19 Para. 1 No. 3 VermAnlG.  
<sup>5</sup> Newly introduced through the KASG.

Figure 1

**Important Exemptions According to §§ 2-2c VermAnlG**

Exclusions § 2 (1)		Exemptions (if investment = profit-participating loan or subordinated loan)			
		§ 2a Crowdinvesting <sup>b</sup>	§ 2b Social projects	§ 2c Charitable projects / religions communities	
No. 1	Cooperative shares <sup>a</sup>	(1) Aggregate value ≤ 2.5 million €	(1) If no performance-based reimbursement for distribution has been paid	(1)	If no performance-based reimbursement for distribution has been paid
No. 1a	Investment products of cooperatives under certain conditions <sup>a</sup>	(3) Investment counseling or mediation via online platform	(1) Aggregate value ≤ 2.5 million €	(1)	Aggregate value ≤ 2.5 million €
No. 3a	Shares of the same investment product ≤ 20	(3) Maximal investment volume (not for capital companies) • 1,000 € • 1,000 €–10,000 € with self-disclosure • Freely available wealth > 100,000 €	(1) Debit interest rate < max. {1.5; issue yield mortgage bond}	(1)	Debit interest < max. {1.5; issue yield mortgage bond}
No. 3b	Total sales price of investment ≤ 100,000 €	or • Investment < 2x average monthly net income	(2) Statutory social objective and total assets, turnover ≤ 10 million €	(2)	Corporate body who is recognized as non-profit or Domestic church or religious group with the legal form of a public body
No. 6	Investment that is only offered to certain groups				
§§ 5a – 26 <sup>c</sup> do not apply		§§ 5a – 26 <sup>c</sup> do not apply in parts (especially in terms of minimum duration, prospectus requirement and accounting standards)			

<sup>a</sup> If no performance-based compensation for distribution is paid. <sup>b</sup> Also for other investments according to § 1 Para. 2 Nr. 7. <sup>c</sup> Regulation on minimum duration and duty to inform.

Source: German Investment Act (VermAnlG), authors' illustration.

exemptions. Instead, unless they fulfill one or more of the circumstances specified in § 2 VermAnlG, they are subject to the prospectus requirement. Thirdly, in accordance with § 2a Para. 3 VermAnlG, investors must submit a self-disclosure about their income and wealth to the platform, if the overall value of one investment exceeds EUR 1,000. Upon reaching defined wealth or income thresholds, the maximum sum that investors are permitted to invest is EUR 10,000. However, these restrictions do not apply to corporate entities (*Kapitalgesellschaften*).

An important restriction concerns the distribution channel. In accordance with § 2a Para. 3 VermAnlG, investments must only be sold through Internet service platforms in the context of investment brokerage or investment consultancy. Only service providers that are obliged by law or decree to verify the formal observance of the just mentioned investment limits, with the help of investor self-declarations, come into consideration to broker investments. The platform obligation is linked to the gatekeeper function that is ascribed to the crowdinvesting platforms as repeat players.

§ 2b VermAnlG also largely exempts the issuer from VermAnlG regulations. Most importantly, issuers are not required to publish a prospectus. Privileges are only applicable to projects whose constitution entails a social objective (§ 2b Para. 2 p. 1 VermAnlG); however, in the law it is not further defined what is meant by the term “social.” In the original draft of the legislation from the Federal Government, it is stated that the rule was designed for “projects in order to create affordable living space and space for micro-businesses or to create and operate nurseries at affordable rates” (Bundesrat printed paper 638/14, p. 46). Throughout the subsequent debates in the Bundestag, it was “emphasized that these regulations should be broadened to encompass social projects with all legal forms” (Bundestag printed paper 18/4708, p. 57). It was also mentioned that the implementation of such legal changes supports many relevant projects and initiatives and thus maintains and further promotes the diversity of these projects in Germany.

§ 2b VermAnlG only covers profit-participating loans and subordinated loans. In contrast to § 2a VermAnlG, other investments as defined in § 1 Para. 2 No. 7 VermAnlG are not covered by the provision. Furthermore, in accordance with § 2b Para. 1 p. 1 VermAnlG, no performance-related compensation must be paid for the distribution of the investment. The aggregate value of the investment must not exceed EUR 2.5 million, and the annual interest rate (§ 489 Para. 5 German Civil Code) is limited to the higher value of either (1) 1.5% or (2) the normal market issue yield for investments of the same duration in the capital market in the form of mortgage bonds. Additionally, the issuer has to comply with certain turnover and balance sheet requirements (§ 2b Para. 2 p. 1 VermAnlG).

§ 2c VermAnlG completes the exemption provisions. Like § 2a and § 2b VermAnlG, it sets out excep-

tions from the regulations of the VermAnlG and is aimed at charitable projects and religious communities. The legislator was guided by the following consideration: “Regarding charitable organizations, it is important to release their honorary activities from bureaucratic and often costly constraints. By doing so, the leap of faith for the millions of citizens in Germany doing honorary work of public utility is strengthened” (Bundestag printed paper 18/4708, p. 57).

The issuer must be either a corporation that is recognized as charitable as defined in § 52 Para. 2 p. 1 German Fiscal Code (AO), or a domestic church or religious community that is constituted in the legal form of a public corporation. § 52 AO considers a corporation to be pursuing charitable purposes if its activities focus on advancing the general public in a material, intellectual, or moral way (§ 52 Para. 1 p. 1 AO). Support of the public is not prevalent if the group of persons benefiting from the support is limited, for example, through family, workforce, or company affiliations (§ 52 Para. 1 p. 2 AO). Corporations are legal subjects according to § 52 AO if they are captured by the German Corporation Tax Act (*Körperschaftsteuergesetz*); that includes corporate entities, cooperatives, associations, institutions, and foundations. Non-Christian religious groups can also make use of § 2c Para. 2 No. 2 VermAnlG. Some Muslim communities, for example, have changed their legal form to that of a public corporation in recent years.

In contrast to § 2a and § 2b VermAnlG, there is no obligation to issue an investment information sheet in § 2c VermAnlG. Furthermore, even more extensive exemptions from the accounting regulations are granted if the aggregate value of the investment does not exceed EUR 250,000 (§ 2c Para. 1 p. 3 VermAnlG). Apart from that, requirements are similar to those set out in § 2b VermAnlG: No performance-related compensation must be paid for the distribution, and the aggregate value of the investment must not exceed EUR 2.5 million. Moreover, the restrictions described in § 2b VermAnlG regarding the annual interest rate apply. However, there are no turnover or balance sheet requirements in § 2c VermAnlG.

In accordance with § 2d VermAnlG, investors who invest in projects covered by §§ 2a to 2c VermAnlG obtain a right of withdrawal, which was also introduced by the KASG.

## Amendments and Updates

On the recommendation of the German Bundestag’s Finance Committee, some of the provisions of the KASG were selectively amended as part of the German Act for the Implementation of the Second Payment Services Directive (*Umsetzungsgesetz zur Zweiten Zahlungsdiensterichtlinie*). All these amendments were based on the recommendations made in the 2016 evaluation report on the KASG by the German Federal Government. The following amendments were made:

- Regarding the threshold of EUR 2.5 million stipulated in § 2a VermAnlG, the reference to the provider was removed. This means that the threshold of EUR 2.5 million is not calculated separately for each crowdinvesting platform, but cumulatively for the issuer irrespective of the number of platforms through which an investment is financed.
- In order to ensure the gatekeeper function of the crowdinvesting platforms and as recommended by the 2016 evaluation report on the KASG, exemption provisions do not apply to issuers who are in a position to exercise significant direct or indirect influence over the company that runs the Internet service platform. For example, a personal link or a connection in the sense of the German stock corporation law are not hard-and-fast conditions for this possible influence.
- The provisions concerning the investment information sheet were fundamentally revised. Pursuant to § 13 Para. 2 VermAnlG, the German Federal Financial Supervisory Authority (*Bundesanstalt für Finanzdienstleistungsaufsicht*, BaFin) now undertakes a formal assessment of the investment information sheet. Only if BaFin has given its approval, the investment information sheet can be published (§ 13 Para. 2 p. 1 VermAnlG) and the offering begins (§ 13 Para. 1 VermAnlG). In addition, the investment information sheet was further standardized – information has to be provided in a certain order now – and must contain some new compulsory details about the risk of total loss and about the fees charged by crowdinvesting platforms. Finally, in accordance with § 13a VermAnlG, crowdinvesting platforms must make the investment information sheets publicly available on their websites without access restrictions to prevent situations in which investors get access to the investment information sheet only after concluding a contract (Klöhn 2017).

Due to the lack of practical experiences, the report of the German Federal Government did not propose any changes as regards the exemption provisions in §§ 2b,

2c VermAnlG for social and charitable projects and religious groups.

**EXEMPTIONS FOR CROWDINVESTMENTS: § 2A VERMANLG**

**Database**

The basis for the evaluation of § 2a VermAnlG is the crowdinvesting database that Lars Hornuf has maintained and kept updated since August 1, 2011.<sup>6</sup> The database contains information about funding initiatives on 56 German crowdinvesting platforms. Of these 56 platforms, 24 portals were still active in 2017, that is, they had offered at least one crowdfunding investment over the previous twelve months. The current evaluation almost completely covers the market for crowdinvesting that comes under the exemption provisions of § 2a VermAnlG. As the study takes into account the observation period from August 1, 2011 to April 1, 2018, it investigates all crowdfunding initiatives since the start of this new funding form.

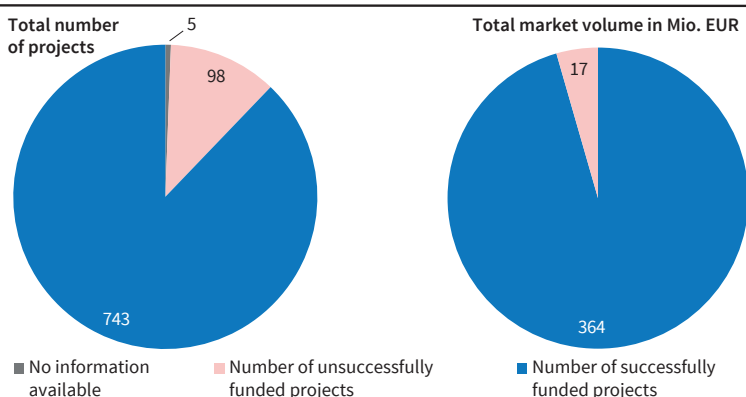
**Development of the Crowdinvesting Market Between 2011 and 2018**

Up to April 1, 2018, German crowdinvesting portals such as Companisto, Exporo, Kapilendo, or Seedmatch offered a total of 846 funding projects, of which 743 were successfully brokered (see Figure 2). The rate of successfully brokered funding projects thus remains high at 88%. In the domain of company funding, a total of 425 successful crowdfunding projects were recorded, followed by 193 projects in the domain of real estate funding, and 124 projects in the social and environmental sphere. In addition, one movie funding project was recorded. Overall, the issue volume actually achieved was EUR 364 million (see Figure 2). Of this, EUR 220 million went on real estate funding; EUR 114 million on the funding of companies; EUR 29 million on the funding of social and environmental projects; and EUR 400,000 on funding a movie. In the 30 months following the date the KASG became binding, the crowdinvesting portals brokered a total of EUR 279 million. In the 30 months prior to the the date the KASG became binding, the platforms were only able to broker EUR 70 million.

Although numerous new crowdinvesting portals were

Figure 2

**Successful and Unsuccessful Funding via Crowdinvesting Portals as well as the Realized Volume of Issues between August 1, 2011, and April 1, 2018 (N = 846)**



Source: Crowdinvesting database (see inter alia Klöhn and Hornuf 2012; Hornuf, Schmitt, and Stenzhorn 2018); authors' calculation.

<sup>6</sup> Initial publications based on this crowdinvesting database have already appeared in relevant field journals (Klöhn and Hornuf 2012; Klöhn and Hornuf 2015; Klöhn, Hornuf, and Schilling 2016a; 2016b; Hornuf and Neuenkirch 2017; Hornuf, Klöhn, and Schilling 2018).

founded since 2011 and also after the entry into force of the KASG, successfully financed and high-volume projects were concentrated on few portals only. Companisto alone managed to broker over EUR 44 million up to April 2018. For Seedmatch, the figure was EUR 36 million. Founded in 2015, the credit marketplace Kapilendo managed to broker funding of EUR 23 million up to the end of the observation period. Currently, the market leader is the real estate funder Exporo, which has brokered funding of EUR 137 million since 2014. The crowdfunding platforms

that operate in Germany are engaged exclusively in investment brokerage (§ 2 Para. 8 No. 4 German Securities Trading Act (WpHG)). Investment advice (§ 2 Para. 8 No. 10 WpHG) is not practiced by the crowdfunding platforms operating in Germany.

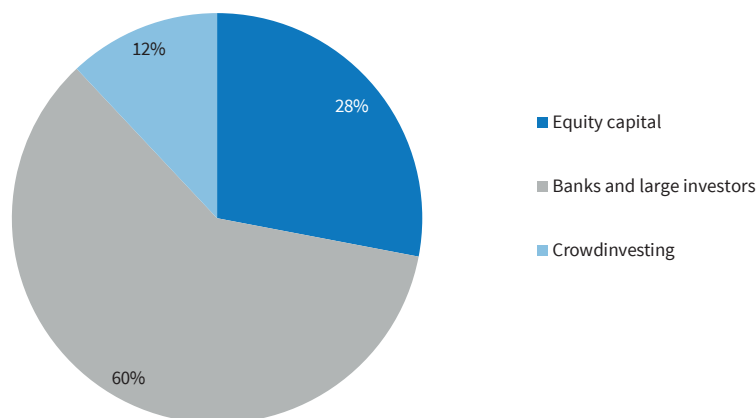
In the years from 2011 to 2017, the German crowdfunding market grew at an average annual rate of 197%. For successful issuers, a funding phase lasted 66 days on average. Drivers of growth continued to be the increasing use of profit-participating loans (Klöhn, Hornuf, and Schilling 2016b), which enabled issuers to achieve higher investment volumes (Hornuf and Schwiendbacher 2017), and the extension of funding from companies to include real estate projects. If one were to take out real estate funding, then the market would have had an average annual growth rate from 2011 to 2017 of 141%. The funding of real estate projects contributed to the growth of the overall market, especially since 2016. Young companies make up the majority of the issuers: out of 811 issuers for which it was possible to determine the start of the funding phase and the founding date, 615 were founded after 2009. Half of the issuers were under three years old at the start of funding.

Crowdfunding initiatives were undertaken particularly often in the domains of real estate and housing, information and communication, and trade and manufacturing industry. A majority of the funded companies continue to pursue an Internet-based business model whereby existing offline distribution channels are supplemented by an online distribution channel. In addition, crowdfunding projects have increased particularly in the areas of energy supply as well as health and social services.

Since many crowdfunding initiatives concern real estate and housing projects, we will discuss whether the funds attracted via crowdfunding are being used in some cases as an equity substitute for bank loans. To this end, we analyzed the funding offers recorded on the platform websites and the investment information

Figure 3

Project Volume for Real Estate Projects (Total Funding Volume EUR 1.3 billion, N = 134)



Source: Crowdfunding database (see inter alia Klöhn and Hornuf 2012; Hornuf, Schmitt, and Stenzhorn 2018); authors' calculation.

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sheets deposited with the BaFin. We investigated what share of the overall financing was contributed by banks and other large institutional investors, by crowdfunding, and by equity capital respectively. The analysis revealed that information about the share of the total funding contributed by other lenders and investors is contained only rarely in the investment information sheets. Quite often this information could be found on the websites of the corresponding crowdfunding portals. Figure 3 gives an overview of the shares contributed by different funding sources to the overall financing of 134 real estate projects for which this information was available. More than half of the total funding volume was put up by banks or other large investors. Alongside an equity ratio of 28%, which includes, for example, reinvestments from housing sales, crowdfunding played a comparatively small role with 12%.

On account of the subordinated loans frequently used, a crowdfunding project generally represents economic and balance sheet equity for the issuer (Werner 2004). In many cases, the issues are realized via a financing vehicle specially set up for the funding. The fact that the terms of the investments are comparatively short for real estate crowdfunding indicates that these projects are often a relatively risky equity substitute for bridge financing. While company funding initiatives have an average minimum term of 56 months (n = 266), for real estate it is only 20 months (n = 183). For social or environmental funding projects, the average minimum term is 75 months (n = 127).

### Crowdfunding Insolvencies and Multiple Investments

In the observation period, insolvencies occurred after 73 of the 743 successful funding rounds. In real estate crowdfunding projects, only one insolvency has been recorded to date. If we assume that the recovery rate is virtually zero in such cases because of the almost non-existent net asset values of a start-up company

and the subordination specified in many funding contracts, then the investors have incurred losses amounting to EUR 12.1 million to date. Additionally, an analysis of the investment information sheets of real estate crowdinvesting campaigns shows that only in very few cases a first-priority collateralization was agreed to secure the investment risk. An explicit reference to a first-priority collateralization for the crowdinvesting investors was found in 5% of the investment information sheets.

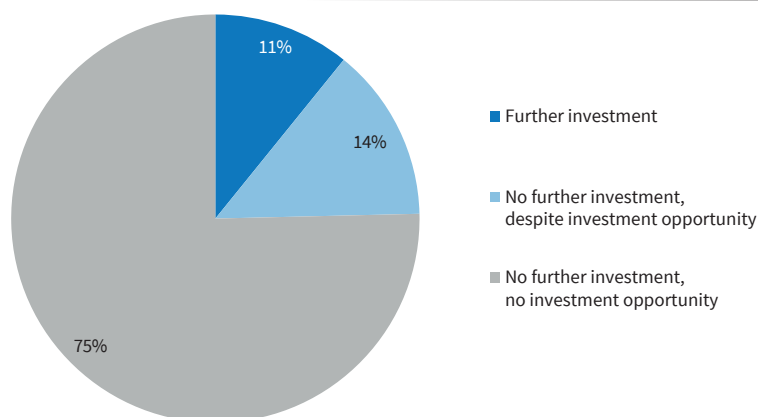
Of the issuers that concluded their financing in the 30 months prior to the date the KASG became binding, 49 out of 226 had reported insolvency or were liquidated. In the period thereafter, 13 out of 437 issuers went into insolvency or were liquidated. The low number of insolvencies after the KASG became binding can be attributed to three factors: First, compared to the issuers that were financed before the date the KASG became binding, the risk of insolvency for recently funded issuers has existed for a much shorter period. Second, in the 30 months after the date the KASG became binding, there was a substantial increase in the funding of real estate and housing projects, which tend to have a lower failure rate than companies. Third, investors have been increasingly reticent to fund start-up companies in recent years, which may have increased the quality of the financing projects offered as a result of better selection.

For the six platforms Bettervest, Companisto, Conda, Green Rocket, Home Rocket, and Innovestment, information was available on whether investors continued to invest in crowdinvesting campaigns after an issuer they had funded went into insolvency or was liquidated. Of the 204 projects analyzed, 17 insolvencies were recorded.<sup>7</sup> On average, each investor made three investments. Overall, 93.5% investors did not experience an insolvency. 6.5% of 8,215 investors (that is, 536 investors) experienced at least one insolvency. Of these 536 investors, 93.5% were affected by exactly one insolvency. Furthermore, 5.4% of the investors saw two projects they had invested in go into insolvency. One investor endured seven insolvencies.

Figure 4 shows that 11% of the 536 investors who experienced one or more insolvencies later continued to invest in crowdinvesting campaigns. Accordingly, 89% of these investors did not make any further investments. In 75% of cases, however, the investors affected by an insolvency had no opportunity to invest further, as no investment project was offered on the respective

Figure 4

#### Percentage of Investors Who Continued to Invest After Experiencing Their First Insolvency (N = 536)



Source: Crowdinvesting database (see inter alia Klöhn and Hornuf 2012; Hornuf, Schmitt, and Stenzhorn 2018); authors' calculation.

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platform during the observation period. In spite of having new investment opportunities, 14% of these investors decided against further participation in crowdinvesting campaigns. Of the investors who further invested despite experiencing an insolvency, 37% made only a single further investment. By contrast, around 32% made more than five further investments. On the basis of the descriptive statistics, it is not possible to establish whether having experienced an insolvency generally prompts investors to re-evaluate the risks associated with crowdinvesting and completely withdraw from the market, which, for example, has been observed in crowdlending (Dorfleitner, Hornuf, and Weber 2018).

#### Size and Type of Investment Product

An evaluation by total sales price showed that 497 of 743 issuers raised less than EUR 500,000. Overall, these issuers comprised just 22% of the total market volume. The remaining 245 issuers, each of which raised EUR 500,000 or more, accounted for 78% of the total market volume. Four issuers issued more than EUR 2.5 million.

Figure 5 shows that during the period prior to July 10, 2015, a total of three issuers issued more than EUR 2.5 million. After the KASG became binding, only one issuer issued more than EUR 2.5 million. Meanwhile, the number of issues increased strongly after the entry into force of the KASG, particularly in the range between EUR 1 million and EUR 2.5 million. As there was a significantly greater number of issuers after the entry into force of the KASG who at least came close to the threshold value of EUR 2.5 million in their crowdinvesting project, this could be a sign of the effectiveness of the EUR 2.5 million threshold, which frees issuers from the obligation to produce a prospectus.

Over the past few years, investors in crowdfunding projects have continued to turn away from silent partnerships in favor of profit-participating loans and subordinated loans. In 2017, particularly corporate

<sup>7</sup> The analysis is based on 204 projects, with 8,215 investors making a total of 21,579 investments.

financing continued to be used almost exclusively for participation loans, which generally also included subordination (Klöhn, Hornuf, and Schilling 2016b). Figure 6 shows the investments and the issue volume of the successful offerings. With around EUR 231 million and EUR 100 million respectively, most of the capital was brokered via subordinated loans and profit-participating loans. Subordinated loans and profit-participating loans thus make up 91% of the issue volume in the overall market. Initially issuers mostly used silent partnerships, but they frequently came up against the EUR 100,000 limit beneath which silent partnerships are exempt from the production of a prospectus as per § 2 Para. 1 No. 3b VermAnlG. Consequently, many issuers fell back on profit-participating loans, which at the time were not yet regulated in the VermAnlG and therefore could be issued to an unlimited amount without a prospectus. Accordingly, the frequent use of profit-participating loans today can be attributed to path

dependencies and the exclusion from the prospectus requirement as per § 2a Para. 1 VermAnlG for investments of up to EUR 2.5 million (defined in § 1 Para. 2 No. 3, 4, and 7 VermAnlG) for profit-participating loans, subordinated loans, and other investment products, which does not apply to silent partnerships or participation rights. The same is true for the use of subordinated loans in the domain of real estate crowdfunding. Real estate issuers also usually offer subordinated loans: only five out of a total of 193 real estate issuers use another form, such as profit-participating loans, silent partnerships, or securities.

### Characteristics of Investors and Investment Amounts

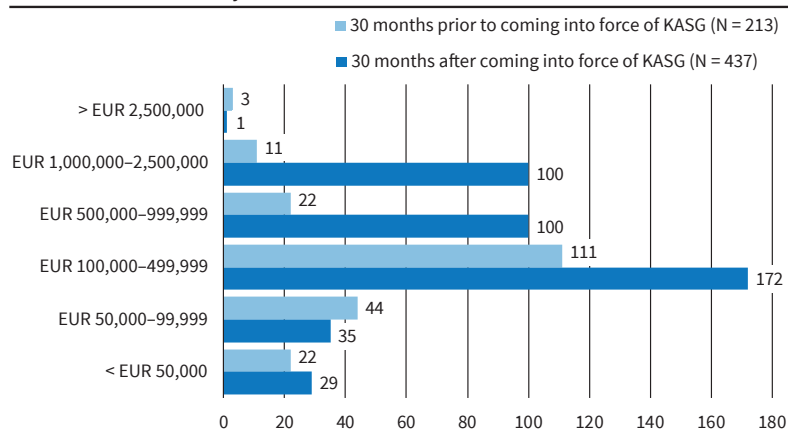
For 456 of the 743 successful issues, the number of investments is known. In these cases, an average of 307 investments were made per issuer. The investors on the crowdfunding portals are 43 years old on average. The overwhelming majority of investors on all portals are male, with men making up 88% of investors on average.

For investment amounts in excess of EUR 1,000, the KASG stipulates a requirement for investors to self-disclose their income and assets. If investors were to try to get round the disclosure requirement, the solution would be to frequently invest exactly EUR 1,000. In addition, the KASG limits the amount an individual investor can put into an investment product to EUR 10,000. If this upper limit has an effect, then one would expect a spike in investments at precisely this threshold.

Figure 7 outlines the investment amounts 30 months before and 30 months after the KASG became binding.<sup>8</sup> Around 14% of investors invested more than EUR 1,000 (13.9% before vs. 13.5% after the KASG). The number of investors who invested exactly EUR 1,000 increased from 9.1% to 12.8% after the entry into force of the KASG. This fact suggests that some investors limited themselves to exactly EUR 1,000 due

Figure 5

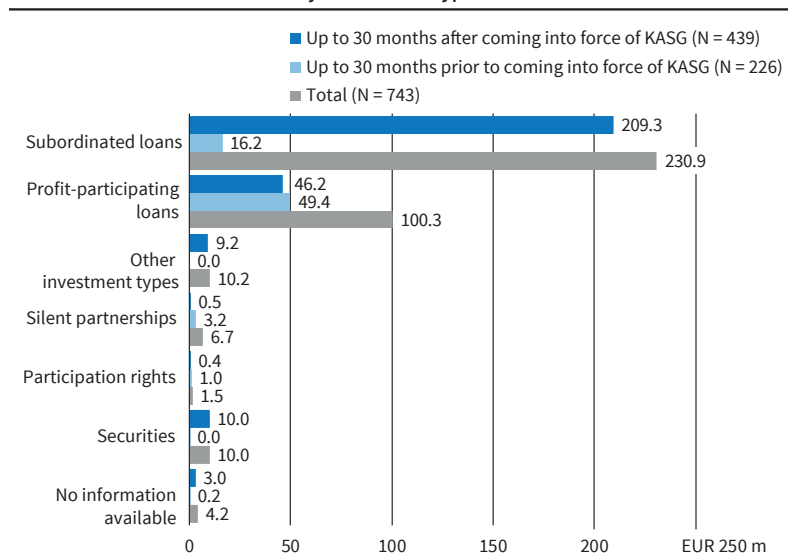
Number of Successful Investment Issuances via Crowdfunding Portals Before and After the Entry into Force of the KASG



Source: Crowdfunding database (see inter alia Klöhn and Hornuf 2012; Hornuf, Schmitt, and Stenzhorn 2018); authors' calculation. © ifo Institute

Figure 6

Volume of Successful Issuances by Investment Types and Securities



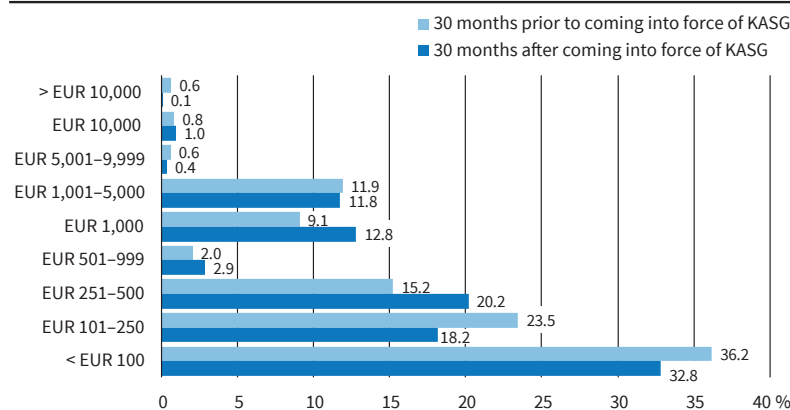
Source: Crowdfunding database (see inter alia Klöhn and Hornuf 2012; Hornuf, Schmitt, and Stenzhorn 2018); authors' calculation. © ifo Institute

<sup>8</sup> The analysis takes a total of 98,516 investments in 232 issues on nine different crowdfunding platforms into account.



Figure 7

Breakdown of Amounts Invested in Crowdfunding Market<sup>a</sup>



<sup>a</sup> Up to 30 months prior to coming into force of KASG: N = 48,018 investments, N = 126 issues.  
Up to 30 months after coming into force of KASG: N = 50,498 investments, N = 106 issues.  
Platforms taken into consideration are Betternvest, Companisto, Conda, Green Rocket, Home Rocket, Innvestment, Kickrs.net, Seedmatch, and United Equity.

Source: Crowdfunding database (see inter alia Klöhn and Hornuf 2012; Hornuf, Schmitt, and Stenzhorn 2018); authors' calculation.

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In total, two survey waves took place in 2016 and 2018.

In our analysis, we take into account the responses from both the first wave in 2016 and the second wave in 2018. The sample comprises a total of 68 observations. Table 2 shows that 50 out of the 68 projects in total came from the social sector and 18 from the charity sector. Relevant areas for social projects include energy, housing, village shops, and community and work partnerships (*Lebens- und Arbeitsgemeinschaften*). The charitable projects include independent schools (e.g. “Waldorf” or “Montessori” schools) or foundations.<sup>9</sup> Table 2 also details

to the self-disclosure required for investments in excess of EUR 1,000.

The number of investors who invested over EUR 10,000 decreased after the entry into force of the KASG, falling from 0.6% to 0.1%. Meanwhile, the number of investors who invested exactly EUR 10,000 increased from 0.8% to 1%. This could be an indication that the second threshold value of EUR 10,000 has a limiting effect on crowdfunding.

**EXEMPTIONS FOR SOCIAL AND CHARITABLE PROJECTS AND RELIGIOUS GROUPS: §§ 2B, 2C VERMANLG**

**Methodological Approach and Data Collection**

Unlike the market for crowdfunding, the market for financing social and charitable projects is substantially less transparent. We therefore employed a different methodical approach to determine and characterize issuers who could potentially be covered by the exemptions in § 2b and § 2c VermAnlG. In the first phase, we identified the relevant sectors drawing on expert interviews with associations and practitioners. Through comprehensive online research, we identified the individual issuers from the sectors previously defined as relevant. In the second phase, we collected survey data on the projects carried out and investments issued by the previously identified issuers.

how many of the 68 projects recorded in total were carried out before and after the KASG became binding. Of the 50 (18) projects recorded in the social (charity) sector, 40 (16) come from a period before the KASG became binding, while ten (two) come from the period after.

When interpreting the results, it is important to bear in mind the potential limitations related to data collection. Since there is no comprehensive database for organizations that may be affected by §§ 2b and 2c VermAnlG as there is for crowdfunding, we were unable to resort to a total population. Instead, we attempted to learn about the population through an intense and comprehensive investigation. Furthermore, there may be selection problems due to voluntary participation in the survey, since there may be reasons influencing

<sup>9</sup> As we did not receive any responses from religious groups, references to exemptions as per § 2c VermAnlG will apply only to charitable projects hereinafter.

Table 2

**Number of Recorded Projects Before and After the Introduction of the KASG**

	Start of project		Total
	Before entry into force of KASG	After entry into force of KASG	
§ 2b VermAnlG	40	10	50
Energy projects	13	5	18
Housing projects	8	3	11
Village shops	13	1	14
Community and work partnerships (especially community-supported agriculture)	5	1	6
Others (e.g., leisure associations, interest groups)	1	0	1
§ 2c VermAnlG	16	2	18
Churches and religious groups	0	0	0
Community-run schools (e.g. Waldorf and Montessori schools, etc.)	9	0	9
Foundations	4	1	5
Others (e.g., care facilities, aid organizations, sports clubs, friends and supporters associations)	3	1	4
<b>Total</b>	<b>56</b>	<b>12</b>	<b>68</b>

Source: Survey on practical experiences with the German Small Investor Protection Act; authors' calculations.

the willingness to participate that are also related to the financing of a project or the investments. Furthermore, the sample size is relatively small with 68 observations. Due to the small number of observations – especially after the introduction of the KASG – we are not able to provide a meaningful comparison between the projects that were initiated before and after the introduction of the KASG. Even though the collected dataset may not be considered representative, this analysis offers some useful insights into the investment behavior of social and charitable projects by investigating their funding patterns and investment structure.

### Compliance with the Exemption Rules

§ 2b Para. 2 VermAnlG and § 2c Para. 2 VermAnlG stipulate certain requirements that issuers must fulfill if they are to utilize the exemption for social and charitable projects for their investment offering (see Figure 1). In total, 45 out of the 50 social projects comply with the turnover and balance sheet requirements as defined in § 2b Para. 2 VermAnlG.<sup>10</sup> Charitable projects were classified as such when it was indicated in the survey that they were charitable in accordance with § 52 Para. 2 p. 1 AO. All 18 charitable issuers included in our analysis stated that this definition applies to them.

Whether the exemptions as per §§ 2b, 2c VermAnlG can actually be used, depends on the features of the investment. For 48 of the 50 social projects and for all 18 charitable projects, we have all the information we need to evaluate the applicability of the exceptions and exemption rules of the VermAnlG.

Overall, 38 of the 48 social projects were carried out before the KASG became binding and ten afterwards. Of the projects that were carried out before the introduction of the KASG, a total of five would have been subject to all duties and liabilities of the VermAnlG if they had been issued after the KASG became binding. In contrast, considering the projects that were carried out after the introduction of the KASG, not a single one was subject to the regulations of the VermAnlG. For these projects, the exception and exemption provisions would apply. Table 3 gives an overview of the

Table 3

#### Social Projects and Compliance with the Exemption Rules

	Before entry into force of KASG	After entry into force of KASG	Total
Number of projects	38	10	48
Application of VermAnlG <sup>a</sup>			
Yes	5 (+ 1)	0	5 (+ 1)
No	33 (- 1)	10	43 (- 1)
Reasons for non-application of VermAnlG <sup>b</sup>			
No investment <sup>c</sup>	2	0	2
§ 2 Para. 1 No. 1	11	6	17
§ 2 Para. 1 No. 1a	11	5	16
§ 2 Para. 1 No. 3a	9	2	11
§ 2 Para. 1 No. 3b	10	5	15
§ 2b	1 (- 1)	1	2 (- 1)

<sup>a</sup> +1/- 1: There is one social project that could make use of the exemption according to § 2b VermAnlG if the interest rate was low enough. As for this project only an interest margin was specified in the questionnaire, no definitive evaluation can be made. <sup>b</sup> A project can fulfill multiple exception conditions. <sup>c</sup> See Table 1. Source: Survey on practical experiences with the German Small Investor Protection Act; authors' calculations.

Table 4

#### Charitable Projects and Compliance with the Exemption Rules

	Before entry into force of KASG	After entry into force of KASG	Total
Number of projects	16	2	18
Application of VermAnlG <sup>a</sup>			
Yes	0 (+ 3)	0	0 (+ 3)
No	16 (- 3)	2	18 (- 3)
Reasons for non-application of VermAnlG <sup>b</sup>			
No investment <sup>c</sup>	9	0	9
§ 2 Para. 1 No. 1	0	0	0
§ 2 Para. 1 No. 1a	0	0	0
§ 2 Para. 1 No. 3a	1	2	3
§ 2 Para. 1 No. 3b	2	1	3
§ 2c	4 (- 3)	0	4 (- 3)

<sup>a</sup> +1/-1: There are three charitable projects that could make use of the exemption according to § 2c VermAnlG if the interest was low enough. <sup>b</sup> A project can fulfill multiple exception conditions. <sup>c</sup> See Table 1.

Source: Survey on practical experiences with the German Small Investor Protection Act; authors' calculations.

exceptions and exemptions used with respect to social projects.

We recorded one social project carried out after the introduction of the KASG that fulfills all conditions necessary to make use of the exemption according to § 2b VermAnlG. The same holds true for one project carried out before the introduction of the KASG; however, for this specific project, it is not fully clear whether it would fulfill § 2b Abs. 3 VermAnlG with regard to the interest rate. This is because the respondent specified only an interest margin for the project and different durations.

All other projects are exempt from §§ 5–26 VermAnlG because they can make use of the exceptions specified in § 2 VermAnlG. First, given that many issuers operate under the legal form of cooperative, they can make use of the exceptions in § 2 Para. 1 No. 1 VermAnlG and § 2 Para. 1 No. 1a VermAnlG. Second, the number of investors and the return on sales often lie within the range of the exception provisions of § 2 Para. 1 No. 3a VermAnlG and § 2 Para. 1 No. 3b VermAnlG.

Overall, 16 of the 18 charitable projects were carried out before the KASG became binding and two after the introduction. For three of the 16 charitable projects that were carried out before the KASG became binding, it is unclear whether the obligations of the VermAnlG would have applied. The remaining projects

<sup>10</sup> In the case only one of the two values were available, we tried to extrapolate the scale of the missing value from the available one.

were exempt from the requirements of the VermAnG.

Table 4 gives an overview of the exceptions and exemptions used with respect to charitable projects. One project that was carried out before KASG became binding would clearly fulfill the exemption requirements of § 2c VermAnG, as it refers to a non-interest-bearing subordinated loan not exceeding the threshold of EUR 2.5 million. Another three projects would possibly have been subject to § 2c VermAnG. Again, applicability depends on how high the interest rate was set and in one case on the size of the investment.

Nine investments would not have been classified as investments according to § 1 Para. 2 VermAnG. This relates to (i) loans that were issued by foundations and covered by bank guarantees and (ii) non-interest-bearing loans (which were designated as *loans* and not as *subordinated loans*) that are used by schools. Other exceptions that were frequently used relate to § 2 Para. 1 No. 3a and b VermAnG.

With regard to the exemption provisions, one should also note that no performance-related compensation was paid for the distribution for any of the investments. Often, the investments were offered only to individuals within the organization. In such cases, the offering was targeted at the members of an association or the parents of students at a school.

## CONCLUSION

Before the introduction of the KASG, there were fears that the new act could hamper the growth potential for crowdinvesting in Germany and greatly restrict the funding opportunities for social and charitable projects. Although the market growth rate declined slightly over the past few years, the overall market continued to grow strongly and now reports an accumulated volume of EUR 364 million. On average, the market had an annual growth rate of 197% between 2011 and 2017. Over the past few years, the biggest driver of this growth was the expansion in real estate funding. The use of securities and prospectuses is still extremely rare. An insolvency occurred in around 10% of the issues. If anything, the number of insolvencies decreased slightly over time, which could well be attributable to the brokering of real estate funding, for which there is only one insolvency to report to date.

An evaluation by *total sales price* shows that in particular issues between EUR 1 million and EUR 2.5 million have strongly increased their share of the total market volume. The fact that more issuers came close to the threshold value of EUR 2.5 million could be interpreted as a sign of the effectiveness of the EUR 2.5 million threshold, which exempts issuers from the prospectus requirement. Over the past few years, investors in crowdfunding projects have continued to turn away from silent partnerships in favor of profit-participating loans and above all subordinated loans, which are privileged by the KASG. After the KASG became binding, the

number of investors who invested exactly EUR 1,000 increased from 9.1% to 12.8%. The number of investors who invested more than EUR 10,000 decreased after the KASG became binding, falling from 0.6% to 0.1%. This suggests that the threshold values are influencing the behavior of investors.

To evaluate the practical experiences with the exemptions in §§ 2b, 2c VermAnG, we had information for 68 social and charitable projects from two survey waves, of which 12 projects stemmed from the time after the KASG became binding. None of the recorded projects that were carried out after the introduction of the KASG were subject to the full list of duties and liabilities of the VermAnG: One project could make use of the exemption in § 2b VermAnG. All other projects were not subject to the VermAnG because they could make use of the exceptions in § 2 VermAnG. These results show that the new exemption provisions introduced in §§ 2b, 2c VermAnG are hardly relevant in practice. However, the comments made in the questionnaires reveal a great deal of uncertainty about the rules introduced via the KASG. Furthermore, the decision-makers in social and charitable projects are not always sufficiently informed about the exceptions and exemption rules.

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*Kristian Kremer*  
**The Entrepreneurial Ecosystem: A Country Comparison Based on the GEI Approach**



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 University of Pécs.

**INTRODUCTION**

According to Martin and Osberg (2007), entrepreneurship has become an area of emerging interest in policy discussions in recent years. Nowadays, it is generally accepted that entrepreneurship is a driving force of innovation and economic growth (Ács et al. 2009, 2016; Audretsch and Keilbach 2004; European Commission 2003; Wennekers 2006). Hence, as a central component of economic growth, promoting activity related to entrepreneurship is gaining increasing importance for policy makers in many countries (Lundström and Stevenson 2005; Audretsch et al. 2006).

The entrepreneur is perceived as someone who has particular skills that enable them to make difficult decisions about the coordination of limited resources under uncertain conditions (Casson 1982). In general, entrepreneurship is described as a process that discovers, evaluates, and exploits opportunities to create future goods and services (Shane and Venkataraman 2000). A more narrow definition characterizes entrepreneurship as “innovation by newly formed independent firms” (Kirchhoff 1994, 37).

Entrepreneurship is considered to be a fundamental and multidimensional concept that is linked to several academic disciplines, including sociology, psychology, and economics (Shane 2003; Casson 2010). According to Deakins and Freel (2009), at least three approaches to understanding entrepreneurship exist: (1) the social-behavioral approach, which underlines the impact of personal attributes as well as the social environment; (2) the psychological trait approach, which deals with an entrepreneur’s personal characteristics; and (3) the economic approach, which studies the role of an entrepreneur within the economy. In short, no general agreement on a definition of entrepreneurship exists. There is no agreement on its key characteristics, not even within the field of economics (Parker 2003). Therefore, Audretsch (2003) concludes that the lack of a commonly acknowledged definition of entrepreneurship mirrors its multidimensionality.

When it comes to measuring entrepreneurship, a distinction must be made between measurements that focus on quantitative aspects and measurements that focus on qualitative aspects (Szerb et al. 2016). Dominant entrepreneurship indicators such as the Global Entrepreneurship Monitor’s (GEM) Total Early-Stage Entrepreneurial Activity (TEA) index correlates nega-

tively with economic development (Szerb et al. 2013). A high rate of self-employment does not necessarily correspond to a high rate of innovative entrepreneurship. It could even be an indication of underdevelopment (Berthold et al. 2006). Indeed, Ács et al. (2017) state that the quantity of entrepreneurship declines as countries develop. Therefore, one has to be very cautious when comparing entrepreneurship figures across countries. With respect to entrepreneurship, Germany lags behind other leading innovation-driven economies and promotion of entrepreneurial activities is necessary. However, this is not a matter of increasing the self-employment rate, but rather a matter of promoting more dynamic and innovative entrepreneurship.

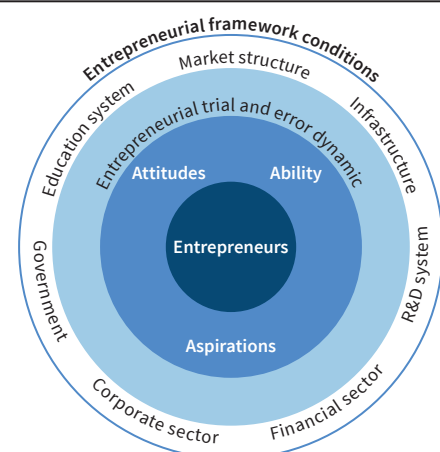
Ács et al. (2017) propose that the entrepreneurial ecosystem of a country is fundamentally a quality rather than a quantity phenomenon. The Global Entrepreneurship and Development Institute (GEDI) has constructed an index to measure this phenomenon, called the Global Entrepreneurship Index (GEI). The GEI approach will be applied in this paper in order to examine Germany’s entrepreneurial ecosystem in comparison to that of the US and the UK. The strengths and weaknesses of the three entrepreneurial ecosystems will be analyzed in detail in order to enhance the understanding of their entrepreneurial performance.

**GLOBAL ENTREPRENEURSHIP INDEX METHODOLOGY**

Ács and Szerb (2011, 2012) and Ács et al. (2014) developed the GEI with the purpose of measuring an entrepreneurial ecosystem. Ács et al. (2014, 479) define an entrepreneurial ecosystem as the “dynamic, institutionally embedded interaction between entrepreneurial attitudes, abilities, and aspirations, by individuals, which drives the allocation of resources through the creation and operation of new ventures.” Figure 1 helps illustrate the structure of an entrepreneurial ecosystem. According to Ács et al. (2017), a sound entrepre-

Figure 1

**Structure of an Entrepreneurial Ecosystem**

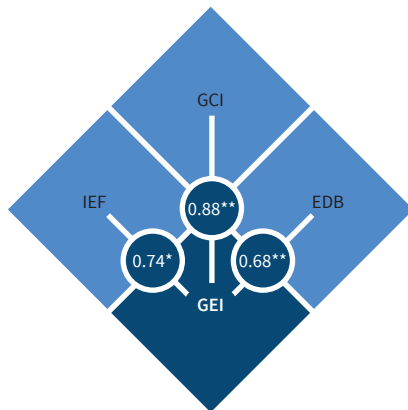


Source: Global Entrepreneurship Index (2017).

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Figure 2

GEI Correlations with Other Indices



Note: \* indicates significance at 10 percent and \*\* at 5 percent level, respectively.  
Source: Global Entrepreneurship Index (2017).

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neural ecosystem will allocate resources towards more productive usage.

The GEI measures the quality and scale of the entrepreneurial ecosystem in countries around the world. By providing a great understanding of a country’s entrepreneurial profile, it gives accurate insights into the strengths and weaknesses of the entrepreneurial ecosystem. The GEI is designed to support policy makers as they explore better ways of promoting entrepreneurship to achieve sustainable economic development (Ács et al. 2017). Figure 2 indicates that the GEI positively correlates with the Ease of Doing Business Index (0.68), the Index of Economic Freedom (0.74), and the Global Competitiveness Index (0.88).

Table 1 shows the multilevel structure of the GEI approach: (1) variables, (2) pillars, (3) subindices and (4) GEI. The GEI includes three subindices: attitudes, abilities, and aspirations. The entrepreneurial attitude (ATT) subindex aims to measure attitudes of individuals related to entrepreneurship. An individual with a posi-

tive attitude towards entrepreneurship is more likely to choose self-employment over alternative occupations. The entrepreneurial ability (ABT) subindex identifies important characteristics of start-ups and entrepreneurs that have the potential for high growth. The ability aspect stands for the quality level of the new ventures that may result. The entrepreneurial aspiration (ASP) subindex refers to the qualitative, distinctive, and strategy-oriented nature of entrepreneurial activities and reflects the potential of a venture to achieve high productivity and rapid growth (Ács et al. 2017; Szerb and Trumbull 2016).

All three subindices include four or five pillars. A healthy entrepreneurial ecosystem requires the pillars (1) to be of similar shape, (2) to continuously improve, and (3) to receive careful maintenance. The 14 pillars reflect that the concept of entrepreneurship has many dimensions. Therefore, each of the 14 pillars includes two variables representing the micro- and macro-level, thus ensuring that the individual and institutional dimensions of an entrepreneurial ecosystem are captured. Analyzing the 14 pillars including the institutional and individual variables can provide an in-depth view of a country’s entrepreneurial ecosystem and its strengths and weaknesses (Ács et al. 2017). A brief description of the pillars is shown in Table 2.

Unlike other entrepreneurship measurements (e.g., TEA, self-employment rate), the GEI approach shows a mild S-shaped relationship between entrepreneurship and the economic development of a country, with an  $R^2 = 0.81$  (Figure 3). Also, the three subindices show a significant and strong relation in this regard. The ATT subindex shows a correlation of  $R^2 = 0.70$ , the ABT subindex shows a correlation of  $R^2 = 0.80$  and the ASP subindex shows a correlation of  $R^2 = 0.72$ . Hence, the explanatory power of the ABT subindex is the strongest among the three subindices, implying the closest relationship between entrepreneurial abilities and the economic development measured by GDP per capita (PPP) (Ács et al. 2017).

Table 1

Structure of the GEI

	Subindices	Pillars	Variables	
			Individual	Institutional
Global Entrepreneurship Index	Attitudes	Opportunity Perception	Opportunity Recognition	Freedom and Property
		Start-Up Skills	Skill Perception	Education
		Risk Acceptance	Risk Perception	Business Risk
		Networking	Know Entrepreneurs	Connectivity
		Cultural Support	Career Status	Corruption
	Abilities	Opportunity Start-Up	Opportunity Motivation	Tax and Government
		Technology Absorption	Technology Level	Tech Absorption
		Human Capital	Educational Level	Labor Market
		Competition	Competitors	Competitiveness
	Aspirations	Product Innovation	New Product	Technology Transfer
		Process Innovation	New Tech	Science
		High Growth	Gazelle	Finance and Strategy
		Internationalization	Export	Economic Complexity
		Risk Capital	Informal Investment	Depth of Capital Market

Source: Global Entrepreneurship Index (2017).

Table 2

Description of the GEI Pillars

Pillars	Description
Opportunity Perception	Opportunity Perception refers to the entrepreneurial opportunity perception potential of the population and weights this against the freedom of the country and property rights.
Start-Up Skills	Start-Up Skills captures the perception of start-up skills in the population and weights this aspect with the quality of education.
Risk Acceptance	Risk Acceptance captures the inhibiting effect the population's fear of failure has on entrepreneurial action combined with a measure of the country's risk.
Networking	This pillar combines two aspects of Networking: (1) a proxy of the ability of potential and active entrepreneurs to access and mobilize opportunities and resources and (2) the ease of access to each other.
Cultural Support	The Cultural Support pillar combines how positively a given country's inhabitants view entrepreneurs in terms of status and career choice and how the level of corruption in that country affects this view.
Opportunity Start-Up	The Opportunity Start-Up pillar captures the prevalence of individuals who pursue opportunity-driven start-ups (as opposed to necessity-driven start-ups) of potentially better quality weighted with the combined effect of taxation and government on quality of services.
Technology Absorption	The Technology Absorption pillar reflects the technology intensity of a country's start-up activity combined with a country's capacity for firm-level technology absorption.
Human Capital	The Human Capital pillar captures the quality of entrepreneurs by weighting the percentage of start-ups founded by individuals with higher than secondary education with a qualitative measure of the propensity of firms in a given country to train their staff combined with the freedom of the labor market.
Competition	The Competition pillar measures the level of start-ups' product or market uniqueness combined with the market power of existing businesses and business groups as well as with the effectiveness of competitive regulation.
Product Innovation	The Product Innovation pillar captures the tendency of entrepreneurial firms to create new products weighted by a country's technology transfer capacity.
Process Innovation	The Process Innovation pillar captures the use of new technologies by start-ups combined with the Gross Domestic Expenditure on Research and Development (GERD) and the potential of a country to conduct applied research.
High Growth	The High Growth pillar is a combined measure of (1) the percentage of high-growth businesses that intend to employ at least ten people and to grow more than 50 percent in five years, (2) the availability of venture capital, and (3) business strategy sophistication.
Internationalization	The Internationalization pillar captures the degree to which a country's entrepreneurs are internationalized, as measured by businesses' exporting potential weighted by the level of the country's economic complexity.
Risk Capital	The Risk Capital pillar combines two measures of finance: informal investment in start-ups and a measure of the depth of the capital market. Availability of risk capital is necessary to fulfill growth aspirations.

Source: Global Entrepreneurship Index (2017).

A special feature of the GEI approach is the bottleneck methodology. This means the worst-performing pillar acts as a bottleneck that negatively interacts with the other pillars. In consequence, achieving the optimal allocation of entrepreneurial resources depends on equalizing all 14 pillars. Hence, substituting one pillar with another pillar is only partially and not fully possible. As a result, the best way to enhance the GEI is to improve the worst-performing pillar, so boosting the bottleneck pillar should be the most important priority for a country's entrepreneurship policy (Szerb and Trumbull 2016). This approach is based on the Theory of the Weakest Link (TWL) and Theory of Constraints (TOC), arguing that the lowest-value component has the biggest impact on the performance of a system. Therefore, a system can be improved the most by removing the binding constraint (Goldratt 1994). This interrelation is included in the GEI methodology by applying the "penalty for bottleneck" algorithm, which systematically penalizes pillars of an ecosystem according to its poorly performing pillars (Ács et al. 2017). A detailed description of the GEI methodology can be found in Ács et al. (2017).

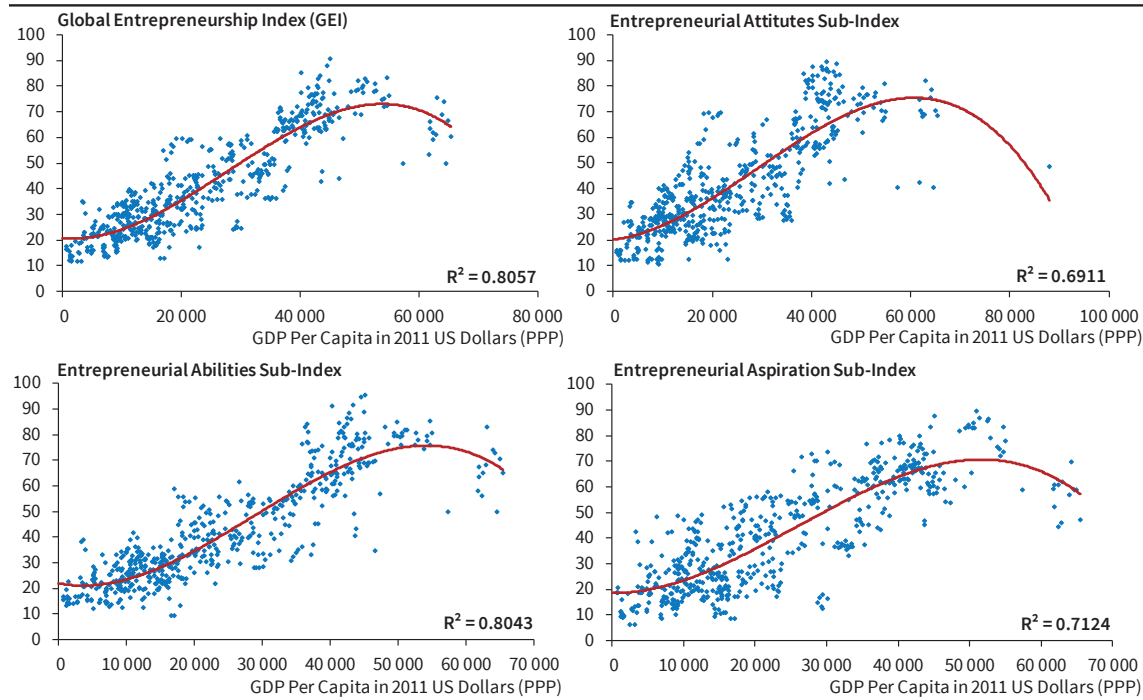
## ENTREPRENEURIAL ECOSYSTEM COUNTRY COMPARISON

In the following, the entrepreneurial ecosystems of Germany, the US, and the UK are analyzed and compared to each other based on the GEI approach. While the dataset used includes pooled data from 2011 to 2015 for a total of 93 countries, this paper focuses on the three countries under comparison and the 20 best-ranked countries in the GEI. The average scores of a five-year time period are used in order to decrease measurement error and maximize the number of investigated countries.

Table 3 shows the overall scores of the 20 best-ranked entrepreneurial economies in the GEI. The US has a large lead with a GEI score of 80.9 (out of 100). In the three subindices, the US ranks no lower than 4th, emphasizing its overall strong and balanced entrepreneurial ecosystem. By comparison, the UK is ranked 7th with a GEI score of 70.5. It has a strong but less balanced entrepreneurial ecosystem, as its rankings in the three subindices show higher deviations. Thus, ABT (2nd) is by far the UK's strongest subindex, whereas it ranks sub-

Figure 3

Correlations of GEI and the Three Sub-Indices with GDP per Capita (PPP)



Source: Global Entrepreneurship Index (2017).

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stantially lower in the ATT (11th) and ASP (14th) subindices. Germany is ranked 13th overall with a GEI score of 63.9. It ranks considerably lower in the ATT (15th) and ABT (13th) subindices than in the ASP subindex, in which it ranks 11th. In comparison to the other countries in the top 20 ranking, Germany shows a moderately balanced entrepreneurial ecosystem.

The entrepreneurial performance of the 20 best-ranked countries varies significantly from 80.9 (US) to 57.6 (Qatar). Overall, the GEI top 20 ranking is dominated by European countries and countries with a high-income level. The European countries include Sweden, Switzerland, Denmark, UK, Netherlands, Ireland, Finland, France, Belgium, Germany, Austria, Norway, and Luxembourg. However, there are only three European countries ranked in the top six: Sweden, Switzerland, and Denmark. Besides 13 European countries, the top 20 include two countries from North America (US, Canada), two countries from Asia Pacific (Australia, Taiwan), two countries from the Middle East (Israel, Qatar), and one country from South and Central America (Chile).

It is apparent that the GEI scores between second-place Sweden (77.2) and sixth-place Australia (74.5) are very close, differing by only 2.7 points. Therefore, small changes in scores from one year to another can produce a relatively large shift among

Table 3  
GEI Top 20 Ranking, 2011–2015 Average

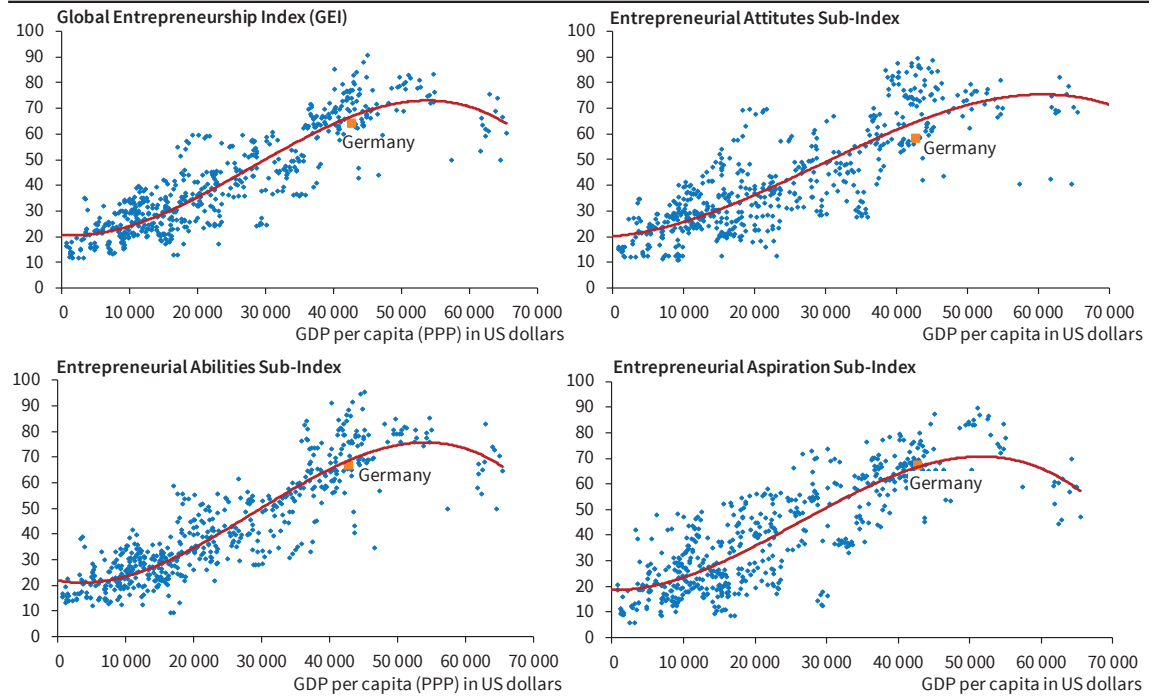
Country	GEI	Rank	ATT	Rank	ABT	Rank	ASP	Rank
United States	80.9	1	75.8	4	80.5	4	86.5	1
Sweden	77.2	2	78.8	2	80.2	5	72.7	5
Canada	76.5	3	74.2	6	78.9	6	76.4	4
Switzerland	76.3	4	70.1	8	80.8	3	78.0	2
Denmark	76.2	5	73.3	7	86.4	1	68.9	9
Australia	74.5	6	74.3	5	78.7	7	70.4	6
United Kingdom	70.5	7	67.2	11	81.0	2	63.3	14
Netherlands	69.7	8	77.6	3	69.1	9	62.5	15
Ireland	68.6	9	62.4	13	78.4	8	65.1	12
Finland	67.6	10	81.0	1	57.7	17	64.1	13
France	65.8	11	59.9	14	67.4	12	69.9	8
Belgium	64.8	12	57.9	17	68.2	10	68.4	10
Germany	63.9	13	58.1	15	66.5	13	67.2	11
Austria	63.5	14	64.0	12	67.7	11	58.6	23
Taiwan	63.1	15	55.5	18	56.6	20	77.3	3
Norway	60.1	16	68.5	10	64.9	15	47.0	35
Chile	59.1	17	69.2	9	52.0	25	56.2	24
Israel	59.0	18	53.0	20	54.0	23	69.9	7
Luxembourg	58.7	19	48.3	24	66.0	14	61.7	17
Qatar	57.6	20	55.2	19	55.5	21	61.9	16

Source: Global Entrepreneurship Index Data (year).



Figure 4

GEI Performance Relative to GDP per Capita of Germany, 2011–2015 Average



Source: Global Entrepreneurial Index Data (2017).

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the highest-ranked countries. A regional breakdown of the countries is relevant, especially when performing benchmarks to identify best practices for fostering entrepreneurship. The average GEI score of the European countries in the top 20 ranking is 67.9, which highlights the superior position of the US compared to European countries in regard to entrepreneurial performance.

Figure 4 shows the relationship between Germany's GDP per capita (PPP) and the GEI, as well as the three subindices ATT, ABT, and ASP. Germany performs below the global trend line in the GEI with a score of 63.9. This indicates that Germany has the potential for more dynamic and innovative entrepreneurship, as the performance is lower than its GDP-predicted score would lead one to expect. On closer inspection of the three subindices, it becomes obvious that Germany's lowest score is in the ATT subindex with 58.1. In comparison, its ABT subindex score is 66.5 and its ASP subindex score is 67.2. The ASP subindex is the only index where Germany performs slightly above the global trend line. It is interesting that the ATT subindex, which deals generally with the attitude a society has towards entrepreneurship, is identified as the relative weak point in Germany's entrepreneurial ecosystem.

The GEI performance of the US in relation to its GDP per capita is shown in Figure 5. The US performs above the global trend line in the GEI with a score of 80.9, indicating that the performance of its entrepreneurial ecosystem is higher than its GDP-predicted score. A closer examination reveals that the US performs above the global trend line in all three subindices with a score of 75.8 in ATT, 80.5 in ABT, and 86.5 in ASP.

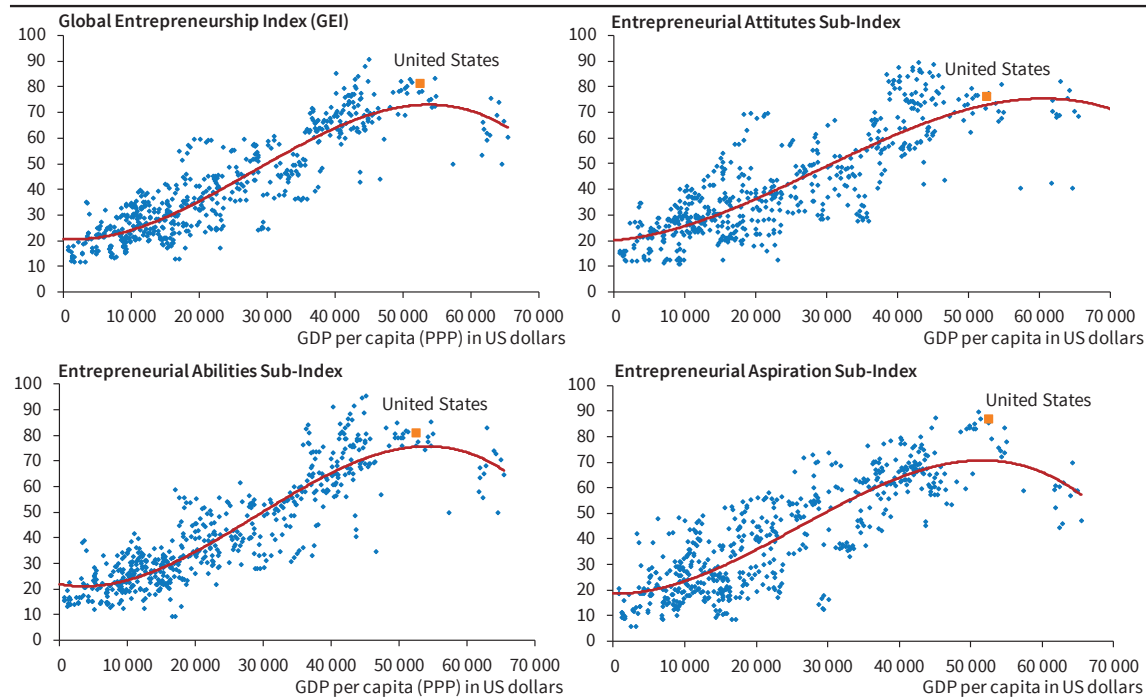
While the US performs better than its GDP-predicted performance for all subindices, its performance is particularly strong in the ASP subindex, which reflects aspirations within ventures that are already in the start-up pipeline.

Figure 6 shows the performance of the UK in relation to its GDP per capita. The UK performs above the global trend line in the GEI with a score of 70.5, indicating that the performance of its entrepreneurial ecosystem is higher than its GDP-predicted score. While the UK performs better than its GDP-predicted performance for all subindices, its performance is particularly strong in the ABT subindex with a score of 81.0. In comparison, it scores 67.2 on the ATT subindex and 63.3 on the ASP. This means the ABT subindex, which refers to start-ups in the medium- or high-technology sectors that are founded by educated and opportunity-motivated individuals, represents a significant proportion of the relatively strong performance of the UK's entrepreneurial ecosystem.

While the overall scores of the GEI and the three subindices reveal something about the entrepreneurial ecosystem performance of a country, they do not provide enough information to draw conclusions about bottlenecks in the ecosystem. Therefore, a closer look at the individual pillars has to be taken in order to identify entrepreneurial strengths and weaknesses of the countries under comparison. Figure 7 shows a comparison of the GEI pillar scores of the entrepreneurial ecosystems in Germany, the US, and the UK. It confirms the previous findings that the US has the strongest entrepreneurial ecosystem, which is more balanced and shows overall higher scores in the GEI pillars compared

Figure 5

GEI Performance Relative to GDP per Capita of the United States, 2011–2015 Average



Source: Global Entrepreneurial Index Data (2017).

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to the UK and Germany. The ranking of the subindices indicates that the UK’s entrepreneurial ecosystem is less balanced than Germany’s. However, when taking a closer look at the GEI pillars, it is Germany’s entrepreneurial ecosystem that seems to be less balanced, due to Germany’s significantly low scores in the pillars of Risk Acceptance, Networking, and Human Capital.

The low score in the Risk Acceptance pillar stands for the high level of risk aversion present in the German culture. The Networking pillar combines an entrepreneur’s knowledge and their ability to connect with others. A low score in this pillar might be the result of a quantitatively low level of entrepreneurs and self-employed people in Germany. The Human Capital pillar represents an entrepreneurial ecosystem’s need for an educated, experienced, and healthy workforce. Nevertheless, all three pillars can be seen as the main bottlenecks holding back the German entrepreneurial ecosystem. However, in comparison to the US and the UK, Germany performs relatively well in Technology Absorption, Competition, and Process Innovation.

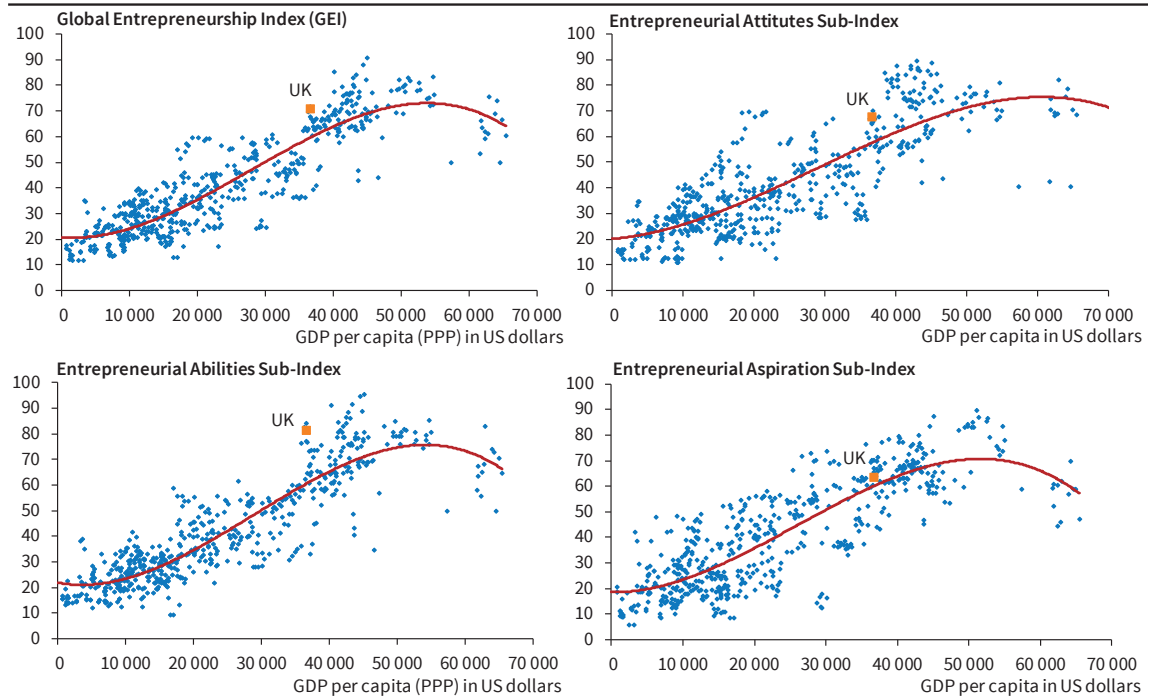
Obviously, Networking is the main bottleneck for the US. The reason seems to be the same as in Germany, although the US has a much higher rate of entrepreneurs and self-employed people. The same applies to Networking in the UK, where it is also a bottleneck. Besides Networking, the UK has a relatively low score in the Start-Up Skills pillar, which is necessary to launch a successful venture and – in developed countries – has to be acquired through formal education. This is probably why Germany also performs weakly on this pillar. For the US, however, Start-Up Skills is one of the main pillars of their entrepreneurial ecosystem.

Figure 8 shows the development of the three subindices and the GEI scores of Germany from year 2008 to 2016. One positive point worth noting is that since 2008, Germany’s GEI score has shown slow but stable growth with the exception of one downturn recorded in 2014. Overall, the GEI score improved from 57.7 in 2008 to 65.9 in 2016, an increase of 14.2 percent. Taking a closer look at the subindices, it seems that the downturn in 2014 corresponds to a strong downturn in the ABT subindex between 2012 and 2014. The reason for this strong downturn probably lies in the Human Capital pillar, which has already been identified as one of Germany’s bottleneck pillars. Nevertheless, the ABT subindex shows the strongest increase of the three subindices with 15.5 percent, indicating that German policy makers are aware of deficits represented in this subindex, in particular deficits related to the Human Capital pillar. For comparison, the ATT subindex experienced an overall increase of 13.6 percent and the ASP subindex an increase of 13.5 percent. It is notable that the ATT subindex is significantly lower than the other two subindices throughout the time period analyzed, emphasizing that the cultural aspects represented by the ATT subindex are of major importance when it comes to Germany’s entrepreneurial ecosystem and seem to be difficult to improve within just a few years.

Compared to the US and the UK, Germany is in a unique position as the financial crisis did not negatively impact its GEI score. In both the US and the UK, GEI score development experienced a downturn between 2008 and 2010 (Figure 9). After 2010, the US shows stable but slow GEI growth until 2016, a trend that also

Figure 6

GEI Performance Relative to GDP per Capita of the United Kingdom, 2011–2015 Average



Source: Global Entrepreneurial Index Data (2017).

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applies to the three subindices. The UK shows a strong increase in its GEI score after 2010, followed by a decrease after 2012 and a renewed rise in 2014, demonstrating much higher deviations compared to Germany and the US. The higher deviations are also apparent in the subindices. The remarkable increase of the GEI score since 2014 is mainly due to a strong increase in the ASP subindex, which rose by 33.3 percent within just two years.

An analysis of the 14 pillars including the individual and institutional variables, as shown in the next three tables, will help provide a deeper understanding of the entrepreneurial ecosystems and their strengths and weaknesses in the three countries under comparison. For each country, 28 normalized variable scores averaged over the 2011–2015 time period are presented, with 1.00 the highest score for each variable and 0.00 the lowest. The colors represent quartiles to indicate a country's position relative to the other countries included in the GEI: red stands for the lowest (4th) and blue for the highest (1st) quartile.

Table 4 shows Germany's GEI data relative to the other 93 countries included in the GEI. With an average GEI score of 63.9, Germany's entrepreneurial ecosystem ranks within the 1st quartile. Start-Up Skills, Risk Acceptance, Human Capital, High Growth (2nd quartile), and Networking (3rd quartile), which had already been identified as bottleneck pillars, are the only pillars not ranked within the 1st quartile. Whereas the institutional variables have an average score of 0.87 and are ranked within the 1st quartile on average, the individual variables have an average score of only 0.60, which ranks them within the 3rd quartile on average. The fact

that Germany has an outstanding institutional environment but performs low on the individual variables suggests that the attitudes, abilities, and aspirations of individuals are holding back entrepreneurial performance. Specifically, individual variables of the ATT sub-index can be identified as a relative weakness within Germany's entrepreneurial ecosystem.

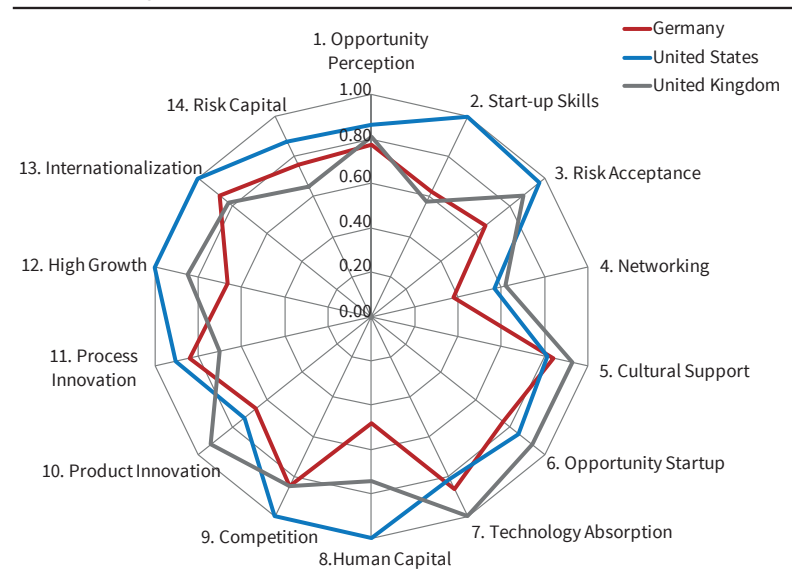
The following takes a closer look at Germany's four major bottleneck pillars. The Start-Up Skills pillar (0.50) is made up of Education (0.76) and Skill Perception (0.43). People think they lack the skills to start a business but their educational level suggests that they are not, which indicates a lack of confidence in their own entrepreneurial abilities. Risk Acceptance (0.59) is made up of Business Risk (1.00) and Risk Perception (0.39). This pillar shows the largest difference between institutional and individual variables and underlines Germans' high level of risk aversion. Networking (0.41) is Germany's weakest pillar and constitutes a combination of Connectivity (0.83) and Know Entrepreneurs (0.37). The Know Entrepreneurs variable represents the percentage of the population aged 18 to 64 that knows someone who started a business in the past two years. As the number of entrepreneurs in Germany and generally in innovation-driven countries is relatively low, it is no surprise that this pillar exhibits weak performance. The Human Capital pillar is a combination of Labor Market conditions and the Educational Level. The fact that Germany's performance is weak in both institutional (0.52) and individual (0.64) variables is probably why this pillar seems to be the most discussed when it comes to the improvement of Germany's entrepreneurial ecosystem.

In comparison, the US (Table 5) ranks within the 1st quartile with an average GEI score of 80.9. Networking (2nd quartile), which was already identified as the main bottleneck pillar, is the only pillar not ranked within the 1st quartile. Similarly to Germany, the US performs better in the institutional variables (0.93) than in the individual variables (0.76). However, the individual variables are still ranked within the 1st quartile on average. On closer inspection, the individual variables of the ATT subindex can be defined as a relative weakness within the US entrepreneurial ecosystem, just like in Germany's.

Besides taking a look at Networking as the main weak pillar, the bottleneck analysis of the US focuses on the individual variables of the ATT subindex. Obviously, the weak performance in the Networking pillar (0.50) is caused by the low score on the Know Entrepreneurs individual variable (0.43). The reason for this low score seems to be the same as in Germany, as the number of entrepreneurs in innovation-driven countries is generally relatively low. The other individual variables of the ATT subindex are all ranked in the 2nd quartile. Thus, the US has relatively weak performance in terms of Opportunity Recognition, Skill Perception, Risk Perception, and Career Status. Although these variables constitute the main bottlenecks of the US entrepreneurial ecosystem, the performance in this regard is still satisfying, especially compared to other leading innovation-driven countries.

Figure 7

Country Comparison of GEI Pillars  
2011–2015 Average



Source: Global Entrepreneurship Index Data (2017).

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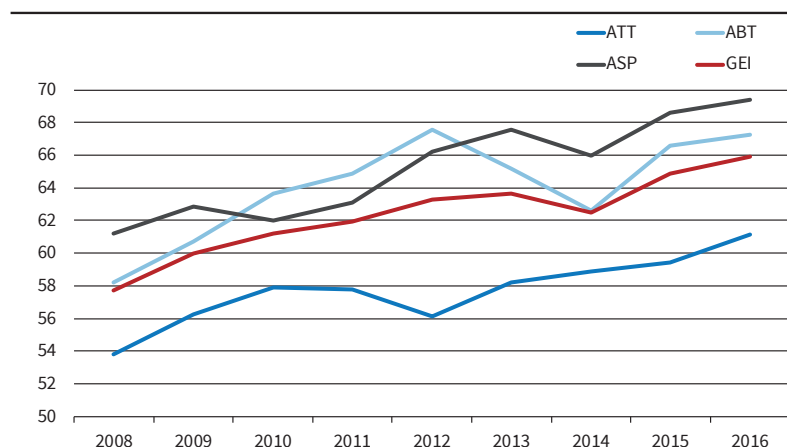
The UK's entrepreneurial ecosystem (Table 6) ranks within the 1st quartile with an average GEI score of 70.5. In comparison to Germany and the US, the UK has the most pillars not ranked within the 1st quartile. Start-Up Skills, Networking, Process Innovation, High Growth, Internationalization, and Risk Capital are all ranked within the 2nd quartile. Similarly to Germany and the US, the UK performs better on the institutional variables than in the individual variables. With an average score of 0.87, the institutional variables are ranked within the 1st quartile on average. The individual variables are ranked only within the 3rd quartile on average with an average score of 0.66. Thus, the average difference between both variables is smaller compared to Germany, but higher compared to the US. The individual variables of the ATT and ASP subindices can be identified as relative weaknesses within the entrepreneurial ecosystem.

It is notable that the UK performs very well in the individual variables of the ABT subindex, which are all ranked within the 1st quartile.

The bottleneck analysis of the UK's entrepreneurial ecosystem focuses on three pillars, including Networking, Risk Capital, and Start-Up Skills. It is worth noting that Networking is a bottleneck for all three countries under comparison. The reason seems to be the same in all cases, although a closer inspection would be necessary. Similar to

Figure 8

Development of Three Sub-Indices and GEI Scores of Germany  
2008–2016

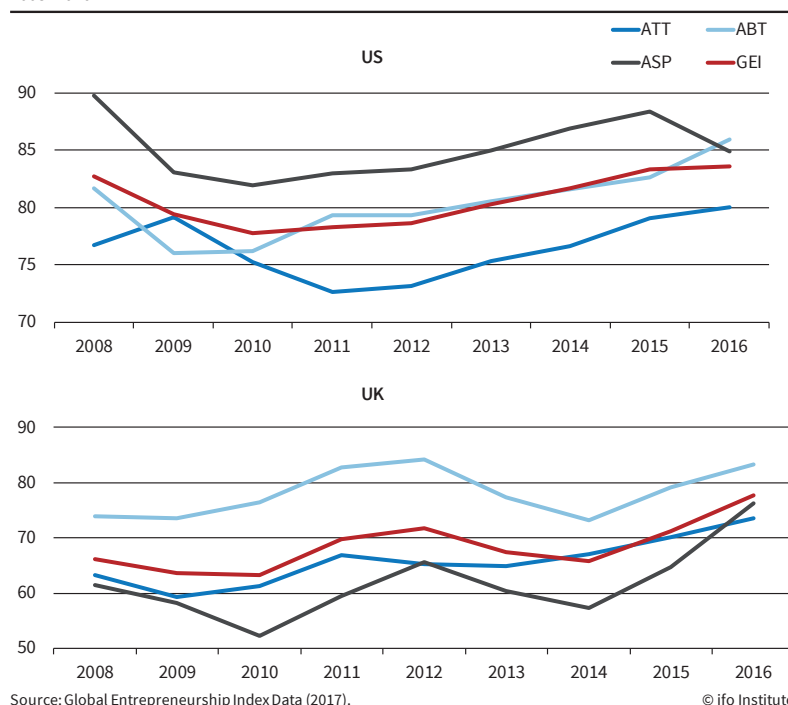


Source: Global Entrepreneurship Index Data (2017).

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Figure 9

Development of Three Sub-Indices and GEI Scores of the US and UK 2008–2016



Germany, a divergence can be identified in the UK’s Start-Up Skills pillar. The divergence between the institutional variable of Education and the individual variable of Skill Perception might indicate people’s lack of confidence in their own entrepreneurial abilities. Compared to Germany (0.72) and the US (1.00), the UK (0.56) shows relatively weak performance in the Risk Capital pillar, which is made up of Depth of Capital Market (0.99) and Informal Investment (0.63). Thus, the UK is in need of more informal investors who make higher investments in other people’s new businesses to improve entrepreneurial performance.

**GERMANY’S ENTREPRENEURIAL ECOSYSTEM**

The previous analysis of Germany’s entrepreneurial ecosystem and the comparison to the US and the UK based on the GEI approach revealed interesting insights into its strengths and weaknesses. The following literature review will contribute additional information and enhance the understanding of the issues Germany is facing as it competes with leading entrepreneurial ecosystems like the US and the UK.

Germany is one of Europe’s innovation leaders with high use of and access to technology (Kontolaimou et al. 2016). Its economy is characterized by a strong small- and medium-sized business sector. Yet in regard to start-up activity, Germany ranks among the lowest of the OECD countries. Indeed, entrepreneurs represented only 7 to 9 percent of the working population from the 1970s to 2000s (Freytag and Thurik 2007). Over the years, the number of companies being founded

in Germany has been decreasing, and in 2016, the number of individuals who started a self-employed activity fell to a new low of 672,000 (KfW 2017). There has been a decreasing number not only of new individual project businesses, but also of larger and more innovative businesses. Although Germany’s macroeconomic performance is relatively good, innovative companies like Apple, Google, or Amazon are not being founded in Germany or in the European Union in general (Röhl 2016). Ács et al. (2017) confirm that Europe is still struggling to create innovative new billion-dollar companies as the US is able to do.

Liñán and Fernandez-Serrano (2014) confirm the deep interrelationships between entrepreneurial activities, economic variables, and cultural facets. The cultural facets

of entrepreneurship reflect an informal institutional framework that includes values, norms, and codes of conduct associated with an advanced level of social approval and acceptance of entrepreneurship (Kibler et al. 2014). Strong signs exist that Germany’s weakness in regard to entrepreneurship is related to cultural dimensions. However, establishing an entrepreneurial culture may require a longer period of time. In contrast, governance structures, formal institutions, and resource allocation change much more frequently and can be considered as anchored in a country’s informal institutional framework (Fritsch and Wyrwich 2014). Nevertheless, there exists the possibility that activities related to entrepreneurship may lead to cultural change (Liñán and Fernandez-Serrano 2014).

German’s perception of the role of the state contradicts greatly with the perceptions prevalent in the US and the UK. In Germany, people rely more on a strong and supporting state with regard to both social policy and the economy (Röhl 2016). Indeed, with no difference across generations, 62 percent of Germans believe the state is responsible for providing social supports. Furthermore, 72 percent of Germans view success as being outside individual control, with a split evident between academics (55 percent) and non-academics (74 percent) (Fuerlinger et al. 2015). This goes along with a high level of risk aversion, as the idea of being self-employed is primarily seen as a source of greater risk (Röhl 2016). Therefore, it is no surprise that Germans value the employee-friendly environment, and associate entrepreneurship as a career with higher risk.

Table 4

**Germany's GEI Data, 2011–2015 Average**

Subindices	Institutional Variables		Individual Variables		Pillars	
Entrepreneurial Attitudes	Freedom and Property	0.96	Opportunity Recognition	0.55	Opportunity Perception	0.74
	Education	0.76	Skill Perception	0.43	Start-Up Skills	0.50
	Business Risk	1.00	Risk Perception	0.39	Risk Acceptance	0.59
	Connectivity	0.83	Know Entrepreneurs	0.37	Networking	0.41
	Corruption	0.89	Career Status	0.52	Cultural Support	0.80
				ATT average	58.1	
Entrepreneurial Abilities	Tax and Government	0.85	Opportunity Motivation	0.72	Opportunity Start-Up	0.75
	Tech Absorption	0.86	Technology Level	0.88	Technology Absorption	0.85
	Labor Market	0.52	Educational Level	0.64	Human Capital	0.41
	Competitiveness	0.92	Competitors	0.75	Competition	0.88
				ABT average	66.5	
Entrepreneurial Aspirations	Technology Transfer	0.97	New Product	0.57	Product Innovation	0.67
	Science	0.93	New Tech	0.48	Process Innovation	0.81
	Finance and Strategy	0.77	Gazelle	0.66	High Growth	0.62
	Economic Complexity	1.00	Export	0.74	Internationalization	0.77
	Depth of Capital Market	0.92	Informal Investment	0.76	Risk Capital	0.72
					ASP average	67.2
	Institutional average	0.87	Individual average	0.60	GEI	63.9

Source: Global Entrepreneurship Index Data (2017).

Table 5

**US's GEI Data, 2011–2015 Average**

Subindices	Institutional Variables		Individual Variables		Pillars	
Entrepreneurial Attitudes	Freedom and Property	0.91	Opportunity Recognition	0.68	Opportunity Perception	0.83
	Education	1.00	Skill Perception	0.68	Start-Up Skills	1.00
	Business Risk	1.00	Risk Perception	0.65	Risk Acceptance	0.91
	Connectivity	0.84	Know Entrepreneurs	0.43	Networking	0.50
	Corruption	0.82	Career Status	0.66	Cultural Support	0.83
				ATT average	75.8	
Entrepreneurial Abilities	Tax and Government	0.81	Opportunity Motivation	0.73	Opportunity Start-Up	0.72
	Tech Absorption	0.93	Technology Level	0.84	Technology Absorption	0.80
	Labor Market	1.00	Educational Level	0.95	Human Capital	1.00
	Competitiveness	0.85	Competitors	1.00	Competition	0.97
				ABT average	80.5	
Entrepreneurial Aspirations	Technology Transfer	0.98	New Product	0.66	Product Innovation	0.85
	Science	0.95	New Tech	0.56	Process Innovation	0.92
	Finance and Strategy	0.95	Gazelle	0.85	High Growth	1.00
	Economic Complexity	0.92	Export	1.00	Internationalization	1.00
	Depth of Capital Market	1.00	Informal Investment	0.92	Risk Capital	1.00
					ASP average	86.5
	Institutional average	0.93	Individual average	0.76	GEI	80.9

Source: Global Entrepreneurship Index Data (2017).

Table 6

**UK's GEI Data, 2011–2015 Average**

Subindices	Institutional Variables		Individual Variables		Pillars	
Entrepreneurial Attitudes	Freedom and Property	0.98	Opportunity Recognition	0.57	Opportunity Perception	0.77
	Education	0.74	Skill Perception	0.53	Start-Up Skills	0.58
	Business Risk	1.00	Risk Perception	0.53	Risk Acceptance	0.77
	Connectivity	0.81	Know Entrepreneurs	0.47	Networking	0.52
	Corruption	0.87	Career Status	0.57	Cultural Support	0.82
				ATT average	67.2	
Entrepreneurial Abilities	Tax and Government	0.93	Opportunity Motivation	0.79	Opportunity Start-Up	0.88
	Tech Absorption	0.82	Technology Level	0.91	Technology Absorption	0.88
	Labor Market	0.76	Educational Level	0.85	Human Capital	0.76
	Competitiveness	0.87	Competitors	0.92	Competition	0.94
				ABT average	81.0	
Entrepreneurial Aspirations	Technology Transfer	0.86	New Product	0.62	Product Innovation	0.66
	Science	0.79	New Tech	0.56	Process Innovation	0.68
	Finance and Strategy	0.82	Gazelle	0.66	High Growth	0.65
	Economic Complexity	0.91	Export	0.69	Internationalization	0.65
	Depth of Capital Market	0.99	Informal Investment	0.63	Risk Capital	0.56
					ASP average	63.3
	Institutional average	0.87	Individual average	0.66	GEI	70.5

Source: Global Entrepreneurship Index Data (2017).

According to Bittorf (2013), an entrepreneurial culture and entrepreneurship are also fostered in a country's education system. In the German education system, less idealistic educational concerns like knowledge transfer and usefulness were originally not important, leading to the absence of economics in secondary school curricula. Nevertheless, Fuerlinger et al. (2015) stress that much has been improved in Germany in terms of entrepreneurial education. However, an underdevelopment of education on economic and entrepreneurship topics is still seen as an obstacle in Germany's entrepreneurial ecosystem (Röhl 2016).

## SUMMARY AND CONCLUSION

This paper provides a detailed description of the GEI methodology as an approach to measure the entrepreneurial ecosystem of a country in a qualitative way. The GEI approach has been applied in order to analyze Germany's entrepreneurial ecosystem in comparison to the US and the UK. The outcome of the analysis reveals that Germany already has a healthy entrepreneurial ecosystem. However, it performs below its GDP-predicted trend line, indicating potential for more dynamic and innovative entrepreneurship. In comparison, the US and the UK both perform above their GDP-predicted trend lines. The US holds a large lead in the GEI ranking by showing an overall strong and balanced entrepreneurial ecosystem. In order to compete with leading entrepreneurial ecosystems, Germany mainly faces cultural issues and issues related to entrepreneurship education.

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In the second quarter of 2019, the DICE Database received a number of new entries, consisting partly of new topics and partly of updates. The list below features some of these new entries

- The Global Entrepreneurship Index (GEI), 2018
- Percentage of ICT Personnel on Total Employment
- Percentage of ICT Sector in GDP



## Forthcoming Conferences

### CESifo Area Conference on the Economics of Education 2019

**30–31 August 2019, Munich, Germany**

All CESifo research network members are invited to submit papers to the 2019 CESifo Area Conference on the Economics of Education. Organised by Eric A. Hanushek (Stanford University, Area Director) and Ludger Woessmann (Ifo Institute), the conference brings together network members to discuss their recent research and to encourage broader interactions, particularly on both sides of the Atlantic. All CESifo research network members are invited to submit their papers, which may deal with any topic within the broad domain of the Economics of Education. The keynote lecture will be delivered by Magne Mogstad (University of Chicago).

Scientific organizers:

Eric A. Hanushek and Ludger Woessmann

### CESifo Area Conference on Energy and Climate Economics 2019

**18–19 October 2019, Munich, Germany**

All CESifo research network members are invited to submit papers to the 2019 CESifo Area Conference on Energy and Climate Economics. The purpose of the conference is to bring together the members of the CESifo Research Network to present and discuss their ongoing research, and to stimulate interaction and co-operation between them. Submissions may deal with any topic within the field of Energy and Climate Economics. The keynote lecture will be delivered by Taran Faehn (Statistics Norway).

Scientific organizer: Michael Olaf Hoel

### CESifo Area Conference on Behavioural Economics 2019

**25–26 October 2019, Munich, Germany**

This will be the ninth annual conference of the CESifo Area on Behavioural Economics and will be organized jointly, once again, with the Collaborative Research Center “Rationality and Competition” ([www.rationality-and-competition.de](http://www.rationality-and-competition.de)). The purpose of the conference is to bring together CESifo and CRC members to present and discuss their ongoing research, and to stimulate interaction and co-operation between them. All CESifo research network members and all CRC members are invited to submit their papers, which may deal with any topic within the broad domain of behavioural and experimental economics and applications to other fields. The keynote lectures will be delivered by George Loewenstein (Carnegie Mellon) and Andrei Shleifer (Harvard).

Scientific organizers: Ernst Fehr and Klaus Schmid

## New Books on Institutions

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Katharina Pistor

Princeton University Press, 2019

### **Renovating Democracy – Governing in the Age of Globalization and Digital Capitalism**

Nathan Gardels and Nicolas Berggruen

University of California Press, 2019



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