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Introduction

Ever since Schumpeter's (1942) description of capitalism as a process of creative destruction, innovation and policy domains related to its promotion – from support for research and development (R&D) to enhancing competition in markets – have been understood as paramount to (social) transformation. In some ways the European Union has been a forerunner in this, as its institutions have explicitly emphasized innovation policy as a priority policy domain, since at least the Lisbon Agenda. Globally, the innovation-policy discourse has shifted since the 2000s from a rather “technocratic” and science-oriented focus towards a more (public) value-driven understanding of innovation policy. Today's innovation policy is no longer only about fixing specific “market” or “system” failures through “policy mixes” based on almost universally applicable “best practices” (for critical reflections of this perspective, see Flanagan & Uyarra, 2016). Innovation policy is increasingly also about fostering different *transformative changes* that are based on broader public values and expectations: kick-starting economic growth and development through the market-shaping role of the state (Mazzucato, 2013), solving boundary-spanning societal challenges (EC, 2012; Ulnicane, 2016), supporting socio-technical transitions towards sustainable development models (Rogge & Reichard, 2016), spurring innovation in the established “legacy sectors” such as energy and classic welfare-state services from health to education (Bonvillian & Weiss, 2015), as well as bringing about socio-economic transformations of less-developed economies and regions – the focus of the current chapter. Particularly in the European Union (EU), and probably best exemplified by the societal challenges and smart-specialization rhetoric in the Horizon 2020 program and the EU's regional development policies respectively, the innovation-policy focus has gradually shifted towards delivering not simply more publications, patents or science graduates, but wider transformative change.

However, the EU is built upon a unique architecture – a *quasi-federal* system of division of powers and checks and balances between European and domestic institutions. Is such an architecture conducive for innovation and transformative change, particularly in catching up countries in the East and the South of Europe? In what follows, we argue that, first, quasi-federal architecture virtually ensures multi-speed or unbalanced Europe in terms of innovation and structural change. As Hirschman argued half a century ago, unbalanced growth is not necessarily

a bad thing – provided that we know how to utilize it to diversify our economies (Hirschman, 1958). However, and this is our second point, Europe’s innovation-policy response to unbalanced growth – the concept of *smart specialization* and its predecessors – lacks the needed punch, as it is essentially a bureaucratic answer targeting incremental changes where a much more powerful policy impetus and guidance is needed. We propose an alternative approach, based on Mazzucato (2013) and Burlamaqui and Kattel (2016), and argue that in order to unleash new waves of innovations and structural transformation, particularly in European catching-up countries and regions, European regulatory and institutional changes should target: (1) financial structures of the respective economies and “direct” the financial sector towards development, (2) enable innovations in regulations and public services, (3) encourage long-term investments in future (green) technologies. In other words, Europe needs to develop its own specific blend of the entrepreneurial state.

Europeanization and technocratic innovation policies in the EU

As one of the key policy responses to different levels of economic development within the EU, innovation policy has been a “shared” policy domain between the EU, nation-states and regions. The EU can coordinate such “shared” policies only through “soft” mechanisms (e.g. open-method of coordination, OMC – see Kaiser & Prange, 2004) and limited direct financing tools. Thus, from the establishment of the Framework Programs until the concept of the European Research Area was proposed in the early 2000s, the EU did not really seek to coordinate national and regional innovation policies and focused rather on its own limited initiatives (Framework Programs have constituted only a small share of EU-wide innovation financing).¹

But since the 2000s, the EU has sought out a much more active role in innovation-policy coordination. At first, through the “competitiveness” narrative of the Lisbon Agenda, the EU attempted to improve the coordination of innovation policies to increase the overall competitiveness of the EU as a bloc vis-à-vis the US and Asia (Rodrigues, 2009). Until recently, the key concept of the EU’s innovation policy rhetoric was the “European Paradox”, which summed up the prevalent perception of policy makers that the EU in general is good at doing basic research and developing human capital, but lags behind global competitors (especially the US) in the commercialization of these inputs and in entrepreneurial activities in general. This diagnosis led to a rather universal and technocratic innovation-policy approach that defined policy problems through the identification of generic market and system failures (for good overviews on different aspects of failures-based innovation policies, see Bleda & del Rio, 2013; Weber & Rohracher, 2012). These could be fixed through mostly generic and non-selective “policy mixes” that focus on supporting RDI commercialization (through patenting, spin-off creation), networking (via clusters, university-industry cooperation mechanisms) and other soft and indirect coordination activities. While such policy logic and mixes may have suited the innovation context of more mature economies (innovation “leaders” in EU’s terminology), such as Germany and the Scandinavian countries (though, see Bonaccorsi, 2007; Dosi et al., 2006), in the case of Central and Eastern European countries (CEE) and other catching-up economies such a policy approach has overlooked the domestic evolution of innovation capabilities and specializations as well as policy capacities to support innovation (see Karo, 2010; Karo & Kattel, 2010; Piech & Radosevic, 2006).

Despite the high hopes placed on innovation policy and actual convergence of innovation policies – innovation policy documents in, say, Estonia and Finland might look quite similar – the CEE and other catching-up economies seem to have experienced only limited actual

convergence in innovation performance and socio-economic transformations and catching up with the more developed peers.

As various studies have shown – and as is summarized in EU’s innovation scoreboard rankings and European semester country reports² – not all EU and CEE countries and regions have moved along the development trajectories with similar speeds and trajectories. While for most CEE economies, the vicinity to core European exporting economies (Scandinavia and Germany, respectively) has gradually brought about increasingly complex production (especially in the Visegrád countries),³ this has not in all cases been reflected in increasing productivity. We can say that the economic growth in CEE during the last two decades, but especially since the EU accession, has been driven more by financial liberalization and overall financialization of economies (Gabor, 2012) than by industrial restructuring through innovation (see Figure 15.1). Germany and other Northern economies have low shares of foreign ownership and export capital; the European South, in turn, is the exact mirror image of the European North as it has low foreign ownership and imports capital; Eastern European and Baltic economies have extremely high shares of foreign ownership and massively import capital. Particularly the latter two regions – Eastern Europe and the Baltics – have financial profiles with extremely constrained financial decision-making spaces: what gets funded and whether and how innovation is at all supported by the “market” is decided somewhere else.⁴

In sum, despite the hopes set on EU-led innovation policy coordination and learning, CEE and other EU catching-up economies seem not to have learned much from their more developed peers regarding how to build innovation policies that work for local socio-economic transformations. Rather, they have fallen into the trap of policy copying and the legitimization of policies through the emulation of generic “best practices”. This has also been partly caused

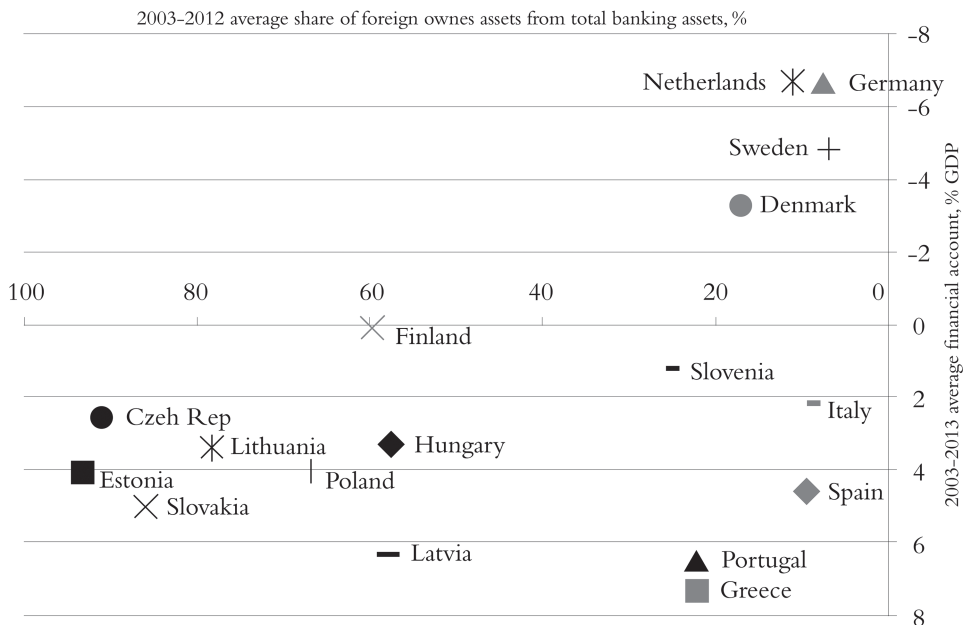


Figure 15.1 Financialization of CEE economies in 2000s

Source: Calculations made by authors based on the data of Eurostat.

by the weak policy capacities of the EU to provide country-specific guidance and insights (Karo et al., 2017b; Veugelers, 2014). Further, the growing reliance of innovation policies on European Structural and Investment Funds and Horizon2020 program (see Veugelers, 2014) has pushed especially CEE economies towards rather similar institutional designs of policy implementation, as well. In addition to similar policy mixes, also similar organizations (implementation agencies for structural funds) with similar policy and administrative styles (focus on administrative and procedural clarity and accountability, principal-agent type relations within the public sector and between public and private sector) have become prevalent (Suurna & Kattel, 2010, Karo & Kattel, 2010, 2015).

We will argue next that at least in innovation policy, the EU has been stuck in what we describe as *quasi-federalism*: it has created (partly intentionally and through the co-evolution of EU initiatives and local reactions) policy and funding structures that enforce policy convergence and limit member state policy space, yet policy impact remains anemic as domestic policy learning and coordination structures are weak and partially weakened by the EU initiatives themselves.

Quasi-federalism, experimental governance and economic growth

The key to understanding quasi-federal nature of European innovation governance is to look at the latter through what has been dubbed “experimental governance”. The concept has been developed by Sabel and Zeitlin (2008, 2010). They argue that given the strategic uncertainties characterizing many modern policy arenas (also innovation and industrial policies – see Mazzucato, 2013) reinforced by the political and institutional complexities of the functioning of the EU, one can witness new forms of decision-making, deliberation and accountability emerging in the EU. This “experimental governance” model is based on a deliberative and dynamic, as opposed to a principal-agent based, model of decision-making and accountability. It can function through different institutional arrangements (e.g. fora, networked agencies, councils of regulators, open methods of coordination):

- The EU institutions together with member states set broad policy frameworks, goals and indicators (e.g. investing 3% of GDP into R&D);
- But allow national and regional authorities significant autonomy for local experimentation and search for suitable policy solutions;
- This autonomy is counter-balanced by the obligation to report policy results (achievement of targets) to the EU and other member states (through progress reports, peer reviews, expert assessments);
- This reporting and deliberative and peer-review-based model of accountability may crucially lead to mutual learning and adjustment of both the broader EU-level policy goals, indicators and procedures, but also of national policy and governance approaches.

In this framework, specific roles should emerge for the EU and national actors (Sabel & Zeitlin, 2010: 4) – even though EU officials and member states collaborate in formulating frameworks and evaluating them, it is the distinctive role of the EU level to promulgate authoritative frameworks and oversee their enforcement, while it is the distinctive role of the member states and subnational bodies to adapt these frameworks to their own circumstances and to report on their experience. The most successful of these arrangements combine the advantages of decentralized local experimentation with those of centralized coordination, and so they blur the distinction between forms of governance often held to have incompatible virtues.

This recognition and focus on not only EU-level initiatives but the role of and potential feedback from local actors as well are the key elements of “experimental governance” (see Sabel & Zeitlin, 2008, 2010 on how such an approach relates to democracy and representativeness). The interplay between EU guidelines and local adoption of these guidelines is particularly pronounced in economic policy. Here a set of EU rules – such as fiscal constraints on member states, inflation targeting the European Central Bank (ECB), free movement of labor without a common labor-market policy and a common currency – create what we call a quasi-federal architecture. Simply put, European quasi-federal economic architecture assumes that all countries within the EU can be successful with exports-based development strategies; everybody just needs to be competitive enough to manage in good and bad times – without the help from exchange rate management (common currency regime) or lender of last resort (ECB’s main mandate is inflation targeting).

Within this quasi-federal architecture, *innovation* – both technological and social – is one of the most in-vogue concepts in the EU, especially since the Lisbon Agenda was adopted in the early 2000s. While the empirical evidence on the effectiveness of innovation policies for economic development may be debatable (EC, 2013; MioIR, 2012), the “bets” placed by politicians and bureaucrats on innovation policy have been in fact increasing and extending.

However, within the quasi-federal architecture, laid upon countries and regions with very different histories, institutional frameworks and economies, the European economies seem to quite clearly fall into the multi-speed development pattern. This has become particularly clear during post-2008 crisis recovery (Kattel, 2015).

Experimental governance of innovation policies redux: smart specialization

The EU has recognized that its prevalent approach towards both innovation and also cohesion policies may actually not have been a very successful one (see Barca, 2009; EC, 2012). An unbalanced Europe diverges towards an even more unbalanced Europe. To increase the effectiveness of EU policies in speeding up technological diffusion, innovation and socio-economic transformation processes, the EU has introduced for the 2014–2020 period – as an *ex-ante* conditionality – a new governance and coordination mechanism for innovation policies called “smart specialization”, financed by European Structural and Investment Funds (Foray, 2015; Karo & Kattel, 2015; McCann & Ortega-Argiles, 2015), that has spread as a voluntary governance mechanism also to non-EU member states and regions that are not so dependent on EU fiscal transfers (Asheim et al., 2017).

In short, this new concept – designing and implementing national and regional industrial and innovation policies through the process of “entrepreneurial discovery” (Coffano & Foray, 2014) – seeks to build new policy experimentation arenas across the EU regions. These arenas should ideally support the process of “entrepreneurial discovery”, i.e. allowing local actors – policy, academic and “real” entrepreneurs – to jointly “discover” (through search, deliberation and selection) local development and innovation opportunities (specializations), related policy problems, contextually best-fitting solutions and implement these in an agile way, while also considering EU- and nation-state-level policy needs and initiatives. The latter is to be secured through policy coordination, peer reviews, mutual learning etc., which the EU supervises via the *ex-ante* conditionality monitoring mechanism (approval of European Structural and Investment Funds based national strategies), the European Semester-based economic policy coordination mechanism (for an overview of the coordination system, see Karo et al., 2017b), and also through using soft coordination and policy-advice methods (organized and coordinated by the

EU experts working at EU agencies – see RIS3 website – as well as through the coordination and innovation actions of Horizon2020).

While smart specialization is often treated by policy makers as a narrow conditionality of setting-up a strategy that sets the innovation policy focus on a few “discovered” and legitimized “specializations” (industrial domains, or sectors) (for critical reflections, see Foray, 2015; Foray et al., 2011), we see the emerging concept of smart specialization as part of the continued evolution of the “experimental governance” approach emerging in the domain of innovation policy since the OMC-based Lisbon Agenda (Borras & Jacobsson, 2004; Kaiser & Prange, 2004; Rodrigues, 2009). The emergence of such an experimental governance approach in the innovation policy arena seems to be part of the global search for functioning industrial and innovation policy approaches (e.g. Crespi et al., 2014; Hausmann & Rodrik, 2003; Lin, 2012; Radosevic, 2017). As such experimental models are emerging rather through co-evolution between different institutions, interest and feedback arenas, and not by conscious design and policy choices in some empty spaces (Karo & Kattel, 2017; Sabel & Zeitlin, 2008, 2010), the crucial question is whether the specific policy legacies allow for such experimental governance arenas and activities to emerge. The experiences of CEE economies in designing and implementing smart-specialization-related activities provide cautionary tales, showing that the introduction of experimental governance approaches to the existing innovation policy models is not as easy as the EU has seemingly assumed (e.g. Karo & Kattel, 2015; Karo et al., 2017a; Kroll, 2015; Paliokaite et al., 2016).

A common finding across the CEE economies seems to be that policy makers perceive smart specialization as a formal *ex-ante* conditionality (to develop a strategy that agrees through private-sector consultations on some priority specializations to be supported) and do not focus on the exact rationales and governance implications of the concept. This is driven by at least four key factors: (a) the enduring legitimacy and legacies of the European Paradox narrative and related policy mixes, (b) the complexity of choosing the proper policy roles for different policy actors in the multi-level governance context of the EU; (c) time pressures related to the usage of EU funding as the main source of investments in the EU periphery in times of austerity policies, (d) institutional frames regarding the design and implementation of the systems for managing EU funds that focus on clarity of *ex-ante* rule formulation and procedural accountability (as opposed to risk-taking and experimentation).

As a result, policy makers seem to pay little attention to the fit between policy rhetoric and sound policy interventions and try first to apply existing and known policy instruments (support for clusters, university-industry collaboration, university spin-off formation etc.) with the new policy rhetoric and problem definitions without much revisions (see also Edquist, 2014; Vitola, 2014). Thus, the adoption of the smart-specialization approach has lagged behind in most CEE economies because the EU had rejected early policy strategies and plans proposed even by the countries with traditionally more open and consensual policy-coordination and deliberation styles (i.e. Slovenia, the Czech Republic, Poland; see more in Karo et al., 2017a). Also, a recent study (Sörvik & Kleibrink, 2015) of smart-specialization focus areas chosen by different regions found that there is still an overall convergence around those groups of domains which are closely linked to the EU strategic priorities. Thus, regardless of the hopes set on the smart-specialization concept, the shift away from converging policies towards domestic experimentation has been rather incremental.

We have to assume that as innovation policies in CEE and other catching-up EU regions have been largely driven by the EU-led policy narratives, financed by the EU fiscal transfers, discussed and modified through EU-level technocratic policy-making and coordination processes (technocratic peer reviews and lesson-drawing), this tends to result in policies that are often

detached from the needs of local firms and industries. We are in fact witnessing how innovation policies are increasingly designed, decided and implemented by “instrument constituencies” (communities of bureaucrats, international consultants and evaluators) (Beland & Howlett, 2015). These communities often focus on and promote certain “fashionable” solutions (e.g. cluster policies, demand-side innovation-policy instruments etc.) regardless of contextual policy problems and challenges that could be ideally weeded out by deliberations and experimentation by more localized and open policy communities composed of local academics, business leaders, general public and users. The enduring legitimacy of these instrument constituencies is embedded in the EU-level policy rhetoric, expert networks and related policy-learning mechanisms. Thus, most innovation policy rhetoric, debates and planning in CEE and other catching up regions center around the EU best practices and adoption of EU proposed policy goals (from the 3% investment target to lower level indicators) and instruments.

While these aspects are part of the experimental governance model that characterizes most EU member states and regions, the instrument constituencies in CEE and other catching-up regions – being most dependent on the EU funds for innovation financing and also influenced by austerity and fiscal-consolidation narratives – seem to also be those most inclined to emphasize formal procedural accountability and cost-efficiency over flexible policy discussions, risk-taking and experimental mindset. Thus, when the EU proposed smart specialization as an attempt to reconfigure domestic policy experimentation and stakeholder-participation arenas and approaches, for policy makers in the member states this meant a fundamental task to revise not only policies, but also policy networks, stakeholder-participation models and accountability mechanisms. This is inevitably a slow and conflictual process, which would require a stronger push or guidance from the EU level than allowed in the multi-level governance system of the EU economic governance.

Alternative framework: Schumpeterian entrepreneurial state

In the previously-described attempt by the EU to shift away from overly technocratic towards more experimental innovation policies, we can notice at least two core contradictions created by the structure and function of EU as an imperfect multi-level polity.

First, the economic-policy coordination system after the global financial crisis (EU2020 strategy, European Semester monitoring processes etc.) expects that the EU member states simultaneously cut budgets and maintain or even increase the financing of innovation policies (EC, 2014), even if innovation is one of the vaguest policy domains, where policy impact is difficult to show. Shifting innovation financing to EU funds (for structural reforms and investments, Horizon 2020) seems to be a logical reaction to these conflicting goals. Yet, this creates difficulties in adjusting innovation policies to the local context and making these work for socio-economic transformations.

Second, as a way out of the first contradiction, the EU policy planners try to steer local policy makers away from the EU-wide “instrument constituencies” and simple copying the EU best practices towards more conscious local policy experimentation and experimental governance. In CEE, this new and only emerging governance approach is contradicted by the more established focuses on procedural accountability, absorptive capacity (or the speed of distributing EU funds to recipients), and strategic and performance management based on ex-ante defined output indicators (all based on the assumptions of principal-agent type relationships in decision-making and accountability). At least in CEE, it seems that local policy makers still find more legitimacy from this latter and more technocratic approach, which lacks the sufficient legitimacy and authority to set policy goals and directions needed to leverage the growth potentials

stemming from the *imbalances* and *differences* across the EU in economic structures and development models.

We propose an alternative analytical framework that could be dubbed a Schumpeterian entrepreneurial state and that puts our analytic focus on broader political and policy-level issues of innovation than discussed in the existing technocratic frameworks of market and systems failures, policy mixes etc.⁵ Mariana Mazzucato's *The Entrepreneurial State* (2013) provides forceful insights in how (Western) governments were – often in the stealth disguise of military R&D – powerful visionaries and funders of technological advances. Building on Mazzucato (2013), the key idea for such an analytical framework is the integrated understanding of how the financial system works in a specific time and context and how it should be structured and governed to effectively foster innovation and development. Schumpeter understood the importance of such a framework, but he never developed it fully. He argued in his *Capitalism, Socialism, Democracy* (1942) that capitalism develops towards more and more complex and organized forms of innovations; indeed, he argued that in the future, innovations will essentially be administered either in large private or public organizations. His work can be supplemented with ideas by Keynes, Minsky and Kregel to understand successful *development processes* as necessarily coupling proactive *financial structures* and *robust economic and financial governance systems* oriented towards industrial financing – and hence transformative change.

In this line of thinking, and following and developing further Mazzucato (2013) and Burlamaqui and Kattel (2016), we propose that there are three key elements in *the concept* of the Schumpeterian entrepreneurial state:

- a Public “directing” or “steering” of the financial sector *towards financing for development* (funding technological upgrading, innovations)
- b State as “technology maker” through regulatory standards and service provision (see also Karo & Kattel, 2016)
- c Large-scale socialization of investment in infrastructure, education and R&D

In applying this concept to the EU, we can argue that under the quasi-federal architecture (that is, assuming that the main features of the European economic, financial and fiscal policy elements remain largely as they are now), the European Schumpeterian entrepreneurial state should focus on, *first*, financial regulations that incentivize the financial sector to invest into productive sectors of the economy. This may include both public development (or sectoral) banks and/or creating a segmented financial sector. *Second*, it is important to pursue Europe-wide and domestic innovations in public services (e.g. common regulatory frameworks in health care and other large public services); and *third*, encourage long-term investments into (green) future technologies. These recommendations also imply that innovation policy should be first freed from the shackles of current technocratic tinkering by eurocrats and brought back to the political discourse and open deliberations to legitimize these new pro-active attempts to create and shape European markets and development models.

Concluding remarks and future research

Despite being a global forerunner in rhetorically linking innovation (policy) and transformative change, the European Union has been quite poor in actually transforming its catching-up regions through innovations. This poor performance has resulted from the very architecture of Europe: a quasi-federal system that relies on elite “instrument constituencies” (communities of bureaucrats, international consultants and evaluators). Such a structure has been particularly

weak also in learning from its own past mistakes, especially regarding the enduring fundamental contradictions between the strict and risk-averse rules of European Structural and Investment Funds vs the uncertainties and complexities of supporting innovation. Indeed, recent attempts at creating new European-level policy responses – such as smart specialization strategies – seem to have only deepened existing problems. In this paper, we have proposed an alternative framework, where innovation policy requires substantive political choices and leadership (decisions on the direction of public and private innovation funding) and thereby becomes a truly cross-cutting policy agenda covering government and private actions from finance to public services. As the ideas underpinning the framework have been introduced to the modern innovation policy only recently, they are naturally in need for further research focusing on issues such as:

- How to relate financial regulations and innovations policies? What would be the appropriate policy rationales and institutional designs?
- How to relate fiscal and macro-economic policies and innovation policies? What would be the appropriate policy rationales and institutional designs?
- How can policy makers focus more on directionality of transformative changes in the context of quasi-federalism? How to legitimize and coordinate such policies?
- What kind of policy capacities are needed to deliver transformative change through innovation policies?

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Notes

- 1 For example, the main RDI program Horizon2020 runs for 7 years with a total estimated budget of 80 billion Euros; in 2013, EU countries (public and private sectors combined) spent more than 250 billion Euros on RDI. See for details, Europe 2020 indicators for research and development, http://ec.europa.eu/eurostat/statistics-explained/index.php/Europe_2020_indicators_-_R%26D_and_innovation.
- 2 See http://ec.europa.eu/growth/industry/innovation/facts-figures/scoreboards_en and https://ec.europa.eu/info/publications/2017-european-semester-country-reports_en, respectively.
- 3 In the case of the Visegrád countries, a lot of the growth in knowledge intensity has taken place in Hungary and the Czech Republic through the role played by multinational companies maintaining or relocating their local production enclaves there (e.g. Drahokoupil et al., 2016).
- 4 One could also discuss here public investment programs (into infrastructure, R&D, etc.); however, these are typically a few orders of magnitude lower than financing of investments by private sector.
- 5 The section builds on Burlamaqui and Kattel (2016).

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