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The innovation potential of the EU Budget 2021-2027¹

This policy brief discusses the innovation potential of the European Multiannual Financial framework 2021-2027. Modernisation is one of the main objectives in European Commission's proposal for the new Multiannual Financial Framework. 'Innovation' is one of the pillars of the modernisation of the EU's budget with a view to supporting productivity growth and addressing societal challenges. This policy brief considers the comparative position of the EU in terms of research and innovation, and identifies bottlenecks for innovation in the EU. It concludes that most of the efforts to take away those bottlenecks must be made by Member States. However, the EU can make a meaningful contribution by identifying structural weaknesses, coordinating research efforts and networks, providing guarantees and funds, and enhancing quality by creating a competitive environment. If implemented well, the Commission's MFF proposals do have that potential.

1. A modernised budget

"A Modern Budget for a Union that Protects, Empowers and Defends". With this title the European Commission presented its proposal for the new Multiannual Financial Framework for 2021-2027.² Modernisation is one of the main objectives in this proposal, and

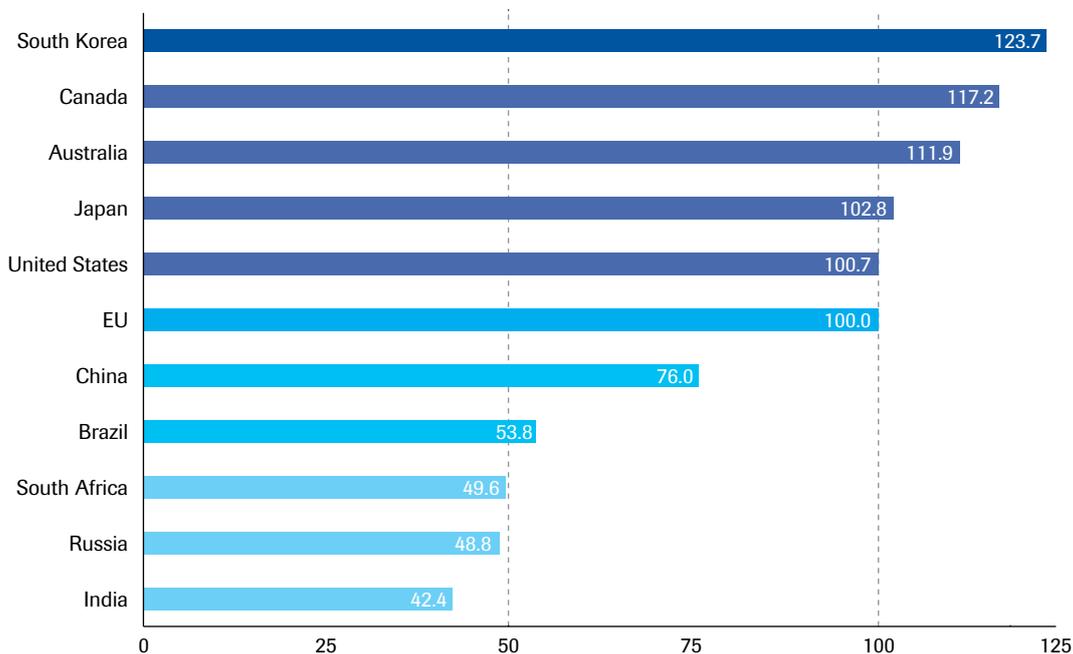
this includes an increased emphasis on innovation. Innovation³ is identified as a crucial driver of productivity and economic growth as well as a key means of addressing societal challenges. For this reason, the proposed budget includes the "most ambitious Research

1 This policy brief was produced as a background paper for the seminar on the Innovation potential of the EU MFF 2021-2027, organised by the Clingendael Institute on 12 December 2018 in The Hague, the Netherlands.

2 European Commission (2018). *A Modern Budget for a Union that Protects, Empowers and Defends. The Multiannual Financial Framework for 2021-2027* [COM/2018/321]. <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=COM%3A2018%3A321%3AFIN>.

3 Although the Commission's MFF proposals do not contain an explicit definition, an implicit definition of innovation as the process through which new ideas bring economic and societal benefits can be deduced from various Commission documents and, more explicitly, from European Political Strategy Centre (2016), *Towards an Innovation Principle Endorsed by Better Regulation*, https://ec.europa.eu/epsc/publications/strategic-notes/towards-innovation-principle-endorsed-better-regulation_en.

Figure 1 Global performance of countries relative to EU's performance in 2017*



* *European Innovation Scoreboard 2018*. https://ec.europa.eu/growth/industry/innovation/facts-figures/scoreboards_en. The scores are based on four groups of indicators: framework conditions, investments, innovation activities and impacts.

and Innovation programme yet” of around €130 billion for 2021-2027.⁴

A stronger focus on innovation also connects with the Commission’s ambition to shift the EU budget towards areas with higher added value.⁵ However, this is not only a matter of more budget, but also of choosing the right budget instruments, of promoting synergies between instruments

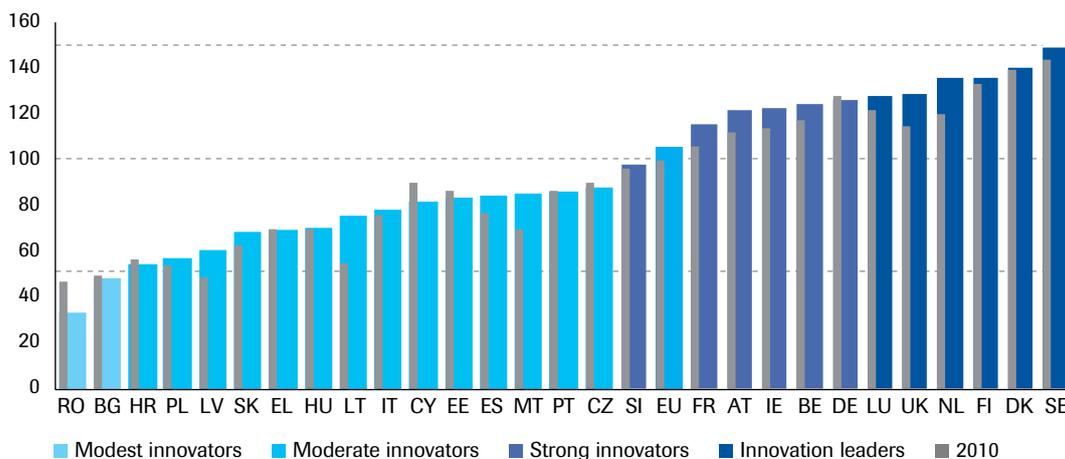
and of creating the right regulatory framework. That requires a deeper analysis of the EU’s weaknesses and strengths – and of the possible ways of strengthening the EU budget’s focus on the broad theme of ‘innovation’ – than is commonly conducted in EU budget discussions. The objective of this paper is to contribute to that analysis.

Before addressing the potential contributions from the MFF in Section 3, Section 2 first puts the importance of the EU budget in perspective by highlighting the different policy areas that define the comparative position of the EU in terms of research and innovation. Section 4 assesses the pros and cons of the Commission’s MFF proposals regarding innovation. Section 5 sketches the political context. The paper ends with the conclusions.

4 European Commission (2018). *EU budget: Commission proposes most ambitious Research and Innovation programme yet*. http://europa.eu/rapid/press-release_IP-18-4041_en.htm.

5 Earlier studies have shown that research and innovation (R&I) offer high added value, whereas more traditional programmes in the EU budget contributed little or, according to some studies, even negative added value (e.g. Schout, A., and Y. van Loon (2017). *European Added Value narrows EU budgetary reform discussions*. The Hague: Clingendael Institute.)

Figure 2 Performance of EU Member States' innovation systems*



* Ibid.

2. Bottlenecks for innovation

The EU is lagging behind global competitors

The increased attention devoted to innovation is related to the EU's lagging position on a global scale. According to the European Innovation Scoreboard (EIS), the EU lags behind South Korea, Canada, Australia, Japan and the United States in terms of innovation (figure 1). It also trails⁶ in terms of business expenditure on research and development (R&D)⁷. While the EU performs well in terms of start-ups, it is less successful in scaling up these firms. It has fewer unicorns than the US⁸ and fewer young leading innovators ("yollies"), and they are also less R&D intensive⁹.

Large differences within the EU

While Europe as a whole is lagging, large differences exist between the EU member states, and between regions within member states. The EIS indicates an "innovation divide" with significant differences in terms of research and innovation performance between the EU member states (figure 2). Moreover, this divide has widened compared to 2010 (represented by the grey bar).

Similar large differences between European countries are also visible in other indicators, such as the Innovation Capability pillar of the WEF Global Competitiveness Index.¹⁰ Here, Germany is the best global performer, whereas Croatia ranks 63rd out of 140 countries.

Public spending on R&D also varies widely between Member States. Germany, for instance, spends almost three times as

6 Veugelers, R. (2017). An innovation deficit behind Europe's overall productivity slowdown? In ECB, *Investment and Growth in Advanced Economies* (pp. 245-251). <https://www.ecb.europa.eu/pub/pdf/other/ecbforumcentralbanking2017.en.pdf>.

7 R&D spending is often used as an indicator for innovation.

8 Correia, A., K. Burkhardt, and R. Martino (2018). Entrepreneurship and structural change. In *Science, Research and Innovation Performance of the EU 2018. Strengthening the foundations for Europe's future* (pp. 238-303). Luxembourg: Publications Office of the European Union.

9 Veugelers, R., and M. Cincera (2010). Europe's Missing Yollies. *Bruegel Policy Brief*, 6, 1-8.

10 For more information on the indicators for this pillar see the World Economic Forum's *Global Competitiveness Report 2018*. <https://www.weforum.org/reports/the-global-competitiveness-report-2018>. It should be noted that the scores (based on "soft, less tangible" indicators) of the three highest-ranking countries (Germany, the US and Switzerland) differ so much from the rest that the WEF considers them statistical outliers.

much as the EU and a thousand times the amount of Hungary. This means that only the three largest member states (Germany, France and, for now, the UK) have budgets that are large enough to maintain public R&D at a level that is sufficient to contribute globally in all relevant research areas. The majority of medium-sized states may be able to contribute globally in one or a few of the areas that matter to their economies. The smaller ones cannot even do that on their own.¹¹

Factors frequently mentioned as important contributors to Europe's lagging innovation position are related to access to finance, education and skills, regulation and diffusion.

Access to finance

Constraints regarding access to finance constitute an important barrier to innovation, especially for small innovative firms.¹²

Innovations, especially disruptive innovations and the development of prototypes, are risky and uncertain, so traditional financial means such as bank loans and corporate debt securities are less applicable.¹³

Also, public support is often unsuitable for disruptive, breakthrough innovative firms and unable to bridge the gap relative to private funding.¹⁴ Private equity, investment funds and venture capital are more appropriate funding partners. However, venture capital is still only a fifth of that in the USA despite having tripled between 2012-2017.¹⁵

11 Soete, L., and J. Stierna (2018). *What matters in research and innovation? Reflections inspired from a "Tour d'Europe"*. <https://ec.europa.eu/research/openvision/index.cfm?pg=home>.

12 Schneider, M., and R. Veugelers (2010). On Young Highly Innovative Companies: why they matter and how (not) to policy support them. *Industry and Corporate Change*, 19, 969-1007.

13 Ferrer, J. N., R. Musmeci, and O. Polli (n.d.). *Ecosystem for innovation: The role of capital market and venture capital*.

14 Independent High-Level Group of Innovators (2018). *Funding – Awareness – Scale – Talent (FAST). Europe is back: Accelerating breakthrough innovation*. Brussels: European Commission.

15 European Political Strategy Centre (2018). *10 Trends Shaping Innovation in the Digital Age*. https://ec.europa.eu/epsc/publications/other-publications/10-trends-shaping-innovation-digital-age_en.

While the funding gap relative to the US in seed and early-stage funding has narrowed, it persisted in later-stage funding.¹⁶

This absence of growth capital hampers innovators wishing to scale up their business and prompts them to look for capital outside the EU. In addition, the bankruptcy laws in (some) EU member states foster risk-aversion among companies because of the high costs of failure.¹⁷

Education and skills

One of the problems is the mismatch between the skills possessed by Europeans and the skills demanded by the market.¹⁸

The difficulty of finding staff with adequate skills is considered by firms as an important structural barrier to investment, and has a negative impact on innovation.¹⁹ Skills currently in high demand are in areas such as science, technology, engineering and mathematics, the so-called STEM skills.²⁰ Other competencies that are increasingly in demand are soft skills which are not related to a specific sector or level but rather to occupational proficiency (e.g. skills related to communication, decision-making and creativity).²¹

16 Ibid.

17 Ibid.

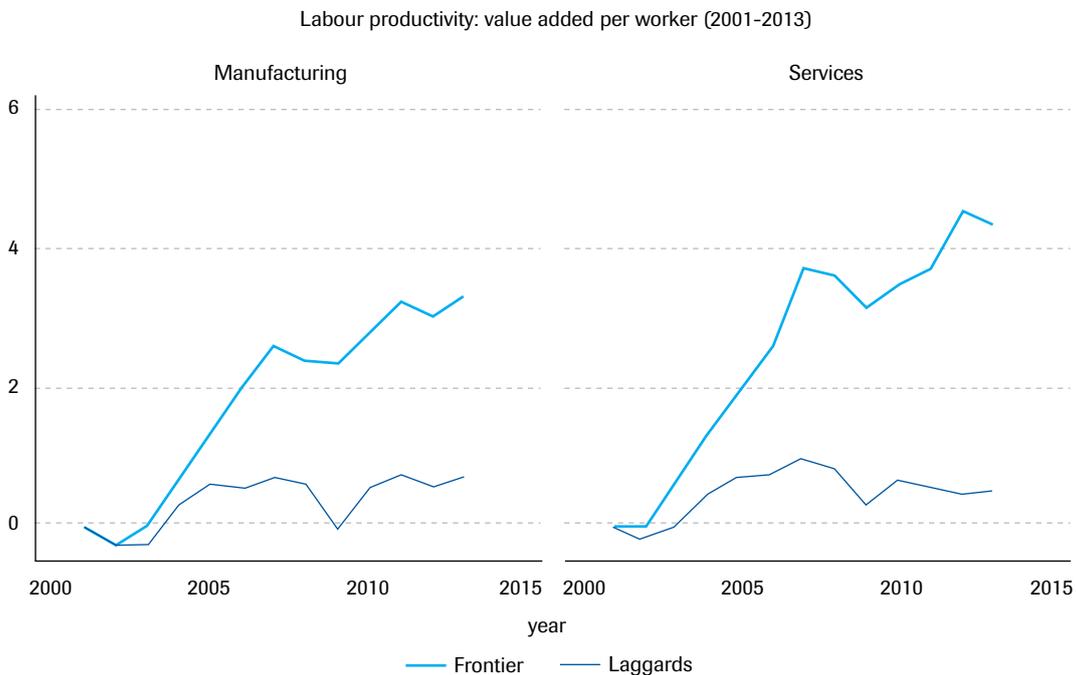
18 Leceta, J. M., A. Renda, T. Könnölä, and F. Simonelli (2017). *Unleashing Innovation and Entrepreneurship in Europe. People, Places and Policies*. Brussels: Centre for European Policy Studies; Bilbao-Osorio, B., and E. Rückert (2018). Innovation, productivity, jobs and inequality. In *Science, Research and Innovation Performance of the EU 2018. Strengthening the foundations for Europe's future* (pp. 22-75). Luxembourg: Publications Office of the European Union.

19 Independent High Level Group on maximising the impact of EU Research & Innovation Programmes (2017). *LAB – FAB – APP – Investing in the European future we want*. Brussels: European Commission; Rubio, D. (2018). Transferable skills to tackle education obsolescence and foster innovation. In *Science, Research and Innovation Performance of the EU 2018. Strengthening the foundations for Europe's future* (pp. 136-137). Luxembourg: Publications Office of the European Union.

20 Leceta et al. (2017).

21 Rubio, D. (2018).

Figure 3 Widening labour productivity gap between global frontier firms and other firms*



* Andrews, D., C. Criscuolo, and P. Gal (2015). *The Global Productivity Slowdown, Technology Divergence and Public Policy: A Firm Level*. <https://www.brookings.edu/wp-content/uploads/2016/08/andrews-et-al.pdf>.

Regulation

The complexity resulting from numerous funding schemes at European level is currently hampering innovation.²² Moreover, policies often tend to favour incumbents to the detriment of newcomers.²³ Additionally, regulations can pose a challenge to (disruptive) innovations because of the lack of clarity in the regulatory framework on issues such as the classification of products.²⁴ These regulatory challenges can slow down innovation. The incompleteness of the Single Market also constitutes a barrier for innovators wishing to start up and

scale up their business.²⁵ Regulation does not have to be a barrier to innovation, however, and can stimulate and steer innovation if well designed.²⁶

Diffusion

The OECD among others argues that what Europe lacks is not innovation but diffusion capacity.²⁷ This is illustrated by the increasing productivity growth gap between highly productive frontier firms and lagging non-frontier firms (see figure 3). This widening gap seems to indicate that lagging firms are no longer able to learn from the frontier firms, which means that innovation no

22 Independent High-Level Group of Innovators (2018).

23 Leceta et al. (2017).

24 For a case-study on regulatory challenges in the field of 3D printing, see section 5 of the in-depth analysis based on the STOA study (2018) *Additive Bio-Manufacturing: 3D printing for medical recovery and human enhancement*. [http://www.europarl.europa.eu/RegData/etudes/IDAN/2018/614571/EPRS_IDA\(2018\)614571_EN.pdf](http://www.europarl.europa.eu/RegData/etudes/IDAN/2018/614571/EPRS_IDA(2018)614571_EN.pdf).

25 Directorate-General for Research & Innovation (2017). *The economic rationale for public R&I funding and its impact*. Luxembourg: Publications Office of the European Union; Leceta et al. (2017).

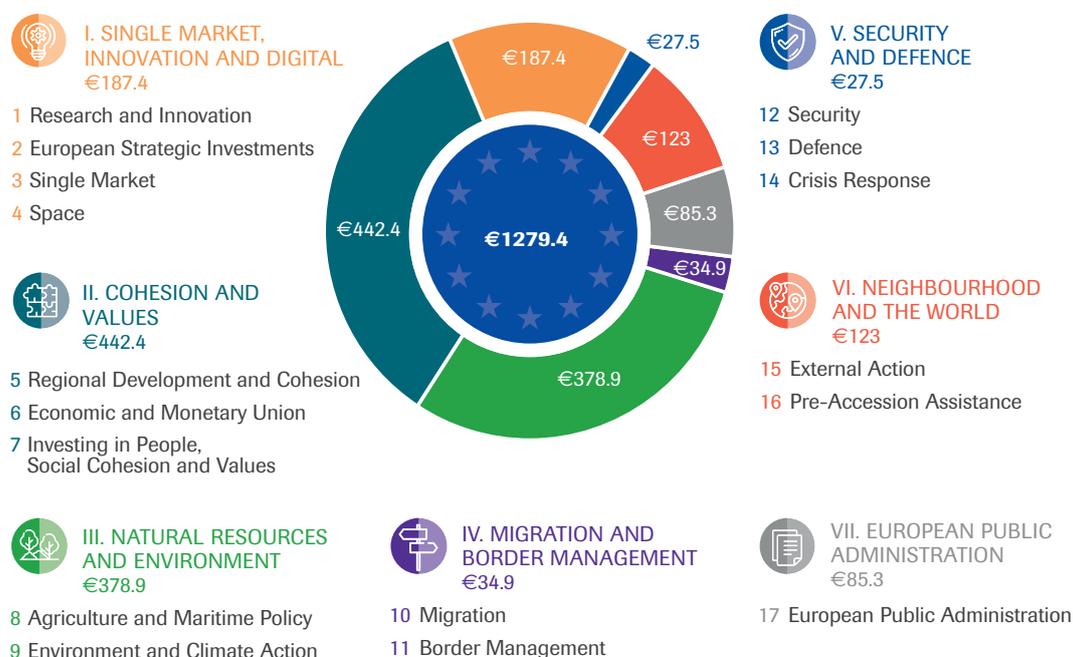
26 Leceta et al. (2017).

27 OECD (2015). *The future of productivity*. <http://www.oecd.org/eco/OECD-2015-The-future-of-productivity-book.pdf>.

Figure 4 The multiannual financial framework 2021-2027 as proposed by the European Commission*

THE NEW MULTIANNUAL FINANCIAL FRAMEWORK 2021 - 2027
A BUDGET FOR A UNION THAT PROTECTS, EMPOWERS AND DEFENDS

In billion euro, current prices



Note: in current prices.

* European Commission (2018). *A modern EU budget for a union that protects, empowers and defends*. https://ec.europa.eu/commission/sites/beta-political/files/budget-proposals-modern-eu-budget-may2018_en.pdf.

longer diffuses.²⁸ This is even exacerbated by the increasing pace of technological advancement, which sets lagging firms back even more quickly.²⁹

National policies

As this short discussion shows, a great deal of the European bottlenecks relate to policies that are national (education, bankruptcy rules, quality of the government sector)³⁰

or responsibilities shared between member states and the EU (internal market legislation).

3. Addressing innovation through the MFF – the expenses

The Commission's MFF proposal

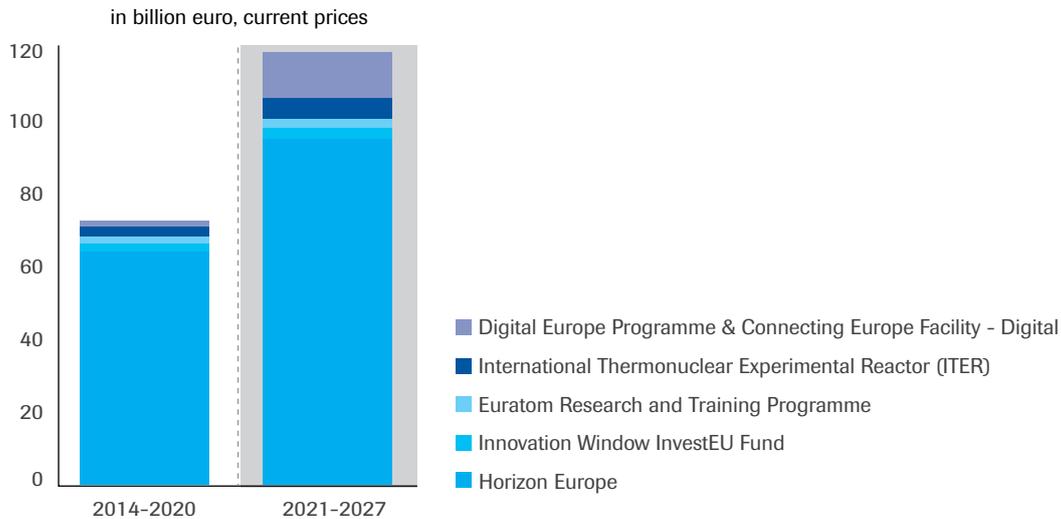
The structure of the Commission's MFF proposal is outlined in the figure above. Most of the direct expenses for innovation are in Chapter I, "Single market, innovation and digital". The total budget (in terms of commitments and at constant 2018 prices)

²⁸ Ibid.

²⁹ European Political Strategy Centre (2018).

³⁰ Schout, A. (2017). *The EU's existential threat: demands for flexibility in an EU based on rules*. In N. Pirozzi (Ed.), *EU60: Re-founding Europe. The responsibility to propose*. Rome: IAI. <http://www.iai.it/en/pubblicazioni/eus-existential-threat>.

Figure 5 A comparison of innovation spending in the new and the current MFF*



* European Commission (2018). Research and Innovation. https://ec.europa.eu/commission/sites/beta-political/files/budget-proposals-research-innovation-may-2018_en.pdf.

amounts to €1,134.6 billion or 1.11% of EU GNI.³¹

The MFF proposal earmarks around €130 billion for innovation, although the precise number depends on which funds are included, and also on which Commission presentation or document is consulted.

The main components are:

- Horizon Europe, the successor to the Horizon 2020 research programme
- The innovation window of InvestEU, the successor to the so-called “Juncker Fund” (EFSI: European Fund for Strategic Investments)
- The Euratom research and training programme
- ITER, the nuclear fusion research facility
- The Digital Europe programme stimulating the diffusion of new (proven) digital technology, and the digital infrastructure investment part of the Connecting Europe Facility

³¹ Numbers presented by the European Commission can be deceiving. The amounts in the picture, for instance, are in current (nominal) prices, i.e. they include increases caused by inflation (estimated at 2% per year). In the constant (2018) prices approach used in the formal MFF proposal, the total budget (in terms of commitments) amounts to €1,134.6 billion or 1.11% of EU GNI. Some EC proposals (such as Horizon Europe), on the other hand, contain current prices instead of constant 2018 ones. Numbers in the legislative proposals may also differ from the accompanying factsheets, or even from corresponding numbers in other proposals – sometimes substantially. This is probably the result of asynchronicities in the Commission’s internal decision-making process, but it makes it difficult to compare numbers. For instance, the innovation part of InvestEU is referred to as €3.5 billion in various presentations and factsheets, whereas it is €11.25 billion in the actual proposal. This paper uses current prices, i.e. including inflation, unless otherwise indicated.

The figure above comparing the current and the proposed new MFF shows that the amount of innovation spending through these funds will increase substantially if the proposals are adopted, mostly as a result of increased spending on Horizon Europe and as a result of the introduction of the Digital Europe programme. The comparison in this picture is nuanced, however, by the fact that there are considerable differences between the amounts used in the factsheet (a total of €115 billion) and the figures in the actual legislative proposals (€126.1 billion, mainly because of a larger innovation envelope in InvestEU).

Table 1 Breakdown of (a priori quantifiable) innovation expenses in the MFF proposal

Programme	Amounts in € billions (current prices)		Focus
Horizon Europe Package			Excellence in R&I
Pillar I – Open Science		25.8	Bottom-up research (ERC)
European Research Council	16.6		
Marie Skłodowska-Curie Actions	6.8		
Research infrastructures	2.4		
Pillar II – Global challenges & Industrial competitiveness		52.7	Missions
Cluster: Health	7.7		
Inclusive and secure society	2.8		
Digital and industry	15.0		
Climate, energy and mobility	15.0		
Food and natural resources	10.0		
Non-nuclear Joint Research Centre	2.2		Policy supporting research
Pillar III – Open innovation		13.5	Bottom-up innovation (EIC)
European Innovation Council	10.5		
EIT	3.0		Innovation landscape
European Research Area (ERA)		2.1	
Sharing excellence	1.7		
Reforming and enhancing R&I system	0.4		
<i>Subtotal Horizon Europe Programme</i>		<i>94.1</i>	
Euratom		2.4	
Total Horizon Europe Package		96.5	
InvestEU (€38bn), innovation part			11.3 Business access to finance
European Defence Fund €13bn), innovation part			4.1 Defence research
Digital Europe			9.2 Digital: technology diffusion
High-performance computing		2.7	
Artificial intelligence		2.5	
Cybersecurity		2.0	
Advanced digital skills		0.7	Skills
Deployment, best use of digital capacity and interoperability		1.3	
Connecting Europe Facility (CEF), digital part			3.0 Digital: infrastructure
ITER			6.1 Nuclear fusion: R&I
<i>Total innovation (quantifiable)</i>			130.2

Table 2 Breakdown of (a priori non-quantifiable) innovation expenses in the MFF proposal

Regional policy	
European Regional Development and Cohesion Fund (€273bn)	65-85% for “smarter” and “greener”
European Social Fund (€101bn)	Education, training, skills

Our own assessment of innovation spending in the MFF proposals also includes the €4.1 billion innovation window of the European Defence Fund. This brings the a priori quantifiable amount spent on innovation to a total of €130.2 billion, as shown in Table 1.

Innovation-related expenses are also “hidden”, however, in a number of other funds, in particular the structural funds³²: the (combined) European Regional Development and Cohesion Fund, which is €273 billion in total, and the European Social Fund, which is €101 billion in total. Because innovation is not earmarked but is simply one of the objectives or criteria of these funds, the exact amounts used to strengthen innovation with these funds is hard to quantify a priori. Much will depend on how the various programmes are shaped during the negotiations, and how these subsidies will be used in practice. Under the current MFF (2014–2020), experience shows that around 10% of the total structural funds were devoted to innovation.³³

4. Assessing innovation in the MFF – the pros and cons

Summarising an extensive literature, three – not mutually exclusive – objectives can be identified which innovation policy could be used to achieve:

- **Missions:** To find solutions for specific societal challenges, such as climate change;
- **Excellence:** Strengthening the best institutions, projects and innovators.
- **Coherence:** Investing in the innovation-inhibiting weaknesses of regions.

Missions

A common view is that innovation is almost impossible to steer. Therefore, its precise goal should not be set by government but can best be left open to allow researchers, companies and other actors to experiment and see where this takes them.³⁴ The alternative, a mission-oriented approach, is advocated in an influential report by Mazzucato.³⁵ She argues that the complexity and magnitude of today’s challenges is such that they can only be addressed with a targeted approach, and by cooperating at the European level. Defining missions would help to reap the benefits of Europe’s diversity and use the variety of centres of excellence and expertise to its advantage. And the EU’s system of multi-level governance is a unique asset that can help to connect policies and challenges, and help member states and regions to experiment within larger EU-wide missions.

32 ESIF: European Structural and Investment Funds. There are five ESI funds, of which the European Regional Development Fund, the Cohesion Fund and the European Social Fund are the most important.

33 Commission of Experts for Research and Innovation (EFI) (2018). *Research, innovation and technological performance in Germany – EFI Report 2018*. https://www.e-fi.de/fileadmin/Gutachten_2018/EFI_Report_2018.pdf.

34 Tullock, G. (1966). *The organisation of inquiry*. Duke University Press.

35 Mazzucato, M. (2018). *Mission-oriented Research and Innovation: A problem-solving approach to fuel innovation-led growth*. Luxembourg: Publications Office of the European Union.

Individual member states like the Netherlands are also adopting a mission-oriented approach in order to align the efforts of their previously selected “top sectors” with societal challenges.³⁶ Important as the national mission approach is, however, Mazzucato stresses that missions are typically related to cross-national challenges (energy transition, health, etc.).

With mission-oriented approaches, care should be taken to ensure that centres of excellence which do not fit into the mission are not neglected to the extent that they lose their leading position entirely – especially since missions or their orientation may change again later.

The European Commission embraced the mission-oriented approach in its MFF proposal: over half of the Horizon Europe Programme (Pillar II, see table above) will be spent on mission-oriented R&I. Although the missions themselves will be fleshed out gradually over the years to come, the table shows that five thematic clusters (such as health; digital and industry; climate, energy and mobility) have already been defined with money allocated to them. Annex I of the Specific Programme of Horizon Europe³⁷ already goes into extensive detail on the nature of these clusters and the included areas of research.

Top-down missions will not determine the distribution of funds allocated under pillars I (Open Science) and pillars III (Open Innovation). They will instead be allocated on a bottom-up basis, which means that projects will be defined by scientists and

innovators themselves. The European Research Council and the (forthcoming) European Innovation Council respectively, which consist of experts from the relevant fields, select the projects to be funded. Although the challenges, such as climate change or cybersecurity, are broadly shared by all, the causes, consequences and political relevance vary between member states. This complicates the design of an innovation policy suitable for the entire EU, and in any case requires flexibility as well as appropriate subsidiarity in the decision-making.

Excellence

Strengthening excellence means that money is focused on already excellent players in order to improve their global competitiveness and foster economic growth. The idea is that clusters of excellence create an ecosystem that fosters further innovation and entrepreneurship. Funds in the Horizon Europe programme will be allocated according to this criterion.

Projects seeking to attract EU funds are subject to competition from the entire EU, instead of only from their own region or member state. This should have a positive effect on the scientific excellence of projects and could be seen as an element of EU added value.³⁸ The selection process under pillars I and III of Horizon Europe seems to be designed to strengthen this competition element even further.

The Commission also proposes to introduce “seals of excellence”, which could be allocated to “excellent” Horizon Europe applicants who failed to get funding because of strong competition. Using their seal, they would be allowed to seek funding for their project from the structural funds. The advantage of such an approach could be that it creates more flexibility between budget lines and could also help to steer regional funds towards innovation.

36 Rijksoverheid (2018). *Kabinet: Innovaties en topsectorenbeleid richten op maatschappelijke uitdagingen*. <https://www.rijksoverheid.nl/actueel/nieuws/2018/07/13/kabinet-innovaties-en-topsectorenbeleid-richten-op-maatschappelijke-uitdagingen>.

37 European Commission (2018). *Proposal for a decision of the European Parliament and of the Council on establishing the specific programme implementing Horizon Europe – the Framework Programme for Research and Innovation [COM/2018/436]*. <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A52018PC0436>.

38 European Commission (2017). *Commission staff working document - In-depth interim evaluation of Horizon 2020*. [https://ec.europa.eu/research/evaluations/pdf/archive/h2020_evaluations/swd\(2017\)220-in-depth-interim_evaluation-h2020.pdf#view=fit&pagemode=none](https://ec.europa.eu/research/evaluations/pdf/archive/h2020_evaluations/swd(2017)220-in-depth-interim_evaluation-h2020.pdf#view=fit&pagemode=none).

The danger is that objectives may become confused since the “excellent” project may not be the project with the biggest regional impact.

Coherence

The regional funds of the EU (the European Regional Development and Cohesion Fund and the European Social Fund) aim to contribute to convergence and to the strengthening of economic growth. As indicated in the table above, it is difficult to estimate how much of these funds will be spent on innovation-related projects. However, at least one of the five policy objectives (POs) of the ERDF directly mentions innovation (PO1: A smarter Europe by promoting innovative and smart economic transformation). Other policy objectives are also relevant given their aim to make Europe greener and low-carbon (PO2), promote digitisation (PO3) etc. The proposal suggests that 65–85% of ERDF funding should be spent on PO1 and PO2. Programme management, and project selection, will be left to regional authorities. Where ERDF projects relate to regional development, funds from the ESF will be spent on the improvement of education levels, improving (lacking) digital skills etc.

Why EU?

A frequently cited advantage of EU funding is that it helps to create cross-border networks between companies, knowledge institutions and other bodies. Even large companies, for which the EU contribution is small compared to their own resources, see this network effect as an important asset – proof of which would be their willingness to make the effort of going through an (often) cumbersome application process in order to obtain EU funding. On the other hand, companies and knowledge institutions are increasingly able to find each other thanks to, among others, modern communication techniques and previous EU programmes. Therefore, given the benefits networks provide by themselves, a legitimate question could be how much (new) EU funding is necessary to continue existing networks or create new ones: should not the success of EU programmes make continued EU funding redundant?

A further point that needs to be addressed is whether the Commission has the capacity, both in terms of financial and human resources and in terms of knowledge and expertise, to carry out an effective innovation policy.³⁹ Most evaluations of the EU's previous Framework Programmes do conclude that the *added value of EU funding* for innovation is large.⁴⁰ Some caution is appropriate, however, as it is also very difficult to quantify added value in research⁴¹ and the macroeconomic models used tend to rely extensively on a priori assumptions and leverage estimates.⁴²

Some projects, such as ITER or Galileo, are so large that financing them is too expensive for individual countries. Even the more critical evaluations of EU policy⁴³ therefore conclude that there is a case for EU funding here. This could be an argument in favour of EU-defined missions.

There is always a danger of EU funding *crowding out national financing* when governments decide to freeride on EU innovation efforts. After all, the benefits

39 In interviews conducted for this paper, experts expressed different opinions on the added value of an EU innovation policy: some were unreservedly positive, whereas others questioned whether an EU approach added much value as compared to leaving it to the member states.

40 See e.g. Commitment and Coherence, High Level Expert Group (2015). *Ex-post evaluation of the 7th EU Framework Programme (2007–2013)*, which mentions a return rate of €11 for every euro invested by the Commission over a 25-year period.

41 European Parliament (2010). *Reflection paper on the concept of European Added Value*. Luxembourg: Publication Office of the European Union; Yellow Window Management Consultants (2000). *Identifying the constituent elements of the European Added Value (EAV) of the EU RTD programmes: conceptual analysis based on practical experience*. Final Report for the DG XII.

42 Busillo, F., T. Muccigrosso, G. Pellegrini, O. Tarola, and F. Terribile (2010). *Measuring the effects of European regional policy on economic growth: A regression discontinuity approach*. Rome: UVAl.

43 Schout, A., and D. Bevacqua (2018). *EU Added Value – Fact-based policy or politicised facts?* The Hague: Clingendael Institute.

of innovation spending tend to be long-run and difficult to attribute, whereas the concrete and visible results of spending on infrastructure and social benefits contribute immediately to the popularity of national politicians. The Commission's own evaluation of Horizon 2020, however, concludes that the *additionality* of EU funding is high, meaning that it does not replace or substitute for national funding.⁴⁴

In addition, funding projects from the European budget ensures that all member states are contributing to projects that are of *common interest* to all the member states. In this way, freeriding, whereby a limited number of countries bear the costs while the benefits are enjoyed by all, is prevented.

When assessing the innovation potential of the MFF, it is important to look at the possibilities for *synergy* with other programmes, which can help to improve innovation ecosystems or steer innovation in line with missions. The proposal for Horizon Europe itself lists several programmes with which synergies can be established, including the Common Agricultural Policy (CAP), European Structural Funds (ESF) and the European Regional Development Fund.

The €324bn Common Agricultural Policy (CAP) mentions “strengthening knowledge, innovation and digitalisation” as a cross-cutting objective. The goal here is diffusion of innovative techniques, rather than developing new, ground-breaking innovations. In one of the clusters in Horizon Europe’s missions-oriented pillar II, an amount of €10 billion has been earmarked for R&I in the field of food, agriculture, rural development and bio-economy. This is another area where synergy could be created by bringing CAP subsidies into line so they support the goals of the CAP-related missions under Horizon Europe (such as reducing water consumption or creating a circular economy in the agricultural sector).

Synergies could, however, also come at a cost. First of all, there is the risk that anything that somehow can be linked to innovation will be justified under this umbrella – thereby emptying its meaning. There is also a risk that the objectives of several programmes will be incompatible, resulting in conflicting activities. Bringing programmes consistently into line with the overarching missions should help to avoid this, although this also means that regional authorities are curbed in their freedom to identify local needs to achieve regional development. This might not be in line with the most pressing needs at the local level.

5. Political context

All discussions on the EU budget are obviously politically sensitive. A number of political arguments can be identified:

- For pragmatic or more principled reasons, some countries aim to shift EU funds away from traditional CAP and regional funds towards funds associated with ‘modernisation’.⁴⁵
- Bigger member states are able to cover a broad spectrum of research activities and sectors. Moreover, big countries tend to prefer bilateral agreements over R&I activities.⁴⁶
- Although the number of net-contributing countries has gone up, vested interests in the member states have not resulted in demands for further reconsiderations of the MFF. For example, although president Macron suggested reform of the CAP in his Sorbonne speech, subsequent French policy proposals were keen to safeguard the position of the CAP in the MFF.⁴⁷

44 European Commission (2017).

45 Rijksoverheid (2018). *Dutch position paper on new MFF, February 2018*. <https://www.rijksoverheid.nl/documenten/vergaderstukken/2018/03/02/dutch-position-paper-on-new-mff-february-2018-engelstalig>.

46 Soete, L., and J. Stierna (2018).

47 McCormack, C. (2018). *France rejects CAP cuts as Creed meets officials in Paris*. <https://www.agriland.ie/farming-news/france-rejects-cap-cuts-as-creed-meets-officials-in-paris/>.

- Brexit and the phasing out of the rebates provoked wider discussions on the MFF and the distributions of net payments. This is evidently related to the allocation of EU funds.

A related discussion concerns the allocation criteria of Horizon Europe funding. In its report on Horizon Europe, EP rapporteur Dan Nica advocates the inclusion of additional subcriteria for the selection of project proposals that appear collectively to be aimed at increasing the spread of funds around Europe – a demand that could even grow stronger in the light of a reduced budget for regional and structural funds. This “widening participation” criterion, however, encounters opposition from knowledge institutions that firmly support a continuation of the excellence principle.⁴⁸ This position is also supported by business organisations as well as several member states including the Netherlands. In contrast, other countries such as Poland emphasise the importance of widening.

6. Conclusion

Even though the EU’s position on the global innovation charts is deteriorating, it turns out that the primary responsibilities for most of the causes lie with the Member States. National and regional authorities in particular need to ensure that workforces are well educated and have the required skills, that (labour) markets function smoothly, that infrastructures are in place and that national and regional budgets provide the required levels of funding.

This does not mean that there is no role for the EU and EU funding. The European Commission presented a financial package that, if implemented well, has the potential to address Europe’s weaknesses and that offers added value beyond what individual member states can do. EU funding for projects aimed

at ‘excellence’ can strengthen strong institutions and innovators, cooperation and networking, while at the same time enhancing quality by fostering EU-wide competition for funding of ground-breaking research (‘excellence’). In addition, formulating EU-wide missions can help to coordinate efforts of regional, national and European actors and steer innovation towards solving important societal challenges.

In addition, innovation objectives in the EU’s structural and rural development funds remain important in addressing regional weaknesses that impede innovation and in supporting diffusion (e.g. supporting digital skills, digital infrastructure or education). Moreover, access to finance can be improved further to enable innovative European start-ups to grow – in the hope of stimulating global EU unicorns. This means first and foremost that a better functioning capital market is required. InvestEU can support the raising of private capital by offering guarantees to deal with risk-averse European banks.

Beyond the use of the EU budget, assessments of member state weaknesses in the context of the European Semester process remain an important component in strengthening the EU’s innovation capacities. Coordinating and financing flagship scientific projects also requires the adaptation of legislation and the removal of barriers to innovation.

Hence the case can be made for a more ambitious increase in the budget for innovation compared to the current proposals from the Commission. In addition to increasing R&I funding, it is also necessary to address the related reinforcement of the EU’s governance of innovation, especially when it comes to the selection of projects for funding (through institutions such as the ERC and the new EIC proposed by the Commission). Ensuring the independence of the EU’s research bodies seems essential.

48 See e.g. https://www.the-guild.eu/publications/9_guild-response-to-ep-draft-reports.pdf; <https://www.neth-er.eu/nl/nieuws/EP-zet-widening-discussie-op-scherp>.

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www.clingendael.org
info@clingendael.org
+31 70 324 53 84

 @clingendaelorg
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About the authors

Herman Beun is a former Research Fellow at the Clingendael Institute, where he focussed on EU politics and legislative affairs in the fields of economic and financial policy. He formerly worked as a policy adviser and researcher in both the Netherlands national parliament and the European Parliament, and the Netherlands Court of Audit.

Marloes van Schaik is a Research Assistant at Clingendael's Europe and the EU Research Unit.

Adriaan Schout is Senior Research Fellow and Coordinator Europe at the Clingendael Institute. He combines research and consultancy on European governance questions for national and European institutions. He has worked amongst others on projects addressing issues of the EU presidency, EU integration and improving EU regulation.

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