BRIEFING

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Competitiveness in the current 2021-2027 MFF

Laudable intentions but a small budget oversold and funding subject to incumbent bias

KEY FINDINGS

Supporting competitiveness is rightly a major theme for the next multiannual financial framework (MFF). This analysis of existing policy instruments in the 2021-2027 MFF points to two broad issues:

Firstly, leveraging private invetsment can only create the illusion of a great impact with limited budgetary resources. When the EU contribution for projects is reduced to a few percentage points, it becomes difficult to have a large impact on project selection. Additionality and EU value-added become thus difficult to ascertain. This applies in particular to InvestEU (and its predecessor, the European Fund for Strategic Investments (EFSI)). The claims that they have mobilised hundreds of billions of additional investment should be toned down.

Secondly, there should be increased focus on disruptive as opposed to incremental innovation: Involving industry in the determination of the research programme seems attractive at first sight because industry should know better what research is needed to make them more competitive But this creates a status quo bias. European industry is strong in middle-technologies (machines, automotive) but virtually absent in software, ICT and AI and only a small proportion of competitiveness instruments aim at these sectors. Moreover, the direction of spending of many instruments (Pillar II of Horizon, including in particular the Joint Undertakings), the Chips Act, Important Projects of Common European Interest (IPCEI) seem to be determined to a large extent by industrial associations and national champions. These incumbents are of course interested in incremental innovation, but unlikely to favour disruptive innovation outside their existing business models.

Budgetary Support Unit

Author: Daniel Gros

Directorate-General for Budgetary Affairs

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Introduction

The EU budget and competitiveness: Where does the Competitiveness Compass point?

The growth performance of the EU has been disappointing over the last years, both in absolute terms aind relative to the US. In 2024 the 'Draghi report on the 'Future of European Competitiveness' provided an in-depth analysis of the problems and argued for a totally new approach to funding and policy design for comptetitiveness. In early 2025 the Commision published what it called "A new plan for Europe's sustainable prosperity and competiveness".

In presenting its Competitiveness Compass the European Commission emphasised three **necessities** for the EU to boost its competitiveness:

1. Closing the innovation gap
2. Decarbonising our economy
3. Reducing dependencies

This represents a much wider concept of competitiveness than that used by economists who usually equate competitiveness with productivity, as this is the key measure that determines growth in the medium to long term. The Draghi Report also starts with an analysis of productivity and this emphasis is taken up again in the proposal for a Competitiveness Fund. The implicit assumption in the Competitiveness Fund is that it is innovation that drives growth. This briefing will concentrate on this aspect and will examine whether EU instruments can support innovation-driven growth.

A key ambiguity relates to the concept of innovation – the first 'necessity' the Commission pinpoints. The Draghi Report documents that, in traditional industries, Europe has remained competitive in the sense that productivity in these industries has advanced as much as in the US. The key difference between the EU and the US is that the fast-growing information and telecommunications (ICT) industries are much weaker in Europe. This has been called the 'middle technology trap'. The real problem for Europe is its weakness in disruptive innovation, i.e. innovation in the newer fast-growing technology areas such as ICT and AI, whereas EU companies remain leaders in traditional, 'middle-tech' sectors like automotive. This creates a fundamental problem for the governance of EU innovation policy. To the extent that this policy is influenced by industry, it is likely to end up financing (incremental) innovations in existing sectors (the small ICT sectors in Europe have little political weight). This problem will be apparent in a number of the policy instruments discussed below.

The "necessity" in relation to decarbonisation refers to the idea that a decarbonised economy represents the way economies have to work in the future and that the ability to produce goods and services with decarbonised technologies makes the EU more competitive.

The last "necessity" identified by the Commission is related to another often used aspect of competitiveness, namely international trade. While the EU lags behind the US in terms of productivity, one could argue that it leads when measured by its trade performance because the EU runs a large trade and current account surplus whereas the US runs a very large deficit (the EU's surplus stands at about 2% of GDP, similar in size to the deficit of the US, about 3% of GDP). However, the Commission focuses on a more specific aspect namely "reducing dependencies". The concern here is to reduce the degree to which the EU depends on imports of some critical technologies and materials in particular with a view to potential over-reliance on geopolitically unreliable actors. This aspect of competitiveness is very sector-specific and more difficult to translate into general policy prescription.

The Competitiveness Compass and Fund can be considered as an example of industrial policy, understood as proactive government-led encouragement and development of specific strategic industries for the growth of all or part of the economy, especially in the absence of sufficient private sector investments.

Other examples of EU industrial policy would be the Critical Raw Materials Act, the Net Zero Industry Act, the Chips Act and the Important Projects of Common European Interest (IPCEIs). Not all of them can be discussed here, but they deal with specific aspects of competitiveness, mainly aiming at reducing external dependencies.

What are EU policy financing tools?

As this contribution deals with the question how the MFF can finance innovation-driven growth, one needs to distinguish between programmes and initiatives that involve financing from the EU budget and those that do not.

Policy instruments that do not have (direct) budgetary implications.

- The Strategic Technologies Platform (STEP), introduced at the time of the mid-term revision of the 2021-2027 MFF, is not a financing tool, but mainly an umbrella for existing programmes whose priorities are aligned with STEP objectives. *A priori,* one should not expect a significant impact from a mere reclassification of existing budget lines. However, STEP also contains some particular elements that are intended to have a concrete impact. This comes mainly from the platform element. The so-called 'Sovereignty Seal' should help to find financing for projects that under different programmes had been evaluated as being excellent but could not be financed because of limited budgets. For example, projects with this Sovereignty Seal become immediately eligible for Cohesion or Regional Fund support. In this sense, STEP allows for a redirection of cohesion funding from the standard 'hard' infrastructure towards other areas that are aligned with STEP objectives (digital or biotech, for example). It is difficult to judge to what extent this flexibility has been used.
- The Chips Act is (mostly) not an EU financing tool, but rather an exemption from state aid rules to allow under its Pillar 2 national subsidies for Chips production (an industrial policy tool). The Chips Act also contains about EUR 3.3 billion for Research & Development (R&D) from the EU budget. But most of this was not new money, but diverted from existing programmes like Horizon Europe (EUR 1.425 billion) and Digital Europe (EUR 1.45 billion), plus EUR 425 million for the Chips Fund via InvestEU and the European Innovation Council (EIC). Most of the state aid approved came from the three largest Member States (France, Germany and Italy), all which supported only projects led by domestic firms. All these projects are managed exclusively by national authorities with minimal EU involvement once the state aid has been authorised.
- Important Projects of Common European Interest (IPCEI) are also not a financing instrument, rather an exemption from state aid rules to foster cooperation and innovation in certain industries. The funding for IPCEIs thus comes from national treasuries, not the EU budget. However, the Commission proposes that, in the future, it should be possible to make contributions to IPCEIs from the EU budget. The funding rules under the IPCEIs differ from those for the Chips Act. IPCEIs are supposed to address a market failure, with projects focusing on Research and Development, rather than the construction of big factories. Moreover, unlike the

Chips Act, each IPCEI has participants from a number of Member States, with four being the minimum. IPCEIs are managed by Member States themselves, typically with one being in the lead to coordinate joint meetings. But, in contrast to the Chips Act, there must be effective cross-border cooperation and each recipient enterprise must prove effective cross-border collaboration (e.g. scientists working in laboratories abroad). Match-making events provide interested parties with the opportunity to get to know others in the same area (e.g. micro-electronics).

Funding instruments

There are a number of different policy instruments with resources from the EU budget. The biggest one in term of budgetary outlays is Horizon Europe (EUR 95 billion) whereas InvestEU is the largest in terms of mobilised resources (EUR 370 billion, but based on a much smaller budgetary commitment in the form of a guarantee).

- InvestEU is a real financing tool even if it does not involve direct budgetary expenditure, but only guarantees. In a first step the EU provides a guarantee to the EIB with only about 1/4th of the amount guaranteed reserved in the EU budget. In the second step, the EIB finds private sector partners that, based on the EU guarantee, agree to fund up to 3/4th of the project. The total multiplier could thus be 16 (4*4).
- Horizon Europe is the main tool for direct financing of innovation-based growth. It has three pillars that focus on different aspects: Pillar I on 'Excellent Science'(European Research Council), Pillar II more on competitiveness and Pillar III on innovation with the European Innovation Council.
- Part of Pillar II of Horizon Europe are the Joint Undertakings (JU), a sort of public-private partnership. JUs leverage private funding 1:1 as the recipient enterprises are supposed to contribute (mostly in kind) one half of the cost of each project.

Smaller programmes

- The Connecting Europe Facility (CEF) has an overall allocation of over EUR 33 billion (about EUR 4 billion annually). Most of this goes towards traditional infrastructure projects in transport and energy (railways and electric power interconnectors in the Baltics) and finances similar projects to those financed by the regional funds. These are typically less directly relevant for competitiveness. It will thus not be discussed further here. About EUR 2 billion is allocated to telecomms/digital projects, mainly for secure quantum communications and undersea cables.
- The Digital Europe Programme, with an annual budget of about EUR 1 billion (EUR 7 billion over the entire 2021-2027 Multiannual Financial Framework (MFF)). The purpose is to bridge the gap between digital research (funded by Horizon Europe) and the large-scale deployment of digital technologies. It finances projects in Supercomputing, AI and Cybersecurity (including the European Cybersecurity Competence Centre (ECCC)). The need to strengthen European presence in this area is clear, but the scale of the financing is negligible compared to the hundreds of billions spent annually by the US hyperscalers. This fund finances a mixed bag of research to the ill defined activities of the European Cybersecurity Competence Centre (ECCC), based in Bucharest, that manages grants, draws up a Cybersecurity Work Program and coordinates national Cyber-Hubs.

- The European Defence Fund (EDF) has an annual budget EUR 1.1 (total EUR 7.9 billion) aims to enhance the competitiveness and innovation capacity of the EU's defence industry by funding collaborative projects across Member States. It is thus similar to the Pillar II of Horizon Europe, but in the domain of military applications that are generally not covered by Horizon programmes. Given the low level of investment in defence R&D in Europe, this fund could provide a significant contribution to improve the competitiveness of the European defence industry.

How to measure the effectiveness of individual instruments?

This evaluation will focus on the two largest financing instruments (InvestEU and Horizon Europe) and two of the other instruments that do not involve (additional) resources from the EU budget.

Any evaluation of funding instruments should be based on both the quantity and the quality of the spending. The latter is naturally more difficult to measure. This is one of the reasons why official evaluations tend to put the focus on quantity. An additional problem arises in the case of instruments that are designed to leverage private investment because this renders it more difficult to measure both quantity and quality.

Quantitative aspect: how much investment is being leveraged?

Commission documents increasingly use the vague terms like 'mobilised' or 'catalysed' to portray the quantitative impact of funding instruments. The term is vague enough to encompass a wide range of meanings.

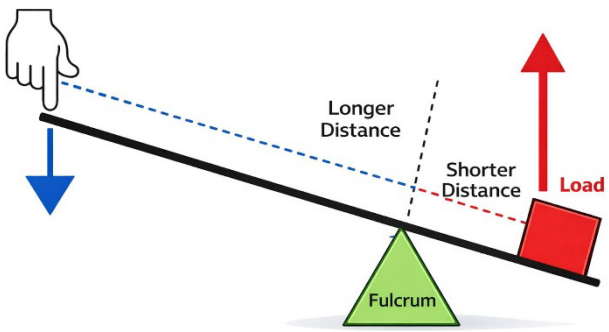
For example, the Commission asserts that the "Chips Act has already catalysed more than EUR 80 billion in investments in chip manufacturing capacity". This figure refers to plans for investment for several years and contains projects that have since been put on hold (like the one in Novara Italy). Very little has been spent so far. Given the high rates of subsidies of most of the projects approved, about half of the total sum consists of promises of national state aid. These subsidies come from Member States and are thus not part of the MFF or the EU budget.

In the case of InvestEU, the key selling point has also been the 'multiplier', i.e. the amount of investment mobilised compared to the cost to the EU budget.

With the claimed multiplier of 15, InvestEU provided on average an implicit subsidy of about 6-7%. It is clear that such a small subsidy can only crowd in investment projects that are already close to being profitable under normal market conditions. A subsidy of 6-7% will not make radically new investment projects attractive enough to be undertaken. This consideration applies to all financial instruments that are supposed to multiply the effect of a given budgetary appropriation. The higher the multiplier, the higher the volume of investment that is affected, but most probably the investments that are 'mobilised' by the subsidy are only slightly different from what would have been undertaken anyway.

To use an analogy from physics: InvestEU is like the opposite of a lever used to apply a strong force on a small object. The small object (EU budget guarantee) can exercise only a very small force at the long end of the lever. Figure 1 illustrates this standard effect.

Figure 1



A small force, the finger at the long end of the lever, can lift a heavy force (red block at the short end). The lever thus magnifies the force exercised by the finger.

But one can also look at this standard picture the opposite way: even a strong force a the short end can only exercise a weak force at the long end. The simple analogy is that the load represents the guarantees in the EU budget and the hand the force with which investment is affected. The blue arrow is much smaller than the red one.

The general conclusion is that a higher leverage does not mean necessarily a stronger impact. A high leverage financial instrument might affect very large volumes of investment but can shift their destination only very little. This means that it also becomes more difficult to measure the qualitative aspects discussed below.

Another concern about the effectiveness of InvestEU is that the claims of very large financing volumes are difficult to reconcile with the stagnation of the balance of the EIB. The EIB is the implementing partner for 75 per cent of InvestEU. By the end of 2024, InvestEU was supposed to have mobilised EUR 280 billion. But one finds few traces of this large number in the balance sheet of the EIB as of 2024. Its overall loan book has fallen by about EUR 20 billion since 2021 (from EUR 490 billion in 2021 to EUR 477 billion. Overall assets have also slightly fallen since 2021 (by EUR 9 billion, from EUR 565 billion in 2021 to EUR 556 in 2024).

The increase in the activities of the European Investment Fund (EIF), which engages in more risky activities, has also been small. As of end-2021, the EIF had private equity investments of EUR 1.5 billion, which had increased to EUR 1.9 by 2024. There is thus little sign that the risky activities inside the EIB group have increased by an amount even remotely similar to the claimed sum for additional investment mobilised by InvestEU.

Most InvestEU projects are multiannual, with disbursements only coming gradually. Commitments have thus increased more than the total funding outstanding. But the present portfolio also contains the commitments made under the predecessor of InvestEU, the Juncker plan (European Fund for Strategic Investments (EFSI) that started in 2014), which was initially supposed to mobilise investment of over EUR 315 billion. In 2022 the Commission claimed that EFSI was expected to have 'triggered' in total investments of EUR 524.3 billion.

Total assets of the EIB in 2024 were still below the level of EUR 570 billion reached in 2015. In the meantime, the total claimed financing mobilised for EFSI and InvestEU amount to over EUR 600 billion (EUR 315bn for EFSI (initially) and EUR 280bn for InvestEU up to 2024). Even if one applies a multiplier of 4:1 for EIB lending crowding in private capital, one would have expected the balance sheet to increase by over EUR 100 billion. This has not happened.

Qualitative aspects: Additionality and market failure

Public subsidies to private investment projects are justified only if there is a market failure. InvestEU is thus supposed to be limited to financing projects that would otherwise not have taken place and in areas/sectors where there are market failures. However, this additionality is only asserted and

difficult to prove. As noted in an EP study, the European Court of Auditors had already recommended that the Commission develop a methodology for an ex post analysis of additionality. This recommendation was only partially accepted with the following statement:

> *The Commission will consider this for future programmes through qualitative methods such as surveys and interviews, but does not support full-scale causal studies due to cost and complexity.*

The latter part of this statement is difficult to accept. Rigorous scientific studies of causal impact cost in the hundreds of thousands of euros. This is negligible compared to the billions claimed for InvestEU. It would be extremely important for the accountability of the EU before the European taxpayer to know better whether this important programme did in fact lead to hundreds of billions in investment or whether EU financial support just benefited projects that would have been undertaken anyway. The stagnant balance sheet of the EIB (and the minute increase in that of the EIF) increases the need for robust evidence on additionality.

A similar remark applies to the legal requirement that EU funding in general should support only projects where there is a market failure. (Excerpt from Article 8 of the InvestEU Regulation "The InvestEU Fund shall operate through the following four policy windows that shall address market failures or sub-optimal investment situations within their specific scope..."). In many of the projects financed by InvestEU, notably large infrastructure or energy investments, it is not clear what the market failure is. The interim evaluation on InvestEU asserts that its programmes addressed market failure but does not spell out what these market failures were. The only passage in this document of over 200 pages that comes close to defining the market failures is on page 146: "market failures such as uncertainty, financial constraints and lack of appropriability". The first two elements do not constitute market failures as definied normally in the economics literature. Uncertainty is a fact of life, not a market failure. The only element that undoubtedly constitutes a market failure is that firms undertaking a research project cannot appropriate the full social benefits from their activity and will thus invest too little in research.

The predecessor of InvestEU, the Juncker plan (European Fund for Strategic Investments, EFSI), had been motivated by a perceived lack of investment and persistent risk premia in parts of the euro area arguing that they represented a market failure due to the malfunctioning of financial markets. These risk premia have by now disappeared. The 2024 evaluation report seems to conflate market failure with 'sub-optimal' investment. But these two concepts are not the same. Moreover, funding in the EU budget for research was cut to provide the room for the EFSI.

Research and development are of course the areas in which there exists a clear market failure since the return on investment in research often cannot be fully appropriated by the firm undertaking it. But the share of InvestEU financing that goes to R&D projects is small. Support to R&D requires grants, not loans.

An analysis of the usefulness and effectiveness of different instruments, including lessons learned

Chips Act: Ambition versus reality

One of the main goals of the Chips Act was to 'enhance technological leadership and manufacturing scale' with the target being to double the EU's global market share in semiconductors to 20% by 2030. As the European Court of Auditors noted, this target is unlikely to be achieved.

A second aim of the Chips Act was to 'ensure supply chain resilience and strategic autonomy', which was driven by the perception of severe supply chain disruptions after the COVID-19 shock. As argued in Gros 2024, European car producers misjudged in early 2020 the length of the fall in demand and stopped long-term contracts for chips. The chips producers then retooled and were not able to deliver the chips European car producers needed when demand for cars recovered in 2021. However, this episode was interpreted as showing the need for more production in Europe. Chips production in Europe is mainly concentrated in mature nodes as this is what is demanded by the EU automotive sector.

The main effect of the Chips Act has thus been an indirect subsidy to the EU automotive industry. All of the large projects that are implemented involve the production of chips mainly used in the automotive industry. Countries have generally supported their national champions (Germany Infineon, France and Italy STMicroelectronics, Austria Osram). None of these projects are first of a kind globally, only first of a kind in Europe. There is also no noticeable cross-border element in any of these projects.

As an aside, one should notice that there is one production site for advanced node chips – Intel's plant in Ireland that produces logic chips with 3 nm nodes (the projects financed by the Chips Act are usually in the range 18–22 nm or above). This plant has not needed any subsidies and its existence is not mentioned in most discussions around chips. Unfortunately the only existing advanced nodes fab in the EU is in a small Member State and none of the large ones is ready to provide financing for a 'foreign' production site. This shows that, in the area of the Chips Act, national interests trump European ones.

As mentioned above, the Chips Act also contains EUR 3.3 billion in funding for R&D and pilot lines. These funds (redirected from other parts of the budget) are managed by the Chips Joint Undertaking in which industry (the incumbents) are responsible for drafting the work programme, the members of the associations that draft the work programmes are also the ones that are winning the project and they are also the ones that are expected to provide the private contribution (mostly in kind) to the JU that should match the EU funding. In a JU, industry is supposed to contribute 1:1 to the EU contribution. This redirection of funds from Horizon Europe would thus in principle double the amount available for research, but at the cost of a governance structure that redirects the research towards industry priorities.

This experience suggests two lessons for this type of policy:

First, the scale of financing must be commensurate to the ambition. To double the market share in an expanding global market in which many other countries provide generous support would require much higher sums. Moreover, the very high subsidy rates offered (40–50 %) suggest that production costs in Europe are much higher than elsewhere. This puts in doubt the aim of doubling the share of EU producers in the global market.

Second, the process has been captured by industry. The European Autombile Manufacturers' Association has been most vocal in supporting the Chips Act and all projects that are actually implemented concern chips for the automotive sector.

A potential Chips Act II should be radically different. Instead of providing large subsidies for specific factories that produce one kind of chips, funding should go towards the part of the chips supply chain where Europe does have a strong comparative advantage, namely the machines necessary to produce the most advanced chips. European dominance of this sector is built on competences in mirrors, lasers and other specialised machinery. These are the sectors that should be strengthened by funding R&D in this area, training skilled workers, etc.

STEP: What can be achieved by repackaging?

It is difficult to see why providing an umbrella to 11 existing – and very diverse - programmes via STEP should have a large impact. The first annual report says only that EUR 10 billion of EU funds were 'aligned' with STEP.

The official list of the 11 programmes brought under the STEP umbrella is:

- 5 funding programmes managed by the Commission for the internal market (Horizon Europe, the Innovation Fund, the European Defence Fund, Digital Europe, and EU4Health);
- 5 funds supported through national envelopes funded by the EU (e.g., the European Regional Development Fund (ERDF), the Cohesion Fund, the Just Transition Fund (JTF), the European Social Fund Plus (ESF+), and the Recovery and Resilience Facility (RRF));
- 1 instrument (InvestEU) implemented with the Commission's partners (e.g., the European Investment Bank (EIB)).

The funds/instruments brought under the STEP umbrella are of very different sizes and nature. Horizon Europe is by far the largest among the programmes managed by the Commission, with an annual budget of about EUR 13 billion, much larger than the others. The ERDF and the European Social Fund are by far the largest among the funding programmes under national envelopes, with annual budgets of over EUR 32 and EUR 14 billion, respectively, again much larger than the others.

The claim that STEP 'mobilised' new investment implies logically that the money previously spent under the existing programmes, e.g. ERDF, Horizon Europe or InvestEU, was misspent. Ultimately, STEP's contribution is one of political alignment rather than budgetary additionality.

The potentially largest impact of STEP could come from its portal for projects. The 'sovereignty seal' makes projecst immediately eligible for financing under other programmes. This could be particularly important for the regional funds since many Member States face difficulties absorbing their allocation under the ERDF as they have given priority to RRF funds, that have a hard deadline. *A priori*, one would thus have expected Member States to use this occasion to incorporate in their ERDF plans the advanced technology projects that have received the STEP seal. The Commission evaluation shows that by 2024 most (76 %) of the EUR 13.5 billion in funding redirected under the 5 directl management programmes went to the Innovation Fund. As for the funds under shared management, EUR 10.5 billion of the total EUR 13.7 billion that was reprogrammed went to the ERDF. In this sense STEP has had a noticeable impact. Given the size of the ERDF, more reprogramming of regional spending towards the type of sectors and technologies covered by STEP should thus be possible, with a positive impact on competitiveness.

Horizon Europe: What impact on competitiveness?

Horizon Europe has by far the largest budget allocation among the programmes supporting competitiveness. Any evaluation of Horizon Europe must take into account the different aims of its different components. Pillar I on excellent science is generally regarded as a success. Excellence in basic research might contribute indirectly to competitiveness. But the other two Pillars are more directly relevant for this analysis - Pillar II on competitiveness and societal challenges and Pillar III on innovation. Pillar II is the largest of the three, absorbing about 2/3 of the Horizon Europe budget. Gros (2025) analyses to what extent it helps to close the competitiveness gap, the main finding being that Pillar II does not seem to work. The enterprises that benefit from project funding do not become more competitive in the sense that, after a short boost from the project, their sales (and

employment) do not grow faster than other enterprises in a carefully selected control group. The only programmes that have a long-term positive impact on enterprise performance are those that aim at single beneficiaries, like the EIC and its predecessor, the SME programme. The collaborative projects are too unwieldy, often consisting of consortia with 20 or more participants, and do not provide incentives for participants to engage in path-breaking innovation as the benefits would have to be shared with the entire consortium. Unfortunately, the single recipient programmes are rather small. Fuest and Gros (2025) provide more detailed evidence, emphasising that one needs to look at the performance of the recipient enterprises after the projects end. Since most projects last about 3-4 years, it should not be surprising that the recipients experience a boost during this period. The key issue is what happens once programme funding stops. On this count, the evidence is not encouraging.

Another weakness of the way Pillar II is implemented is that the work programme is determined top-down through large committees dominated by Member States' representatives, who have limited scientific qualifications and tend to rely on suggestions from national champions or industry associations. This is also the reason why a small number of large established enterprises win hundreds of projects without showing any growth acceleration.

The evidence on Pillar III that supports innovation is also mixed. The core of Pillar III is the European Innovation Council, which has an annual budget of around EUR 1.3 billion, or about 10% of Horizon Europe overall. A 2024 report by the European Policy Analysis Group (Fuest, Cl., D. Gros, D. P.-L. Mengel, G. Presidente and J. Tirole 2024) finds that the working mechanisms of the European Innovation Council lack the independence and guidance by highly qualified project managers that characterise the famous US Defense Advanced Research Projects Agency (DARPA).

A special case under Pillar II: Joint Undertakings

Joint Undertakings are sometimes characterised as a 'Private Public Partnership' (PPP). The JUs do not fit the standard definition of a PPP under which the private sector provides a public service against performance-linked remuneration. The JU financing from the budget consists of straightforward research grants, as is the case throughout Horizon. There is no 'service' that the JU performs, other than selecting research projects.

The main difference with the rest of Horizon Europe is that the EU contribution for projects under JUs is limited to 50% of (eligible) costs. The reason given is that, for industrial research, at least part of the benefits can be appropriated by the firms that participate in the project (for basic research projects under most Horizon programmes, the EU contribution is much higher, often 100%). While the principle of JUs is clear, the difficulties arise in determining the contribution of the private sector. In practice, the private sector part usually comes as a 'contribution in kind'. But the value of these private contributions (making testing equipment available, the time of researchers, etc.) is difficult to measure and it seems that there are no mechanisms in place to independently verify the value of these in-kind contributions as noted by the European Court of Auditors.

Overall, Horizon Europe seems to be the most impactful part of the MFF with largely positive effects on competitiveness, but it still contains large pockets of inefficiency.

Remedies for the next MFF

Two main reform recommendations emerge from this short review of EU industrial policy funding instruments in the 2021-2027 MFF.

1. Higher leverage does not necessarily mean bigger impact. The use of financing models that rely on crowding in large amounts of private finance should be limited. Using small budgetary resources

from the MFF (whether guarantees or grants) to affect very large amounts of other funding creates the illusion of a large impact. But there is no free lunch here. The influence of EU funding on the use of the overall resources thus 'mobilised' diminishes with the multiplier. This is particularly evident for InvestEU where it becomes very difficult to determine the additionality of the investment projects when the EU guarantee amounts to only a few percentage points of the overall project. Moreover, it seems that, by chasing ever larger multipliers, quantity becomes more important than quality. For many InvestEU projects, it is not clear what the externality is that the EU subsidy is supposed to remedy. The claim that InvestEU has 'mobilised' EUR 300 billion is difficult to reconcile with a stagnant balance sheet of the EIB, especially given that the Commission also claims that its predecessor, EFSI, had already mobilised EUR 500 billion.

2. Horizon needs reforms in two of its main three Pillars. Pillar II needs to be radically changed to render it effective for competitiveness. Pillar III could also be improved. Reforming Pillar II should be a priority. The funding dedicated to large collaborative projects has so far been ineffective in nurturing strong, competitive companies. Too much goes to the incumbents (who naturally favour this programme) and too little to innovative SMEs. This part of Pillar II should be reduced relative to instruments that allow for much smaller consortia or single firms to apply. Pillar III seems to be working much better than Pillar II. It is encouraging that, under the Commission proposal for the next MFF, the funding for the EIC would be increased. But more could be done to strengthen its governance and its management of projects following the US 'ARPA' (Advanced Research Projects Agency). The involvement of industry in the determination of the work programme should be reduced to minimise the incumbency bias. This applies in particular to the Joint Undertaking model that should not be extended without strong safeguards against this type of conflict of interest (for example by mandating strong, independent scientific committees).

As regards other instruments (without funding from the MFF), the following recommendations apply:

Outside the MFF, the same caution should apply to the IPCEI model where industry capture is also prevalent. One, admittedly radical, but simple rule to avoid Member States financing their national champions would be that, within any IPCEI, Member States are not allowed to provide state aid to enterprises with their headquarters in that country.

The Chips Act has financed mainly national champions that produce mature nodes chips for the automotive sector. A potential Chips Act II should be radically different. Instead of providing large subsidies for specific greenfield factories that produce one kind of chips, funding should go towards the part of the chips supply chain where Europe does have a strong comparative advantage, namely the machines necessary to produce the most advanced chips. European dominance of this sector is built on competences in mirrors, lasers and other specialised machinery. These are the sectors that should be strengthened by funding R&D in this area, train skilled workers, etc. To the extent that one wants to boost the production of advanced nodes in Europe, one should support improvements in existing fabs.

STEP has the potential to redirect existing funding from the ERDF in traditional hard infrastructure towards more tech-heavy projects. This potential could be enhanced by making it administrative easier for regions/countries to make ammendments to their existing smart specialisation strategies.

Conclusions

A key issue for EU innovation policy is the difference between supporting (incremental) innovation in existing industries or fostering disruptive innovation in new sectors. The incumbents favour naturally the former. Their influence via lobbying through industry associations and as national

champions through Member States is evident in the work programme of Pillar II of Horizon, the ICPEIs and also the Chips Act. A large part of EU instruments for competitiveness thus strengthen those industries in which Europe is already relatively strong. But these are in many cases also industries with low growth potential. A similar observation applies to the vast amount of investment that has been claimed to be mobilised by InvestEU.

If the aim of the next MFF is to support disruptive innovation, great care should be taken to insulate the influence of the incumbents on the work programme and strengthen those instruments that allow also single recipients to pursue disruptive ideas.

Another key issue is the use of leverage by using small amounts of EU funding to 'mobilise' large amounts from the private sector. As the EU contribution gets smaller, it becomes more and more difficult to influence the nature of the projects and it also becomes less likely that these projects are disruptive. The use of leveraged instruments should be limited and the claims of what they can achieve tempered.

The main issue for the next MFF is thus not so much whether one big overarching fund (the proposed Competitiveness Fund) substitutes existing dispersed instruments, but whether the management of EU funding for competitiveness can escape industry capture and whether EU institutions can resist the temptation to use leverage to claim very large impacts.

Administrator responsible: Alexandra POUWELS Editorial assistant: Diana JUNG

Contact: DGBUDG-BSU@europarl.europa.eu