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# Strategies of gain and strategies of waste:

## What determines the success of development intervention?

by

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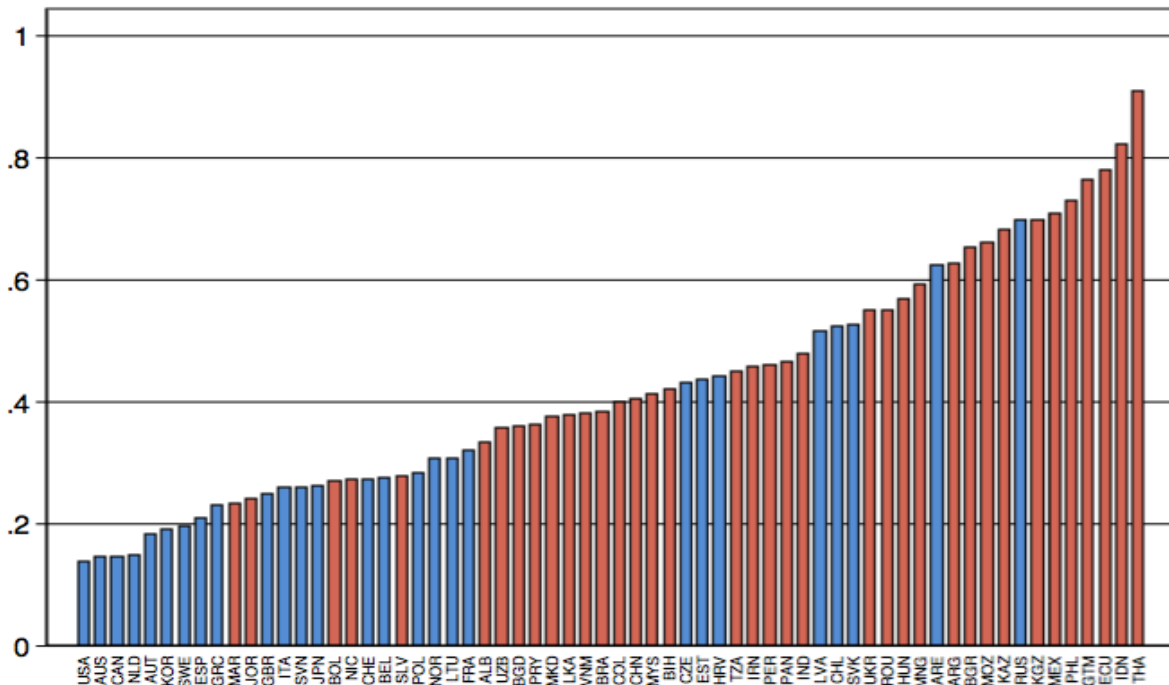
### ***Abstract:***

The development policy landscape has, in recent years, been dominated by four types of interventions: (1) infrastructure expansion and development; (2) the attraction of inward investment; (3) the promotion of innovation and development of human capital; (4) the cultivation of agglomeration and physical co-location. This paper engages with these four broad policy types with a view to, first, assess and comment on the utility of these approaches in different development contexts, and, second, provide an indication of what has worked and what has not worked in the design and implementation of these strategic actions. It relies on a review of a handful of ‘strategies of gain’ and ‘strategies of waste’ to ascertain insights into the steps that should be taken to maximise the likelihood that territorial development policies – irrespective of the development axis towards which they are oriented – fulfil their potential and contribute to the reduction of the territorial disparities in developed and developing contexts alike. The lessons drawn from this review are four-fold: i) development strategies composed of multiple related and mutually-reinforcing actions and interventions across development areas deliver better results; ii) strategic approaches to the promotion of economic growth that are solidly grounded in robust diagnoses are generally more successful; iii) the awareness of where exactly the territory is situated on the development spectrum is crucial; and iv) the institutional dimension cannot be left un-addressed in the design and implementation of policy interventions. These lessons are supplemented by a general framework relating to how territorial approaches to development should be designed for areas at different points in their development trajectories.

**Keywords:** Development, development strategies, institutions, territorial inequality, lagging areas.

## 1. Is there a need for territorial development policies in lagging cities and regions?

Economic growth tends not, for a number of generally well understood reasons, to transpire at the same rate and with the same intensity across space (World Bank, 2009). This tendency has produced gulfs between countries' most economically prosperous core cities and regions and their lagging, less dynamic ones. As in the case of interpersonal inequality, territorial inequality tends to be more prevalent in less developed and emerging countries, than in developed ones. This is shown graphically in Figure 1, displaying country levels of regional inequality. Less developed and emerging countries (in red) exhibit, with few exceptions, much higher levels of inequality than more developed nations (in blue).



*Figure 1: Differences in territorial income inequalities among selected countries (Second Theil Index). Authors' elaboration and calculation. Source: OECD and various national statistical offices; data for 2010 or the closest year available.*

There is, of course, an interpersonal element to territorial inequality. Individuals living in core areas, where opportunity (income-generating or otherwise), infrastructure and resources (broadly defined) are generally more abundant, tend to benefit from merely 'being there'. The prospects of individuals living in lagging regions are, on the other hand, more limited. Some will

emigrate to more economically prosperous regions, fuelling a brain drain that is associated with economic consequences of its own. The livelihoods and wellbeing, however, of those that opt not, or are unable to do so can be adversely impacted by the lack of dynamism and opportunity in the territories where they live.

Territorial imbalances are associated with their fair share of ills and implications. One, in particular, has come to the fore of late: sufficiently pronounced and temporally sustained territorial inequalities sow the sort of social discontent, tensions and political unrest that can, and has in fact fuelled the rise of populism and the success of populist movements, leaders and parties.

Populism has long thrived in areas particularly affected by poverty, pronounced economic crises and persistent social problems (Roberts, 1995). Territorial inequality introduces another variable into this equation. As the gaps between ‘have’ and ‘have not’ territories, between areas rife with opportunities and those affected by prolonged economic decline, widen, the immediacy and tangibility of the social and economic challenges by which lagging and declining regions are faced increases for those in them. This, in turn, fosters a sense of neglect and disenfranchisement.

Developing countries, given the pervasiveness of territorial inequalities are most susceptible to ‘inequality-induced populism’. That said, even the most economically advanced environments are not immune to it. Now US President, Donald Trump, the successful Brexit movement in the UK, France’s Marie Le Pen and her nationalist Front National and Germany’s far-right AfD party, among others, have drawn support not necessarily from individuals living in economically prosperous, core cities and regions – where the poorest of the poor have often in recent times voted in line with the economic elites –, but from increasingly frustrated voters in territories that have struggled to cope with the pressures associated with globalisation, technological change and more general economic progress. This populism, much like the proliferation of inequalities that breed it, is not without economic consequence; the social and political uncertainty and instability it gives rise to can, among other things, stifle public and private investment, limit personal mobility and migration and hamper trade and economic integration, with obvious consequences for productivity, employment outcomes, dynamism and,

ultimately, growth, both in less prosperous and declining areas and in the very core areas that have often acted as the motors of the economy.

All of this begs the question of whether policies are needed to promote growth and development in underperforming, lagging areas. The answer, on the basis of the above, would seem to be yes. But, and this is the key caveat, the unidimensional, spatially-blind and often top-down policies of the past will not be sufficient to affect change in lagging or falling-behind regions and reduce the gulf between economically core areas and their peripheral counterparts. Policies going forward will need to be strongly rooted in theory and in evidence. They will also, however, have to be sensitive to conditions in and the uniqueness of different territories and should focus explicitly on tapping and realising local potential. Such policies will need to make sure that institutional factors and elements are not overlooked in the planning and operationalisation of strategic approaches to development and, where necessary, that steps are taken to tackle institutional inefficiencies and bottlenecks head-on and within the context of the broader strategy.

Policies and strategies that do so can be more efficient than those pursued in the past. That they will be is, however, far from a certainty; the risk that a particular territorial development intervention evolves into a ‘strategy of waste’ will always remain. It is this risk upon which the remainder of the paper is focused. More specifically, the following analysis weighs ‘strategies of waste’ against ‘strategies of gain’ to identify and understand the key differences between them with a view to ascertain insights into the steps policy-makers can take to maximise the likelihood that territorial development policies fulfil their potential and contribute to the reduction of the territorial disparities in developed and developing contexts alike.

The preceding paragraphs reflect the implicit assumption or proposition upon which the paper is founded: *that policy-makers must be attuned to the pervasiveness and immediacy of, and the consequences associated with territorial inequality and, moreover, that territorial intervention should be geared towards the promotion of growth and dynamism in all areas, lagging ones included.* The paper is, in that respect, sympathetic to calls for the sorts of spatially-

targeted, contextually-tailored policy-making that are premised on the perception that “opportunities for growth exist in every region” and that “all [regions] have the potential to make substantive contributions to economic growth by achieving high levels of productivity” and, moreover, that the unlocking of that potential will be beneficial both to the wellbeing and welfare of the individuals these territories are home to, but the wider (i.e. national) economy most generally (Barca et al, 2012: 139-140).

Our perspective, while not unique, is not universally held. Proponents of spatially-targeted policy-making and the promotion of more geographically even growth are met by opposition from a school of thought, informed primarily by New Economic Geography and urban economics, that proposes that scarce resources are best spent not on promoting growth everywhere, but on the cultivation of dynamism in a select number of places and, relatedly, on ensuring that individuals then have access to these places or reap the benefits, directly or indirectly, of the economic activities they host.<sup>1</sup> These so-called spatially-neutral approaches therefore do little to resolve, and could conceivably entrench or exacerbate, regional disparities. In fact, the World Bank’s 2009 World Development Report (World Bank, 2009), within which policies of this sort are perhaps most strongly advocated, asserts that regional disparities are essentially inevitable and efforts to spread growth are both in vain and inefficient.

Regional inequalities are, however, consequential. They are both potential inhibitors of sustainable economic growth and catalysts of a range of socioeconomic and political ills. Simply stated, they cannot be ignored or treated as inevitable. It is therefore our view, for these and other reasons developed throughout the paper, that spatially-targeted policies that leverage local potential to resolve territorial inequalities and promote growth across the territorial spectrum in a positive-sum way are likely the most appropriate and sustainable way forward.

Our endorsement of place-based, spatially-targeted policies is consistent with recent literature that has advocated for their use to cope with the rising tide of political populism and economic nationalism, that is, in many respects, a product of rampant territorial inequity; Storper

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<sup>1</sup> See Barca et al. (2012) for a detailed discussion of the debate and tensions between spatially-blind/neutral and spatially-targeted policies.

(2018:248), for example, draws the link between regional divergence, not only in terms of income, but opportunity more generally, and changing political preferences and perspectives, noting that “the geographic polarization of opportunity seems to be mirrored in the geographical splits in political attitudes and voting behaviours”. Rodríguez-Pose (2018:206) suggests that stemming the rise of populism and the “challenges [they impose on] current economic and political systems” will necessarily involve promoting economic growth and broad-based development in places that have lagged behind or witnessed prolonged economic decline. This implies providing those living in the so-called ‘places that don’t matter’ with economic opportunity. Both he and Iammarino et al., (2018) suggest, largely because of the suitability of spatially-targeted policies but also because of the likely inadequacies of past policies, that spatially-targeted development approaches are the most appropriate, if not the only way to do so. Rodríguez-Pose (2018:206) also, however, stresses that policies need to be “better” than those pursued in the past. Herein lies the contribution of this paper. The insights we provide and policy implications we derive can inform the design of more efficient, effective spatially-sensitive policies geared towards the promotion of development in underdeveloped, lagging territories and the resolution of spatial inequalities and the challenges they foster.

### ***1.1 Approaches to development in less developed areas***

Policy-makers in developed, emerging and developing economies have long relied on a range of strategic interventions to stimulate economic growth and socioeconomic development. The exact strategic approaches that they have turned to have been, in their specificities, as heterogeneous as the contexts in which they have been pursued. The vast majority of these approaches can, however, be assigned to one of four broad categories in accordance the ‘levers’ they pull to catalyse and promote growth. That is, development policies and strategies of late have tended to be based on one of the following development axes: (1) infrastructure expansion and development; (2) the attraction of inward investment; (3) the promotion of innovation and development of human capital; (4) the cultivation of agglomeration and promotion of physical co-location.

This paper aims to engage with these four broad policy types with a view to, first, assess and comment on the utility of these approaches in different development contexts, and, second, provide an indication of what exactly policy-makers should prioritise in the design and implementation of these strategic actions. It relies on a comparative case-study based qualitative analysis of a handful of development approaches pursued in a diversity of geographic contexts to do so. The overarching objective of the paper is to learn from these policies in order to better understand the steps that need be taken to increase the likelihood that development interventions contribute substantively to local or regional economic growth and development in what are often very heterogeneous contexts across the world.

The cases, and by extension the analysis, are informed by a range of secondary sources. Academic studies and ex-post policy evaluations are employed not to assess or comment on the efficacy of the interventions per se, or pass judgement on whether they have amounted to successes or failures, but rather to form inferences relating to *why* a particular outcome materialised and identify the factors to which their success or failure are attributable. The paper therefore takes a markedly different tact to the quantitative policy analyses that have often preceded it. These econometrically-based exercises excel in offering comprehensive insights into the whether an approach, intervention or policy was successful (or not). They tend not, however, to be adequately (or certainly, as well) equipped to explore the all-important ‘why’. This research, on the other hand, is deliberately structured to provide insights of this nature, into the less tangible, less easily quantifiable but critically important factors behind the success or failure of regional development approaches. It is, in that respect, a useful, if not necessary, supplement to said quantitative exploration.

The cases are presented in considerable detail over the course of two subsections, touching, where appropriate, on the specificities of the interventions, the processes by which they were developed; the actions and instruments by which they were composed; details of their implementation and execution. The outcomes, products and impacts of the actions are addressed as well. The cases are then synthesised and distilled to derive the insights the paper seeks to provide.



The lessons drawn from this review of a series of successful and unsuccessful development strategies are four-fold. First, development strategies informed not by one, but by several complementary development theories, perspectives and schools of thought, and, consequently, composed of multiple related and mutually-reinforcing actions and interventions across development areas tend to deliver better results. Second, strategic approaches to the promotion of economic growth that are solidly grounded in robust diagnoses of the advantages, opportunities, challenges and weaknesses of a city or region – that is specifically-tailored to local realities – are generally more successful. Third, the awareness of where exactly the territory is situated on the development spectrum is crucial, as a territory's level of development and, more precisely, its proximity to infrastructure, human capital and technology frontiers will determine whether there is any scope for investment in or attention to these development axes. Fourth, and finally, the institutional dimension cannot be left un- or even under-addressed in the design and implementation of policy interventions. Oftentimes, the environments in which territorial development policies or strategies are most direly needed are also those plagued by the greatest institutional deficiencies. These shortcomings and inefficiencies manifest themselves in any number of ways and can seriously undermine the returns of even the most robustly and carefully designed territorial development policies. This does not, however, mean that territorial development strategies should not be pursued in institutionally unfavourable environments. Rather, an awareness of institutional barriers and deficiencies will reinforce the returns of development strategies, making it imperative – anywhere but all the more in areas with poor institutions – that capacity building efforts, technical development exercises and institutional reforms are integrated directly into territorial development strategies. This will contribute to ensure that the potential effectiveness of development approaches is not compromised by institutional inadequacies.

These four lessons are supplemented later in the paper with more general guidance relating not to where each of the four policy types of interest can, or should, be employed, but rather to how territorial approaches to development – *irrespective of the development axis or axes to which they are oriented* – should be designed for territories at different points in their development trajectories. We propose that that the strategic approaches employed by differentially developed territories should differ in terms of their relative *complexity* –

conceptualised as a function of the number and diversity of individual interventions – and the *breadth of their strategic scopes* – understood as the narrowness of the development outcomes or objectives by which a strategy is guided – in ways that reflect the nature of the most immediate development challenges with which they are faced. We assert that: (i) the most economically disadvantaged of territories should pursue approaches that are simple in nature and narrow in strategic scope; (ii) that less economically developed territories should opt for simple, but more broadly-oriented strategies; (iii) that emerging territories should rely on broad-based approaches that are, on the other hand, more complex and integrated in nature; and (iv) that more developed areas will need to design strategies that are, again, complex but are narrowly and precisely targeted to affect change.

The remainder of the paper is structured as follows: *Section 2* provides a brief introduction to the four broad types of development policies, and to the various theories of economic growth and development from which they have been derived. Its objective is not to provide an exhaustive review of the theories from which development policy has drawn its inspiration. Doing so is beyond the scope and intention of the paper and, moreover, would prove redundant given the volume of literature already dedicated to doing so. Rather, it is our intention, with this section, to provide the reader with a cursory, easily digestible introduction to relevant concepts, theories and literature. In that respect, it is included to cultivate a base of understanding or point of departure that will ultimately aid in their processing and application of the cases, inferences, conclusions and assertions that follow. *Section 3* reviews a number of the development policies and strategies that have been pursued by a mix of developed, emerging and developing countries in an effort to identify, on a case-by-case basis, the factors to which the success (*Section 3.2*) or failure (*Section 3.1*) of each is most readily attributable. It will consider, among other things, how the design of the policy/strategy, its implementation or execution, and the socioeconomic and institutional context within which it was pursued have mediated or shaped its outcomes. *Section 4* compares ‘strategies of waste’ to the ‘strategies of gain’ presented in the section that precedes to derive and provide a series of policy implications. *Section 5* contemplates the nature of the development challenges by which different types of territories are faced and proposes a taxonomy of development strategies that features four broad categories of

interventions each of which is more (or less) contextually suitable for territories at different points on the ‘development spectrum’. *Section 6* concludes.

## ***2. Theories of economic growth and development and the evolution of development policy***

### *Infrastructure-driven development, infrastructure-oriented policies, and the neoclassical growth theory*

Few development strategies have been as ubiquitously employed as infrastructure-oriented development policies.<sup>2</sup> Infrastructure-oriented approaches to development find their conceptual underpinning in the hitherto dominant neoclassical growth theory (e.g. Solow, 1956; Swan, 1956; Aghion and Howitt, 1998; Barro and Sala-i-Martin, 2004). In a neoclassical framework, economic growth is understood to be governed by the relative availability of different factors of production: technology, physical capital and labour. However, technology and labour are considered exogenous factors, meaning that growth is fundamentally achieved by increasing physical capital, often proxied by infrastructure. Infrastructure is conceptualised either as a factor of production itself (i.e. as ‘public capital’) *or* an influence on the productivity of other factors of production (e.g. Romp and de Haan, 2007). Investing in and increasing a region’s stock of infrastructure is therefore thought to impel economic growth directly (i.e. as an input to processes of economic growth) or indirectly, by facilitating the more efficient exploitation of other factors of production via the reduction of transaction and other costs (Servén, 2010: 1).<sup>3</sup>

Guided by the perception that a sufficiently developed network of physical – transportation, power, telecommunications, among other types – infrastructure is a prerequisite for development (e.g. Calderón and Servén, 2004) and by the expectation that infrastructure

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<sup>2</sup> Dillinger (2007:29), for example, refers to infrastructure-led initiatives as “time-honored [approaches] to regional development”. Similarly, Barca et al. (2012:137) assert that “development policies have until now generally remained instruments for the provision of infrastructure – roads, railways, sanitation, water and the like – and state aid”.

<sup>3</sup> See Agénor and Moreno-Dodson (2006) or Straub (2007) for a more nuanced and developed discussion.

impinges on factors mobility and productivity, policy-makers have primarily resorted to devising and implementing strategies that rely on the provision and upgrading of various types of physical infrastructure as a key investment – if not there key investment – for economic growth.

### *Inward investment strategies and growth pole theory*

A second category of development strategies includes the inward investment-oriented strategies that were borne out of the ‘growth pole theories’, most readily associated with the work of Perroux (1950, 1955) and Hirschman (1958).<sup>4</sup> Both Perroux and Hirschman observed that economic growth is not evenly distributed across space and that it occurs in and, in turn, diffuses out from a relatively small number of locations – ‘growth poles’. This observation has informed a number of policies that rely on the channelling of resources to existing or newly established agglomerations of economic actors as the most efficient way to promote economic growth and development in lagging regions. This approach entails targeting areas with greater economic potential within a region or country, whose success would, in time, yield more geographically widespread benefits (Parr, 1999). Drawing on the perception in growth pole theories that the dynamism of these so-called ‘poles’ or ‘points’ is most readily attributable to the hosting of a leading or ‘propulsive’ (Perroux, 1955) industry or set of industries, inward investment and growth pole policies have been active in pursuing the attraction of large, often more productive and technologically advanced firms (and by extension the industries to which they belong) to less developed regions with a view to lay the foundation for the emergence of a growth pole capable of catalysing and supporting region-wide economic success and dynamism (Parr, 1999).

Special economic zones, industrial parks and science and technology parks are perhaps the most notable of the more specific interventions that fall under the umbrella of ‘inward investment-oriented strategies’. At the heart of any inward investment-oriented initiative, however, irrespective of the guise in which it exists, is the perception that large, especially dynamic firms operating in ‘propulsive’, high-potential industries are catalysts for development and, moreover, that the attraction of one or more of these firms to a lagging region, via the

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<sup>4</sup> See Parr (1999) for a comprehensive review of the origins and development of growth pole-types strategies.

provision of fiscal and other incentives, can often be sufficient to reverse its economic fortunes and ignite self-reinforcing processes of economic growth.

### *Human capital, knowledge, innovation and the endogenous growth theory*

The development of the endogenous growth theory gave rise to a set of policies and strategies that are markedly different from the infrastructure and inward investment-oriented approaches that preceded them (e.g. Romer, 1986, 1990; Lucas, 1988; Aghion and Howitt, 1992; Grossman and Helpman, 1994). The endogenous growth theory, by endogenising technology and human capital, brought human resources, education and skills (Lucas, 1988) and knowledge, technological change and innovation (Romer, 1986; Aghion and Howitt, 1992; Grossman and Helpman, 1994) to the fore in development thinking. Policy-makers, following suit, became increasingly concerned with the promotion of innovation and the provision of education and training, with the expectation that knowledge-intensive, innovative activities and an able labour force especially in less-developed regions could catalyse economic growth and facilitate the reversal of their economic fortunes.

Within this framework, the setting of regional R&D expenditure targets and initiatives to increase public and private R&D investment and stimulate the generation of knowledge has been a favoured strategic approach for the promotion of innovation (World Bank, 2010). More holistic, systems-of-innovation-type policies that match more traditional policy instruments with a focus on the encouragement of interactions, cooperation and collaboration between economic actors to achieve this end have also become increasingly common in recent years (e.g. Tödtling and Trippl, 2005; World Bank, 2010; OECD, 2012). Moreover, policy-makers have relied mainly on general investment in all levels of education and on a range of more-narrowly targeted skills-development initiatives, vocational schemes, lifelong-learning initiatives, and other training programmes to promote human capital development (e.g. OECD, 2015).

### *Cluster-based development policies and new economic geography and urban economics*

The final type of policy intervention considered here emerged from a number of theoretical perspectives that explore and, in turn, underscore the importance of the co-location of economic actors and activities for productivity, innovation and, ultimately, economic performance and growth: cluster theory, new economic geography and urban economics. Despite considerable differences between the three strands, a central premise of all of them is that the agglomeration of economic activities – and, consequently, a high density of economic actors in any particular place – gives rise to a host of productivity-enhancing externalities from which co-located actors benefit (e.g. Porter, 1990; Krugman 1991; Fujita et al., 2000; Fujita and Thisse, 2002; Duranton and Puga, 2004; Storper and Venables, 2004; Glaeser, 2010). Co-location is understood as a facilitator of interactions, cooperation and collaborations between physically-proximate economic actors. It enables, *inter alia*, the sharing of resources, the establishment of efficient input-output linkages, and the realization of economies of scale and scope. Co-location also supports the transfer and exchange of knowledge, information and ideas within (i.e. Marshall-Arrow-Romer spillovers) and between (i.e. Jacobian spillovers) sectors and industries – and, the economic actors that compose them – that is thought to foster and support the innovation and technological progress that spur economic growth.

Development policies following these strands have paid particular attention, on the one hand, to the generation and/or consolidation of different types of clusters – including related types of intervention, such as science and technology parks, innovation parks/hubs, industrial parks/clusters and the like – while, on the other, they have sought to promote the more dynamic urban centres within specific countries, which often coincide with larger and more dense agglomerations. Cluster-based and new economic geography and urban economics related policies adopted many different forms, but often involve, in different guises, the development of infrastructure, the provision of incentives to encourage and facilitate the agglomeration of economic activity, and actions to promote interaction and the emergence of networks. Different types of cluster policies and the pursuit of agglomeration have become popular with policy-makers as viable ways to spur economic growth and development (e.g. Martin and Sunley, 2003).<sup>5</sup>

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<sup>5</sup> Martin and Sunley (2003:23), for example, assert that “few other ideas can begin to rival the current popularity of the clusters notion amongst economic practitioners and national and regional policy communities”.

### ***3. Comparing ‘strategies of waste’ and ‘strategies of gain’***

Development strategies all over the world and, in particular, in developing and emerging countries, are frequently the children of different economic growth and development theories. Normally one of the aforementioned strands informs and structures the type of development intervention, leading to policies that put the emphasis, depending on the dominant strand, on infrastructure building, growth poles, skills and innovation, or clusters and agglomeration. Most development interventions usually remain firmly embedded in one approach and rarely combine elements from different theories or, whenever they do so, subjugate other types of intervention to the main development axis promoted by the chosen theory. The result is generally highly unbalanced forms of development intervention, which stress one development axis above all others as the key driver for economic growth and employment generation.

In this section, we will use specific examples to overview these policies at work. We will underscore how an excessive focus on one development axis often results, depending on local conditions, on what can be called strategies of waste, that is, development interventions that leave the treated territory in the medium- and long-run in a similar or worse condition than before the intervention, despite sometimes having short-term positive effects. We will also argue that, by contrast, interventions that combine different development strands and that adapt the resulting strategy to the characteristics and needs of each territory, are more likely to succeed in yielding medium- and long-term sustainable economic outcomes. These are what we call strategies of gain.

The distinction between strategies of gain and waste is an admittedly binary one. In practice, development approaches, including the ones documented in the following subsections, are rarely complete successes or failures (though the latter is conceivably more common than the former). At a point, however, especially in an analytical exercise like this, a line must be drawn and cases classified in a manner that facilitates comparison and the eventual formulation of inferences relating to what differentiates one group from the other. The classification of our chosen cases as successes or failures (i.e. as strategies of gain or waste) is a reflection the

tangible and, where relevant less tangible, development impacts and outcomes they yielded and is informed by the perception and apparent consensus (apparent in the literature by which the cases are informed) regarding the efficacy of each of the strategic approaches.

Several factors were considered when selecting the cases presented in the following subsections. First, the examination of each of the aforementioned policy types is absolutely necessary for an exploration of this nature where the concern is not necessarily identifying which narrow policy type is best, but rather identifying under what conditions a given strategy should be pursued or what steps can be taken to maximise the likelihood of a policy delivering on its objectives. Accordingly, infrastructure-, inward investment-, innovation and human capital- and cluster-based interventions all feature in the proceeding sections. Second, we, very deliberately, sought cases from a diversity of geographies and development contexts and, where applicable, with different sectoral or industrial foci. While the selection of cases from a single geography, context or industry could conceivably serve to ‘control’ for narrow, specific contextual factors that condition the success or failure of development approaches, doing so would preclude (i) the illustration and exploration of the diversity of challenges by which development policy, broadly defined, can be faced; (ii) the unearthing and analysis of a range of, in some cases not immediately obvious, best practices; and (iii) ultimately, the formulation of the ‘higher-level’, more widely generalisable inferences, lessons and conclusions that the paper seeks to provide. Second, we focused on development interventions. The third consideration was a practical one. For us to comment on *why* a particular policy or strategy was or was not effective (i.e. amounted to a strategy of gain or waste), we needed cases where a concerted effort had been made both to document in suitable detail both the specificities of the intervention – including its motivations, overarching aims and objectives; its leaders, stakeholders, and other relevant parties responsible for or affected by its outcomes; the process by which it was designed; the steps and actions by which it was/is composed; and the way in which it was implemented and executed – and monitor, evaluate and report the immediately tangible outputs and impacts as well as the more general, less tangible development outcomes.

### ***3.1. Strategies of waste***



The growth and development policies and strategies highlighted in *Section 2* have been implemented in a diversity of contexts. Some have found success and served as catalysts for meaningful economic growth and development. Many others, however, have not. This latter category of approaches can be referred to as strategies of waste. Stated simply, strategies of waste are, for the purposes of this document, development approaches that achieved little in the way of economic development and, ultimately, amounted to not much more than a waste of scarce resources. Strategies of waste, as the subsections that follow confirm, exist in any number of forms and are by no means confined to one particular theoretical approach, geography, or context.

### *The limited returns to transportation infrastructure investment in the European Union*

The sorts of infrastructure-oriented development strategies that emerged from neoclassical theories of economic growth and development have been pursued with particular vigour in developed and developing countries alike. Few policy-making bodies, however, have displayed a greater, more sustained commitment to and belief in infrastructure investment as a means to impel economic growth and development than the European Union.

Adhering to the notion that “efficient and sustainable transport services and infrastructure are vital to exploiting the strengths of all EU regions and supporting the internal market thereby facilitating economic and social cohesion” (European Commission, 2014: 3), authorities have prioritised investment in infrastructure and have channelled significant amounts of resources towards a wide array of intra- and inter-regional transportation infrastructure-oriented projects. In the 2014- 2020 funding period alone, the European Regional Development Fund and the European Union Cohesion fund are set to spend €71.5bn on “a range of investment priorities to promote sustainable transport and remove bottlenecks in key network infrastructures”.<sup>6</sup> Another €24.05bn will be spent on a series of projects to develop and expand the continent’s inter-

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<sup>6</sup> *Network infrastructure in transport and energy*: <https://cohesiondata.ec.europa.eu/themes/7>

regional transportation infrastructure network via the Connecting Europe Facility, a funding vehicle that operates principally at the European level.<sup>7</sup>

Increases, especially of this magnitude, in transportation infrastructure expenditure should, according to neoclassical growth theory augment regional capital-to-labour ratios and lead to the proportional improvements in productivity that are anticipated to drive economic growth and enhance economic dynamism.

Such predictions do not, however, seem to have to come to fruition (e.g. Cappelen et al., 2003; Rodríguez-Pose and Fratesi, 2004; Crescenzi and Rodríguez-Pose, 2012). Considerable investment in transport infrastructure in the less developed regions of the European Union has not yielded the expected results. In a cross-regional macroeconomic investigation into the relationship between regional economic performance and regional transportation infrastructure endowments, Crescenzi and Rodríguez-Pose (2012: 489) find little evidence of a significant link between regional infrastructure endowments and economic performance, suggesting that the European Union's infrastructure-centric approach to development may be more akin to a strategy of waste than to one of significant gain. This, coupled with evidence of significant relationships between economic dynamism and a host of other socioeconomic factors and influences, has raised doubts about the sensibility of the European Union's singular concern for transportation infrastructure. Some voices have even advocated for a revaluation of the privileged position that has traditionally been assigned to infrastructure expansion in the European Union's strategic efforts to promote economic growth and cohesion (e.g. Crescenzi and Rodríguez-Pose, 2012).

There are a multitude of factors to which the limited returns to infrastructure spending in the European Union are attributable. Chief among them, however, is likely that infrastructure investment is subject to diminishing returns and moreover that there is a 'threshold' – exceeded by the European Union – beyond which investment in infrastructure is unlikely to yield much in the way of economic development (e.g. Canning and Pedroni, 2004; de la Fuente, 2010; Crescenzi and Rodríguez-Pose, 2012). Although well-targeted expenditure that alleviates bottlenecks or addresses specific inadequacies can generate considerable economic returns, even

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<sup>7</sup> *Connecting Europe Facility (CEF) Transport*: <https://ec.europa.eu/inea/connecting-europe-facility/cef-transport>

in environments characterised by well-developed infrastructure endowments, once a territory's most fundamental infrastructure needs are met – as is the case in the majority of the regions of the European Union, including many of its least developed areas – indiscriminate expenditure on the expansion of its infrastructure network is more likely to result in duplications and redundancies than in increases in productivity and economic dynamism.

Relatively poor institutional quality, especially in many of the European Union's less developed regions, is also to blame for the limited returns to transportation infrastructure expenditure (e.g. Crescenzi et al., 2016). Self-interested politicians and decision-makers operating in weaker institutional contexts may respond to perverse incentives and elect to channel resources towards projects may give way to immediate private or electoral returns but are ultimately not sustainable nor like to produce lasting benefits in the medium- or longer-term. Many of the 'white elephant' projects that are scattered across the European Union are, in part, attributable to this phenomenon (Crescenzi et al. 2016: 559).

The Ciudad Real Airport in Spain is a prototypical example of a 'white elephant'. The airport, which opened in 2008, was supposed to provide a much-needed boost to the local economy in the form of 6000 direct jobs.<sup>8</sup> Built at a cost in excess of €1bn, the airport, however, sat largely idle until 2012 when bankruptcy forced its closure.<sup>9</sup> The Toledo-Albacete-Cuenca high-speed rail connection represents a similarly misguided expenditure of resources on infrastructure development. The establishment of a high-speed rail line linking the Spanish cities of Toledo, Albacete and Cuenca – with a combined population of 310,000 – managed to reduce travel time between Toledo and Albacete from two hours and 28 minutes to two hours and five minutes and was seen as way to increase the connectedness and, in turn, the economic dynamism of the three provincial capitals linked by the new rail connection. The line opened in December of 2010, but concerns about its financial unsustainability led to its closure just seven months

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<sup>8</sup> *The white elephants that dragged Spain into the red*: <http://www.bbc.co.uk/news/magazine-18855961>

<sup>9</sup> *Spain's Ciudad Airport sold at auction for €10,000*: <http://www.bbc.co.uk/news/world-europe-33578949>

later, in July 2011. The reason: the service was used by an average of nine people per day but cost €18,000 a day to operate.<sup>10</sup>

These two cases, and other similar ‘white elephants’ exemplify both the notion of limited returns to infrastructure spending beyond a certain minimum threshold – particularly in weak institutional conditions – and the dangers associated with pursuing projects with little more than their most-immediate impact in mind. Neither project addressed or targeted a particular bottleneck nor debilitating infrastructure shortage; if anything, they provided duplications of pre-existing and not congested services.<sup>11</sup> It is difficult, for example, to comprehend why a provincial capital with a population, at the time, of 75,000 would need an airport with a 4 km runway and the capacity to host 10m passengers a year especially when Madrid’s Barajas International Airport was less than 190 kilometres away. Similarly, a time saving of 23 minutes on a route that was ultimately used by less than 10 passengers per day does not seem overly consequential. Neither project was sufficiently informed or guided by even the most basic background research that could, in theory, justify their existence, meaning that a substantive contribution to economic growth and development was just a pipedream. The real justification for both projects was nothing more than short-term electoral gain plus, possibly, decision-makers aiming to reap the fruits of corruption (Crescenzi et al., 2016).

#### *Inward-investment strategies in the emerging world: Special economic zones in Peru<sup>12</sup>*

The perception that the formation of a single especially dynamic agglomeration of economic actors and activity – a ‘growth pole’ – is sufficient to trigger economic growth and development across the entirety of even the most underdeveloped regions has led to the proliferation of a variety of inward investment-oriented strategies across the developing and emerging world (e.g. World Bank, 2008; Rodríguez-Pose and Hardy, 2014). The track record of these inward investment-oriented approaches – most of which have assumed the form of special

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<sup>10</sup> *Spain cuts high speed ‘ghost train’*: <http://www.telegraph.co.uk/news/worldnews/europe/spain/8603392/Spain-cuts-high-speed-ghost-train.html>

<sup>11</sup> Albalade et al. (2015) provide a detailed discussion of the oversupply of infrastructure in the Spanish context.

<sup>12</sup> The proceeding discussion is based on a World Bank (2016a) review of Peru’s experience with special economic zones.

economic zones or industrial zones or parks – has, however, been mixed, when not outright discouraging (Farole and Akini, 2011: 4). Recent empirical investigation has, in fact, provided a clear indication that many of the special economic zones that have been established in emerging contexts have failed as catalysts for more widespread economic growth and development (Frick et al., 2018). This has, in turn, bred concerns about the general effectiveness of the special economic zone programmes that have been pursued with particular enthusiasm across the developing and emerging world and, in turn, about the sensibility of the continued pursuit of

investment-oriented strategies in such environments (Frick et al., 2018).



*Figure 2 - Special economic zones sites in Peru; Authors' elaboration*

Peru is but one of the many countries that have attempted to establish ‘growth poles’ in its lesser-developed, lagging areas in hopes that the expected dynamism and success of these agglomerations would eventually spread to other lagging behind territories in the country. Peru’s engagement with special economic zones is a reasonably long, but unfortunately not particularly successful one. The passing of Law 28519 in 1996 led to the establishment of three special economic zones in the cities of Ilo, Matarani and Tacna, respectively.

Envisioned by authorities as vehicles for the promotion export-led growth and economic competitiveness and as “economic growth poles in their host communities” (World

Bank, 2016a: 23), four more zones have since been proposed and ‘designated’. Of the country’s seven designated zones, however, only four are operational, and moreover, only one of these can lay any claim to have been mildly successful in achieving its economic development goals (Figure 2). Paíta CETICOS, which is the largest (940ha) and also, because of its proximity to a

port, the most favourably geographically situated zone in Peru, is considered by Peruvian authorities “to be the most successful of the country’s zones from an economic standpoint” (World Bank, 2016a: 36). The zone has led to the creation of 1200 jobs and has supported an increase in trade and exporting, much of which is attributable to SMEs. The development impacts of the other three zones range from modest (Tacna Free Zone) to virtually non-existent. (Matarani CETICOS and Ilo CETICOS).<sup>13</sup> Why have the outcomes of and returns to the Peruvian zone programme fallen so far short of expectations? While each of the country’s zones have suffered by contextually-unique challenges and obstacles, the underperformance of the programme as a whole is attributable to a number of factors, shortcomings and inefficiencies that fall into one of three broadly defined categories: (1) planning failures; (2) institutional failure or (3) failures in execution.

The planning failures were twofold. First, it was concluded that the country’s zones were established in the ‘wrong areas’. That is, because the zones were conceived and envisioned as catalysts for regional economic development, they were established – without sufficient concern for *ex ante* local conditions, characteristics and attributes– in lagging-behind regions of the country. This “ad hoc” (World Bank, 2016a: 45) selection process led, on the one hand, to the establishment of zones in less-economically dynamic territories with underdeveloped socioeconomic fabrics. This inhibited their capacity to (i) attract and sustain economic activity and to (ii) capitalise on that activity and push region-wide socioeconomic development *and*, on the other, a failure to establish zones in “more promising” intermediate or even more economically advanced areas where the development impacts of a zone may have probably been greater (World Bank, 2016a: 43).

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<sup>13</sup> The development impacts of Tacna Free Zone, which is situated near the Chilean border in the southern part of the country, have been more on the more modest end of the spectrum. There is evidence to suggest that the zone has provided a boost to the tourism and hospitality sectors in Tacna (World Bank, 2016a:33). The zone has, however, suffered from a fair share of logistical, institutional, infrastructural and other challenges. Moreover, the zone remains domestically-oriented and has not served as a facilitator of trade and export-growth nor has it served as a particularly powerful engine for employment creation. The development impacts of the Matarani CETICOS have been even more underwhelming. The World Bank (2016a:39) maintains that “with its limited number of investors and a lack of focus on the real potential investment opportunities, it cannot be said that the [Matarani CETICOS] has truly had any significant impact on the development of its host region”.

Second, insufficient attention was paid to the “country’s comparative advantages, strategic opportunities and development opportunities” (World Bank, 2016a: 11) when establishing the zones’ sectoral foci. This resulted in mismatches between the activities that were actually prioritised by authorities and the endowments, advantages, and opportunities by which the zones and the regions in which they are situated are characterised. Overall, there was a general failure to pursue “the most promising economic activities” (World Bank, 2016a: 48) that could have perhaps offered a greater development potential.

The programme’s institutional failures are also twofold. First, Peru’s special economic zone programme is composed of *two* discrete, but markedly similar, zone legal ‘regimes’ (stemming from two separate laws that were passed to facilitate the development of the country’s special economic zone strategy). The CETICOS zones exist under the first regime. The second regime is associated exclusively with the Tacna Free Zone. The consequences of this are numerous. Firms, investors and other economic actors may be deterred by unnecessarily high degrees of administrative and bureaucratic complexity, stemming from the need to understand and navigate the two regimes (World Bank, 2016a: 49). The co-existence and consequent need to monitor and enforce what are “from a legal and administrative perspective [similar regimes]” (World Bank, 2016a: 50) also likely represents an inefficient deployment of scarce financial and human resources.

Second, responsibility for the regulation of the zones is shared, almost exclusively, across several subnational authorities; “[little] regulatory authority is exercised at the national level” (World Bank, 2016: 53). This highly fragmented regulatory framework not only compromises the cohesion and effectiveness of the overall regulatory governance regime, it can also increase the compliance costs incurred by firms. Fragmented frameworks like these tend also to be prone to inefficiencies, duplications and forgone synergies.

The failures that fall under into the final category relate to the way in which the programme has been pursued and operationalised. The private sector, for one, has been insufficiently engaged in the programme as a whole. The underperformance of the zones, and the related infrastructural deficiencies by which they have been plagued are attributable, at least in

part, to the development, management and operation of these zones almost exclusively by public-sector bodies. These bodies can be less efficient and experienced than and often lack the same incentives as their private sector counterparts.<sup>14</sup> These infrastructural shortages are a sign of public sector failure and are viewed as a “significant constraint to growth” (World Bank, 2016a: 68) and to the dynamism and overall performance of the zones.

Additionally, insufficient attention was paid to the ensuring that stocks of skilled labour were sufficiently developed so as to meet the needs of the zones and the firms that occupy them; the shortages of skilled human capital by which Peru is characterised act as yet another deterrent to productive activity and investment (World Bank, 2016a: 72).

Finally, it appears that the financial instruments and tools that authorities elected to employ and the measures they relied on to incentivise firms, while generous (i.e. income and other tax exemptions), did not necessarily mitigate the specific issues that deter investment or hamper firm (and, by extension, zone) performance (World Bank, 2016a). Simply stated, there was an insufficient degree of coherence between the issues that needed to be addressed and the tools that policy-makers employed to do so.

### *R&D-oriented innovation policy in the European Union*

Knowledge, technological development and innovation are, according to the endogenous growth theory, preeminent drivers of economic growth and dynamism. Promoting innovative activity is increasingly perceived as a way to lay the foundations for the increases in productivity that are effectively prerequisite to economic growth, especially of more advanced economies. Therefore, knowledge-intensive, innovative activity, and the shoring up of the innovative capacities of lagging-behind regions in particular, has long been a priority of the European Union.

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<sup>14</sup> A related consequence of the failure to engage the private sector in the operation of zones themselves meant that public bodies had to assume responsibility not only for their management and operation, but also for their regulation and oversight. This means that (i) authorities may have been overburdened by tasks for which, in some cases, day not have the competencies to perform and (ii) the failure to separate responsibility for operation from that for regulation has often resulted in conflicts of interest (World Bank, 2016a:58).



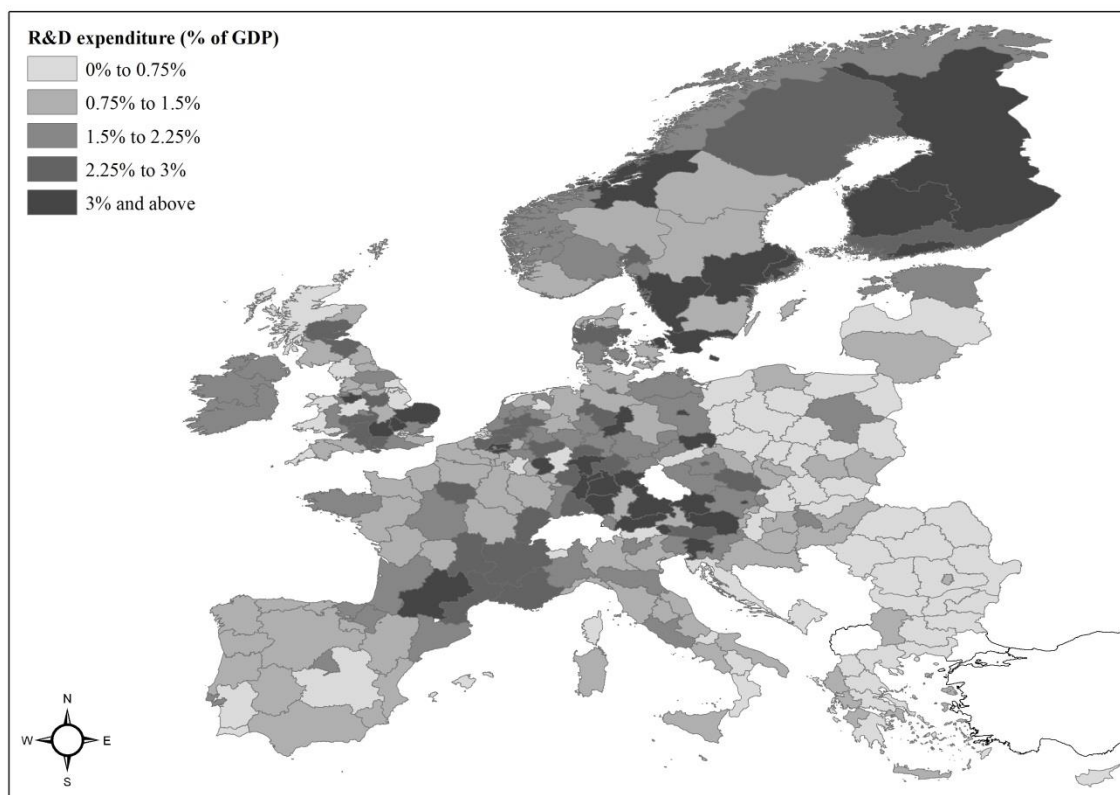
The most concerted effort made thus far by the European Union in this direction has involved the establishment and pursuit of research and development (R&D) expenditure targets (Rodríguez-Pose and Wilkie, 2017a). Shortly after the release of the Lisbon Strategy (2000-2010), which detailed how the European Union would evolve into “the most competitive and dynamic knowledge-based economy in the world” (European Commission, 2010: 21), an ‘action plan’ was released in which it was established that all member states would aim to increase levels of R&D investment to 3 percent of GDP by 2010<sup>15</sup> – a target that has since been readopted the European Union’s Europe 2020 economic growth and development plan. There is little question that the establishment of this target has given way to greater expenditure on R&D activities across the European Union. That said, there is still considerable progress to be made if the 3 percent target is to be achieved.<sup>16</sup>

R&D-oriented innovation and growth strategies, the European Union’s included, are the direct by-product of more traditional, linear conceptualisations of the innovative process (e.g. Maclaurin, 1953; Grilliches, 1979) in which innovation is understood as a direct consequence of investment in, and the generation of, new knowledge. Socioeconomic and institutional factors tend not feature in these ‘linear models of innovation’, which simply predict that greater R&D investment will result in increases in innovative output irrespective of where and under what conditions that process transpires. This neglect of, and related failure to integrate complementary strategic interventions to address contextual conditions, features and characteristics is an important reason why policy approaches inspired and guided singularly by linear conceptualisations of innovation have often failed to stimulate innovation and innovative-driven economic performance in ‘innovation-averse’ (Rodríguez-Pose, 1999), economically disadvantaged territories.

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<sup>15</sup> The 3% objective: brief history. Investing in European Research – Towards 3% of GDP. Retrieved from: [http://ec.europa.eu/invest-in-research/action/history\\_en.htm](http://ec.europa.eu/invest-in-research/action/history_en.htm)

<sup>16</sup> Average R&D expenditure as a percentage of GDP for European Union Member States in 2015 was 1.65%. European Aggregate R&D expenditure as a percentage of Europe’s Aggregate GDP was 2.03% in the same year (Eurostat Statistics on Research and Development, obtained on March 7, 2017).



*Figure 2 - R&D expenditure in the European Union; Authors' elaboration*

Europe's lagging regions display, on balance, a relatively weak facility for the translation of R&D expenditure and knowledge into innovation and economic performance (e.g. Oughton et al., 2002; Sterlacchini, 2008; Aristonvik, 2012; Charlot et al., 2012). Moreover, recent quantitative analysis has indicated that the outcomes of the most recent increases in the R&D effort in Europe's less-developed areas have not delivered the expected returns (Rodríguez-Pose and Wilkie, 2017a). The Lisbon Strategy-inspired increases in R&D expenditure are found to be associated with a modest increase in the generation of innovative output, though closer examination reveals that this positive correlation is driven entirely by private sector's knowledge generation efforts. In many European less developed regions innovative capacities are all but completely detached with the public R&D expenditure that constitutes a large share of total R&D commitment. The concerted R&D efforts of Europe's lagging regions have not necessarily been linked to improvements in regional economic performance or decreases in unemployment.

The exact factors to which the underperformance of this unidimensional policy approach is attributed are numerous. Many, if not all, however, relate to the fact that R&D expenditure was prioritised indiscriminately across the entirety of the European Union with little if any, consideration for the way in which the characteristics, attributes and conditions of its heterogeneous regions might affect their capacity to mobilise and productively exploit it (Rodríguez-Pose and Wilkie, 2017a).

A neglect of the aforementioned characteristics, attributes and conditions represents a failure to consider the very factors that are understood to condition a region's capacity to absorb, mobilise and ultimately exploit R&D expenditure and knowledge. That is, empirical analyses of the European context have revealed that the process by which knowledge is transformed into economic performance is strongly mediated by the socioeconomic and institutional characteristics of the region in which it takes place (e.g. Bilbao-Osorio and Rodríguez-Pose, 2004; Crescenzi, 2005; Charlot et al., 2012; Rodríguez-Pose and Di Cataldo, 2015). A key implication of this is that any weaknesses in a region's socioeconomic or institutional fabric are anticipated to erode its capacity to capitalise on R&D investment or activity. This has seriously compromised the capacity of many of Europe's lagging regions to efficiently mobilise pre-crisis increases in R&D investment and activity and translate the knowledge they were anticipated to generate into innovation and, in turn, economic dynamism and development.

In short, the overall ineffectiveness of the recent R&D drive has been a function of the insufficient attention paid by policy-makers to other factors that condition the relationships between knowledge and innovation and, relatedly, innovation and economic performance.

#### *Supply-side approaches to the development of human capital: learning from the Filipino experience*

The human capital development initiatives and strategies pursued by developing and emerging countries, especially in the latter part of the 20<sup>th</sup> century, displayed a marked focus on the provision and in turn, *supply* of skills and training (e.g. di Gropello, 2006; ELLA, 2013; Phan and Coxhead, 2014). Actions in this direction were viewed, in accordance with the prevailing

endogenous theories of economic growth (e.g. Lucas, 1988), as viable ways to increase the skills and capabilities, and, in turn, the productivity of individuals and the regions they lived in. There was, however, an equally ubiquitous tendency to disregard the way and extent to which educated and/or skilled persons would be absorbed by the labour market. Herein lies the problem. Skilled individuals contribute to economic growth via their engagement in productive activity. However, the absence of a concerted effort to ensure opportunity existed for them to do so is what would prove to be the undoing of what were insufficiently integrated, unidimensional supply-oriented policies. The Filipino experience is, in that respect, a cautionary tale; it exemplifies the dangers associated with and the challenges that can arise from ill-conceived and insufficiently integrated supply-side human capital development strategies (Phan and Coxhead, 2014).

As of 2010 the Philippines had 470 nursing training programmes (Dimaya et al., 2012: 4) that, by 2006, were already producing an average of 20,000 nurses a year (Lorenzo et al., 2007: 1409). A robust training system, such as the one described, could have been sufficient to address the healthcare needs of the large Filipino population. However, despite having trained a large number of nurses over a considerable amount of time, the Philippines still suffers from pronounced shortages of nurses that are attributable to the large scale, almost systematic emigration of Filipino-trained nurses, who find limited well-paid opportunities at home.

This ‘brain-drain’ phenomenon, which dates back to the early 1970s (Albuero and Abella, 2002), is by no means confined the healthcare sector; it affects a diversity of sectors and industries and has transformed the Philippines into one the world’s “leading labour exporting [countries]” (Dimaya et al., 2012). In the case of nurses,<sup>17</sup> brain-drain-induced shortages contributed to the complete closure of 200 hospitals and the partial closure of 800 more between 2003 and 2005 alone (Lorenzo et al., 2007: 1414). They have also been linked to the marked increases in patient to nurse ratios that have been observed in recent years (Lorenzo et al., 2007). The emigration of more experienced and qualified nurses is even anticipated to result in higher

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<sup>17</sup> Lorenzo et al. (2007:1408), for example, note that nurses [constitute] the largest group of professional workers abroad”. Similarly, Finch (2013:E557) highlights that “between 2004 and 2010, nearly 72,000 nurses were newly employed or rehired abroad”.

numbers of nursing positions being filled by younger, less-experienced nurses (Dimaya, 2012: 4).

Qualitative research has revealed that the brain-drain is driven by a host of ‘push’ and ‘pull’ factors that motivate Filipino nurses to actively seek employment opportunities abroad. Many of these factors, however, relate to or stem from an undersupply of employment opportunities of a quality that is comparable to those available to Filipino-trained nurses elsewhere in the world.<sup>18</sup> The brain-drain is, in effect, a demand-driven, or at least demand-related, problem (e.g. Phan and Coxhead, 2014).

Nurse shortages in the Philippines are attributable not to an unavailability of training or, relatedly, an inability on the behalf of the country’s education and training system to meet the demands of the healthcare sectors, but rather to adverse demand-side conditions. The failure by successive Filipino governments and the private sector alike to address the lack of local opportunity has driven Filipino-trained nurses to pursue, better paid, higher quality employment opportunities elsewhere, giving rise to a situation where any benefits that could have conceivably arisen from a what would seem a reasonably mature and well-developed education system are essentially forgone.

#### *Science and technology parks in Greece: clustering for the cultivation of innovation<sup>19</sup>*

Regions the world over have, often hoping to cultivate the next Silicon Valley, Bangalore or Hsinchu, turned to cluster-based development policies and strategies. Few, however, have managed to do achieve considerable local admit success. Instances of failure are more ubiquitous

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<sup>18</sup> The ‘push’ factors identified by Lorenzo et al. (2007:1412) include: “low [salaries] at home, no overtime or hazard pay, poor health insurance coverage; work overload or stressful working [environments], slow promotion, limited opportunities for employment [and] decreased health budget”. The ‘pull’ factors highlighted include: “higher income, better benefits and compensation packages [abroad]; lower nurse to patient ratios, more options in working hours, [and] chances to upgrade nursing skills” (Lorenzo et al., 2007:1412. Dimaya et al. (2012:3) identify a similar set of factors; they also note that an abundance of “job vacancies [abroad] due to local shortages” and a consequent greater ease finding gainful employment often entice them to emigrate.

<sup>19</sup> This section draws on the work of Tsamis (2009).

than the success stories that seem the ‘exception to the norm’ (Lerner, 2009; Gaisford et al., 2010).

Greece is among the many countries whose cluster policies, initiatives and efforts have yielded outcomes that have fallen short of expectation. Cluster-based development initiatives in the Greek context have in recent years assumed the form, as they have in countless other contexts, of science and technology parks (e.g. Rodríguez-Pose and Hardy, 2014). Strategic actions in this direction represent concerted efforts to fabricate environments that support and facilitate the sort of interactions, collaborations and relationships that underpin knowledge-intensive, innovative processes. The eventual dissemination of the ideas, knowledge and innovations that emerge from these processes to actors both within and outside of the park is anticipated to contribute to the upgrading of the innovative system as a whole and, in turn, foster local economic dynamism.

Paradoxically, identifying and analysing cluster policy failures has proven difficult; Gaisford et al. (2010: 317) note that “researchers appear to have been more interested in pursuing insights from successful clusters rather than chronicling failures [and] communities with unsuccessful cluster are hardly likely to publicise the fact because of the damage it may do to their future development prospect.” Tsamis’ (2009) exploration of the evolution of two Greek science and technology parks – Thessaloniki Technology Park (TTP) and the Science and Technology Park of Crete (STEP-C) – and of the factors behind their limited success relative to expectations represents one of the few exceptions to this trend.

The establishment of TTP and STEP-C were motivated by similar sets of objectives. Both parks sought to: promote the emergence and growth of innovative firms; foster entrepreneurship; facilitate the sharing, dissemination and transfer of knowledge, technology and innovation; and, above all else, catalyse local economic growth and development (Tsamis, 2009: 152).

The environments in which the parks were constructed were not especially conducive or well-suited to innovative activity. Neither region displayed a significant, if any, measureable innovative capacity; levels of R&D expenditure in both contexts lagged well behind European

averages as did their respective propensities to generate innovative output (Tsamis, 2009: 158-159). Moreover, the public sector is, as it is in many of Europe's less developed regions, overrepresented in what little innovative activities these regions host – the lion's share if R&D investment in both Central Macedonia and Crete is undertaken by public sector actors. The respective economic fabrics of the two territories were relatively technologically-unsophisticated as well; Thessaloniki, and the broader Central Macedonia region within which it is situated, specialised in more traditional, less knowledge-intensive activities and sectors, while Crete suffered from a dearth of both high-technology manufacturing and knowledge intensive services (Tsamis, 2009: 157). These socioeconomic shortcomings were also compounded by a number of institutional deficiencies that distorted markets, discouraged investment in innovative activity, hampered entrepreneurship and deterred FDI (Tsamis, 2009: 166).

The two parks relied upon what may be considered fairly standard interventions and instruments to attract and, in turn, support firms and entrepreneurs. Occupants of the parks were provided with access to both basic and more technologically-oriented infrastructure (e.g. labs, testing facilities) and with a variety of business support services (e.g. accountancy and various consultancy services, technology transfer services) (Tsamis, 2009: 184, 190). Incubators designed to lend support to nascent, high potential firms were developed in and served as cornerstones of both TTP and STEP-C as well. Interestingly, neither park elected to design or implement formalised networking programmes or services to promote inter- and intra-cluster linkages, connectivity or interaction (Tsamis, 2009: 230).

TTP nor STEP-C has, since their respective inceptions in the mid-1990s, fulfilled their primary objective and made a substantive contribution of regional economic growth or development; while STEP-C was perhaps marginally more successful than TTP, the impact of the parks on their respective broader regional contexts is best described as “very weak” (Tsamis, 2009: 230).

The more direct contributions of the parks to local economic output and employment have been limited. In 2004, TTP accounted for less than 0.1% and 0.05% of Central Macedonia's GDP and total employment, respectively (Tsamis, 2009: 223). STEP-C's contributions were

larger, but still underwhelming: 0.45-0.5% of Crete's regional GDP and 0.38% of total employment. The two parks interestingly accounted for significant shares of the total R&D expenditure undertaken in by their host regions: TTP hosted 9.7%, while STEP-C undertook 35% of all R&D expenditure in their respective regions (Tsamis, 2009: 223). That the two parks undertook such significant amount of R&D but did not contribute in an equivalent manner to regional economic output is indicative of the pervasive difficulties park tenants faced when mobilising and applying knowledge. The parks were also characterised by an inability to attract foreign firms, investment or partnerships to their host regions (Tsamis, 2009: 224).

The more indirect impacts of TTP and STEP-C on the innovative capacities and innovation systems of their respective regions have been negligible as well. Tsamis (2009: 230) notes that "the research activity [undertaken by the parks] remains disconnected from the local economy with no indication of a role in the development of high-tech clusters or collective learning processes". Even more generally, there is little in the way of evidence to suggest that either park has contributed substantively to the reorientation of their host economies towards more technologically-sophisticated, innovative and, ultimately, higher-value added activities or sectors (Tsamis, 2009: 226).

The performance of TTP and STEP-C were undoubtedly constrained by a number of factors. Their failure, however, to contribute to economic growth is a function primarily of two factors. The first is that the parks were "largely disconnected from the regional economy" (Tsamis, 2009: 227). That is, there was an insufficient degree of connectivity between the activities that were occurring in the parks and the economic actors and activities that existed and transpired beyond them. This stifled any potential diffusion of knowledge and innovation to local firms; precluded the establishment of forward and backward linkages and relationships; and, most generally, hampered the capacity of the park to contribute to the upgrading of the broader regional innovations systems of which they were theoretically a part. This first factor was compounded by a second, more fundamental one: the parks were established in innovation-averse environments that were plagued by a host of deficiencies and, were consequently incapable of sustaining, let alone benefitting from, knowledge-intensive activity and innovation. While the parks were envisioned as means to address the challenges and limited economic



dynamism of the regions in which they were built, in the end, both TTP and STEP-C fell victim to and could not overcome the pronounced socioeconomic and institutional constraints imposed by their respective regions (Tsamis, 2009: 227, 230).

### *What leads to strategies of waste?*

Although the five cases presented above represent very different examples in scope, dimension and orientation, a number of common features emerge when trying to explain why what, by all means, have been considerable development efforts not only failed to deliver on their stated goals, but also resulted in significant opportunity costs that have left many of the regions where the interventions took place in a similar, if not worse, condition than if no development strategy had been conducted.

First and foremost is the unbalanced nature of most of the interventions. Each of the five aforementioned strategies leaned strongly on one development axis linked to a particular dominant theory. Whether it was transport infrastructure in the case of the European Union, special economic zones in Peru, skill training in the Philippines, or science parks in Greece, too much faith was put on the supply of one development factor as a trigger for future economic development. However, the neglect of other development axes and disregarding the interplay between different dimensions of development intervention represented in all cases a serious hurdle for the success of the strategy.

Second, most of the strategies described above paid little attention to local conditions. The application of simple, theory-linked approaches often led to the belief that intervention could overcome what were often harsh realities on the ground. However, additional investment in R&D, new kilometres of motorways, or growth pole and cluster-type interventions in environments with serious shortcomings in basic endowments have yielded limited results. Excessive focus on the physical development of the zones overlooking sectoral structure, local infrastructure needs, and skills availability in Peru has condemned the zones to almost economic irrelevance. Neglect of local factors and, especially, of the socioeconomic and skill conditions that mediate the returns of R&D investment has stifled innovation in the less developed regions

of Europe, while a disdain of issues related to job availability and barriers to entry in the labour market have pushed Filipino nurses to migrate. However, the most glaring omission has been the limited attention paid to local institutional conditions. The promotion of new infrastructure, clusters, or growth poles in areas with poor quality of government, without parallel measures to improve government capacity, transparency and accountability, and/or reduce corruption, has suitably undermined the returns of intervention. If anything, the involvement of poor quality, often corrupt governments in decision-making processes has in some cases benefitted the private, short-term economic and political interests of certain local stakeholders at the expense of medium- and long-term economic returns.

Development strategies that disproportionately relied on the potential advantages of one type of intervention and were largely disconnected from the reality of the territories where they operated have, as a consequence, frequently ended as strategies of waste, with little to show in terms of productivity increases, job generation, and economic development, despite considerable levels of investment.

### ***3.2. Strategies of gain***

The various cases presented in the previous section raise understandable concerns about the general effectiveness of the various types of development interventions that have been pursued with particular enthusiasm across the world and, in turn, about the sensibility of the continued pursuit of these strategies in developing and emerging environments. However, not all types of development intervention can be easily dismissed as strategies of waste. Soundly-designed and well-executed multidimensional strategies – be they based on infrastructural expansion, investment attraction, the upgrading of innovative capacities and human capital endowments, or the promotion of co-location and positive territorial externalities – can also generate considerable economic returns, leading to strategies of gain. Strategies of gain can be defined as development approaches that have proven particularly capable of delivering on their expected impacts by fulfilling both their inherent potential and designated objectives. In this

section we will highlight a number of strategies of gain, summarising at the end of section the factors behind their success.

### *Shoring up ‘infrastructure gaps’ in Sub-Saharan Africa and Asia*

The pursuit of the infrastructure-oriented development strategies inspired by and grounded in neoclassical growth theories has, by no means, been confined to the European Union or the developed world more broadly. A number of African and Asian nations have sought to develop their infrastructure endowments, often with a view to rectify basic endowment deficiencies and bottlenecks that serve as fundamental impediments to economic performance and ensure that what is effectively a prerequisite for economic growth is fulfilled.

African nations, and Sub-Saharan ones in particular, have suffered – and still to a large extent suffer – from seriously debilitating infrastructure shortages, transportation or otherwise. Infrastructure shortages in the African context are viewed by many as fundamental – albeit not insurmountable – impediments to economic performance and dynamism; these deficiencies are thought to hamper inter- and intra-regional trade, discourage domestic and foreign investment, slow or prevent territorial cohesion, contribute to the retrenchment of regional disparities and, from a more socioeconomic perspective, obstruct access to basic public services thereby compromising efforts to reduce and eradicate poverty (Calderon and Servén, 2008; Foster and Briceño-Garmendia, 2010; Mbekeani, 2010; Hartzenberg, 2011, Gutman et al., 2015). Therefore, infrastructure investment and development and the filling of the so-called Sub-Saharan ‘infrastructure-gap’ have been prioritised by governments and international organisations alike. The financial commitments made by the World Bank, the African Development Bank and the OECD Development Assistance Committee to infrastructure development in Sub-Saharan Africa have, for example, increased steadily since 2000 ultimately reaching US\$10bn in 2012 (Gutman et al., 2015: 24). At the national level, a number of Sub-Saharan countries are directing significant and often increasing amounts of resources to infrastructure development; in 2013, Uganda, South Africa and Botswana were among the African countries that channelled more than seven percent of their respective GDPs towards

infrastructure (ICA, 2014: 46). The question that must be addressed, once again, is whether this expenditure has provided a measurable boost to economic dynamism.

Taken together, the body of empirical literature that assesses the returns to infrastructure investment and development in Sub-Saharan Africa suggests that transportation infrastructure investment has had a considerable growth-boosting effect. Calderón and Servén (2008), for one, examine the link between infrastructure development and economic growth and inequality in Sub-Saharan Africa between 1960 and 2005. Relying on indices that capture both the quantity and the quality of the infrastructure with which a country is endowed, the study provides “robust evidence that infrastructure development has had a positive impact on long-run growth and a negative impact on income inequality” in Sub-Saharan Africa (p. 29). Kodongo and Ojah (2016) reach a similar conclusion about returns specifically to infrastructure spending in the Sub-Saharan context. The econometric analysis reveals a positive and statistically significant association between infrastructure expenditure and economic growth and, moreover, provides an indication that relatively less-developed Sub-Saharan African countries can expect to reap greater returns from infrastructure investment than their more developed Sub-Saharan counterparts. This latter finding implies that infrastructure investment, even in the Sub-Saharan African context, is subject to diminishing returns. These results are corroborated by country-level studies. Kumo (2012), Bosede et al. (2013) and Chingoiro and Mbulawa (2016) probe the link between infrastructure expenditure and economic performance in South Africa, Nigeria and Kenya, respectively. In each case, the authors unearth evidence to suggest that investment in infrastructure has been an important driver of economic growth.

In short, the pursuit of infrastructure-oriented policies and strategies and the prioritisation of investment in infrastructure development, more generally, in the Sub-Saharan African context have been justified by the returns they have generated and the growth they have brought about. The preeminent explanation for why the returns to these investments have been so substantial relates to the fact that infrastructural endowments in Sub-Saharan Africa have long fallen – and still today fall – below some base-level that is necessary to sustain and support economic activity and dynamism; that is, much of Sub-Saharan Africa is situated farther away from the ‘infrastructure frontier’. Expenditure on infrastructure expansion in environments where this is

the case is, because of their distance to this frontier, less likely to suffer the sorts of diminishing returns that were especially evident in the European context. This implies that as long as infrastructural deficiencies exist, well-targeted and well-executed investments in the expansion and upgrading of infrastructure will continue to generate economic growth.

The realisation of returns from infrastructure development projects should not, however, be viewed as inevitable, even in environments characterised by the most severe infrastructural deficiencies. Botswana's Trans-Kgalagadi Road Project serves, in that respect, as something of a cautionary tale that underscores the importance of strategic planning, thorough diagnoses of local challenges and conditions and the execution of complementary actions and investments.<sup>20</sup>

The overarching aims of the Trans-Kgalagadi Road Project were to “reduce transport costs, enhance social and economic integration of South-Western Part of Botswana and facilitate economic integration with Namibia” (African Development Bank, 2011:7). The project centred on the construction of a 221km of bitumen ‘highway’ to replace what was previously an unpaved stretch of road between Sekoma and the Namibia-Botswana border crossing at Mamuno. Construction of the highway was completed and the road opened in 1998. With time, however, it became clear that the road was underutilized and that traffic volumes were well below those envisioned in the early stages of the project. Concern that the highway “could potentially develop into a ‘white elephant’” (African Development Bank, 2011: 18) inspired authorities to undertake a comprehensive review of the project in hopes of developing some understanding of why the anticipated outcomes of the project had not yet materialised. The review revealed that the underutilisation was attributable, at least in part, to “non-physical barriers to the cross-border movement of people and goods” (African Development Bank, 2011: 19), none of which were considered or factored in to the planning process. That is, even though the road was designed as a facilitator of economic integration between Namibia and Botswana, authorities failed to recognise that the cross-border movement of people and goods was inhibited as much by institutional barriers – including, for example, customs or unnecessarily complex transit procedures – as it was by the previous lack of physical connectivity. As a result, the project did

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<sup>20</sup> The proceeding discussion is based on a Project Performance Evaluation Report (PPER) prepared by the African Development Bank for the AfDB-funded Trans-Kgalagadi Road Project (African Development Bank, 2011).

not include measures or initiatives to increase the ease with which goods and people could cross the border between Botswana and Namibia – a shortcoming that would prove particularly consequential for the economic impact of the highway. It was only after a series of complementary investments were made and initiatives undertaken (including both physical measures such as the establishment of trade-facilitating ‘one-stop border posts’ and less tangible ones, including institutional reforms and the establishment of bodies – the *Trans-Kalahari Corridor Management Committee* – to oversee and manage the corridor) to transform the highway into a “transit corridor” that the project began to impel and increase interregional cooperation and integration, promote trade, and yield broader development outcomes (African Development Bank, 2011:19-21).

Infrastructure-oriented development approaches have found success in a diversity of Asian contexts as well. Deficiencies in infrastructure were, as in the case of sub-Saharan Africa, ubiquitous across many less developed Asian regions. The Rural Transport Improvement Project<sup>21</sup> and Central Yunnan Roads Development Project<sup>22</sup> pursued in Bangladesh and China, respectively serve not only to confirm that targeted infrastructural investments that address very specific deficiencies or bottlenecks can contribute to both economic growth and socioeconomic development in less developed contexts but also as ‘best practices’ from which lessons can undoubtedly be drawn.

Bangladesh’s rural areas have traditionally been plagued by a host of infrastructural deficiencies. While the implications of these shortages are numerous, one stands out as especially consequential: infrastructure shortages or inadequacies can compromise the capacity of impoverished people living in these rural areas to access and engage in income generating activities. Recognising this, the Government of Bangladesh embarked on a World Bank-supported initiative – the Rural Transport Improvement Project (RTIP) – whose principal socioeconomic objective was to support poverty alleviation and foster economic growth in rural

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<sup>21</sup> The proceeding discussion is based on a Project Performance Assessment Report prepared by the World Bank Group’s Independent Evaluation Group (World Bank, 2016c).

<sup>22</sup> The proceeding discussion is based on a Validation Report prepared by the Asian Development Bank’s Independent Evaluation Department (Asian Development Bank, 2016).

areas via the provision of improved access to social services and economic opportunity in the county's rural communities (World Bank, 2016c: 2).

The project was implemented and overseen by the government's Local Government Engineering Department and featured eight complementary components that operated across and addressed multiple development axes. The first six were of a more physical nature. They related primarily to the maintenance and upgrading of rural roads, bridges and culverts, rural markets and river jetties; to the acquisition of land needed for this construction; and to the implementation of resettlement and other land/environmental management plans. The final two components centred on the provision of technical assistance and consultancy services, capacity building, human capital upgrading, and institutional development.

The prioritisation of institutional development in this particular project was due to two factors. First, the project's primary socioeconomic objective was accompanied by a second, more institutionally-oriented goal: "to enhance the capacity of relevant government institutions to better manage rural transport infrastructure" (World Bank, 2016c: 2). Second, projects like these can be derailed by various capacity constraints and other institutional deficiencies. The shoring up of capacities and capabilities is therefore often necessary to facilitate the efficient execution and longer-term sustainability of policy initiatives.

While the project was not executed without its share of challenges,<sup>23</sup> at closure in 2012, the project had successfully constructed, rehabilitated or upgraded 1638km of 'upazila' roads (feeder roads); 15,965 meters of missing bridges/culverts; 123 rural markets and 32 river jetties (World Bank, 2016c: 7). More importantly, however, there is ample evidence to suggest that the project had profoundly positive economic and social impacts. Average monthly income and expenditure, for example increased in project areas by 73.4% (compared to 14.9% in non-project areas) and 55.8% (33.9% in non-project areas) (World Bank, 2016c: 8). The improvements to the infrastructure networks and the increased connectivity they facilitated have also been linked to

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<sup>23</sup> The most notable among them were, first, that the earliest stages of project were plagued by minor delays attributable to "challenges associated with land acquisition and compensation and poor contract management" (World Bank, 2016c:4); and, second, that "the capacity building objective only partially achieved its training objectives" (World Bank, 2016c:1).

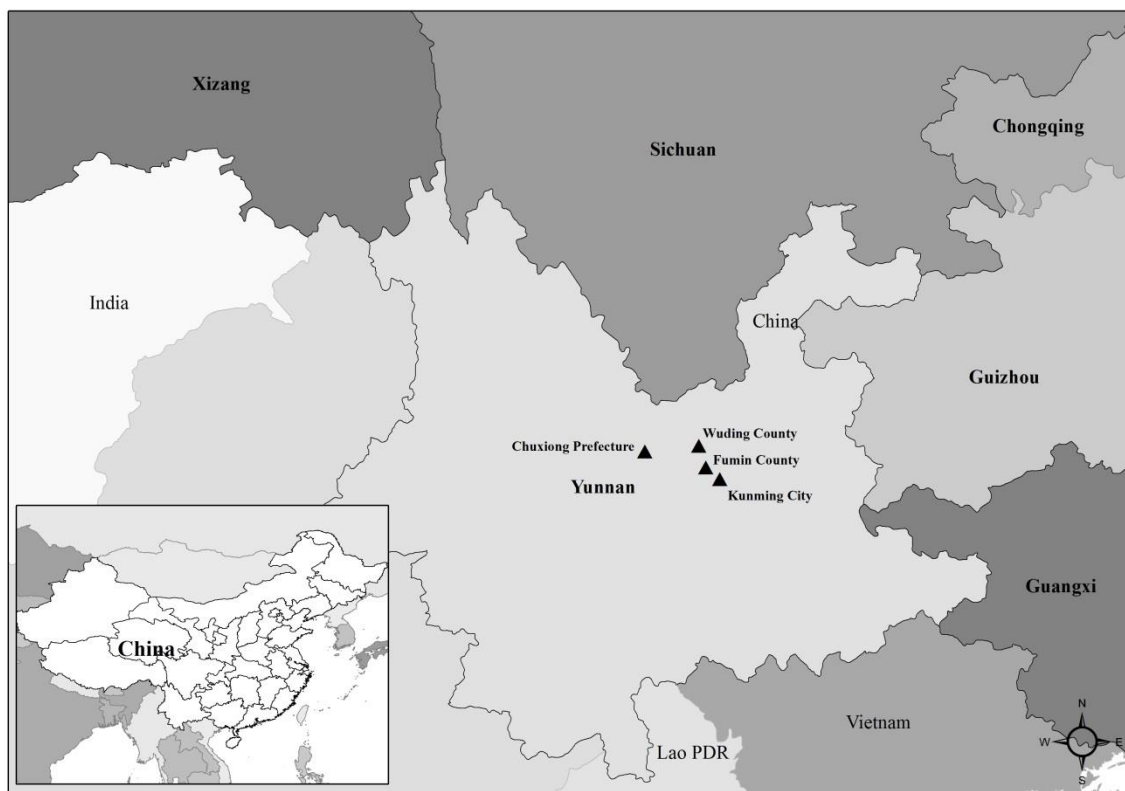
increases in agricultural and non-agricultural production and trade, though ex-post evaluation has not yet been able to determine the extent to which increases in the latter are directly attributable to the project (World Bank, 2016c: 8).

There are also indications that the intervention has delivered more socioeconomically-related benefits to rural residents in project areas in the form of improved access to both education and healthcare. Total school enrolment and the total number of healthcare services recipients increased by 12.2% and 32% respectively in project areas (World Bank, 2016c: 9). These increases materialised in the face of decreases of 60% and 20%, respectively, in non-project areas (World Bank, 2016c: 9).

Yunnan province in Southwestern China is among the country's least economically developed regions. A lack of accessibility and infrastructural deficits are thought to be two of the factors to which this underdevelopment and the ineffectiveness of previous poverty alleviation and developments efforts are most readily attributable (Asian Development Bank, 2016: 2). The upgrading of intra- and interregional transportation infrastructure has therefore come to be seen as a prerequisite for the achievement of economic growth and development and the eradication of interregional inequality.

It was this perception that led to the formulation and implementation of the Asian Development Bank-supported Central Yunnan Roads Project. The overarching aim of the project was to establish “a well-functioning integrated road transport system in Yunnan Province and [connect] the rest of the Greater Mekong Subregion” (Asian Development Bank, 2016: 2) with the aim of helping to catalyse economic growth and contribute to poverty alleviation in Yunnan. Achieving higher levels of trade between Yunnan and the remainder of the country and, especially, with its more economically developed eastern/coastal regions was an important secondary goal.





*Figure 3 - Central Yunnan Roads Project area; Author's elaboration*

The project was guided by four specific, mutually-reinforcing objectives each of which pertained to a differing aspect of the region's infrastructure system: (1) the construction of a Wuding-Kunming expressway; (2) the upgrading of 190km of local roads; (3) the improvement of road and traffic safety; and (4) the development of technical capacities of parties responsible for the design and implementation of the project (Asian Development Bank, 2016: 3).

It was operationalised at the subnational level by two implementing agencies each of which were responsible for two of the aforementioned objectives. The Yunnan Provincial Department of Transport oversaw road upgrading and safety improvement efforts. The Wukun Expressway Company Limited was tasked with the construction of the highway and the execution of the capacity building and institutional development initiatives.

The targets associated with the project's four guiding objectives were all achieved: (1) the 63.6km Wuding-Kunming expressway opened in October of 2013; (2) 190km of local roads

were rehabilitated over the course of the project; (3) efforts to improve road safety resulted in a decrease in road accident fatalities per 10,000 vehicles of 30% in 2013; and, finally, (4) staff of both the Yunnan Provincial Department of Transport and the Wukun Expressway Company Limited were provided with 63 person-months of international training (Asian Development Bank, 2016: 7).

Upon review, it became clear that considerable progress had also been made towards the project's underlying objective.<sup>24</sup> Ex-post assessment confirmed that the project made substantial contributions to both poverty reduction and economic development in Fumin County, Kunming City, Wuding County and Chuxiong Prefecture, all of which fell within the project area (*Figure 4*). GDP per capita in the project area increased, for example, by an average of 18.3% between 2008 and 2013. The per capita incomes of farmers in Fumin County (128%), Wuding County (122%) and Chuxiong Prefecture (104%) also increased between 2008 as did the disposable incomes of individuals living Kunming City (96%). The project, and the construction of the expressway in particular, also resulted in the creation of 3930 temporary jobs for local inhabitants as well as 268 permanent jobs. Finally, the project contributed to poverty alleviation in the project area; between 2011 and 2013, the number of 'poor people' living the project area decreased by close to 40%, from 204,800 to 124,300.

*Attracting investment to the Dominican Republic: the importance and effectiveness of special economic zones*<sup>25</sup>

Peru's engagement with its special economic zones explored in the previous section is undoubtedly a cautionary tale. Special economic zone programmes have not, however, been universally ineffective; experiences like that of the Dominican Republic with special economic zones provide some indication that inward investment-oriented approaches can, under the right circumstances and if appropriately operationalised and overseen attract and concentrate

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<sup>24</sup> The socioeconomic impacts of the project are detailed on page 9 of the Validation Report (Asian Development Bank, 2016).

<sup>25</sup> The proceeding discussion is based on a World Bank (2016b) review of the Dominican Republic's experience with special economic zones.

economic actors, activity and investment and, with time, evolve into ‘growth poles’, whose success and dynamism pays dividends in the form of regional economic development.

Special economic zones have, in the Dominican context, proven to be “powerful [engines] for job generation, exports and productive diversification” (World Bank, 2016b: 8), means to attract foreign investment and effective instruments for the pursuit and achievement of economic growth.<sup>26</sup> The country’s special economic zones, the first of which was established in 1969, focused initially on textiles and clothing manufacturing, benefitting from the Multi-Fibre Agreement and the import quotas with which it was associated (World Bank, 2016b: 7). The end of Multi-Fibre Agreement in 2005, while a challenge for the country’s zones, also served as the impetus for a shift that saw the Dominican Republic’s special economic zones become increasingly engaged in more capital-intensive, higher-value added activities in the services, textiles, medical instruments, tobacco and agroindustry sectors (World Bank, 2016b: 8). As of 2014, the country’s zones, which rely on a mix of incentives in the form, primarily, of tariff exemptions and a range of fiscal instruments to attract firms and encourage investment, hosted, on average, 11 firms and accounted for 140,000 jobs (World Bank, 2016b: 8). By 2015, 65 special economic zones had been established, 47 of which were privately owned and operated (World Bank, 2016b: 9). These zones, irrespective of whether they are privately or publically managed, are very much ‘outward-oriented’, prioritising both the attraction of foreign direct investment as well export promotion and the cultivation of domestic exporters (World Bank, 2016b: 9).

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<sup>26</sup> The Dominican Republic’s experience with special economic zones, while generally regarded as positive, has not been free of challenges and obstacles. There are concerns, for example, that the potential of these zones as sources of permanent employment creation may be waning as the firms they host become increasingly engaged in more technologically-sophisticated and higher-value added *but also less labour intense* activities and industries (World Bank 2016b: 13-14). Movements, like these, ‘up the value chain’ are indicative of a maturation of the zone programme and of the Dominican economy more generally. They also, however, are associated with “important labour implications” that policy makers must recognise and take steps to address and manage (World Bank, 2016b: 13). A second, and perhaps more immediate set of concerns, relates to the emergence of “a duality in [the country’s] production structure” and the performance and viability of non-SEZ firms more generally (World Bank 2016b: 10). That is, the country’s SEZ firms tend to be engaged in sectors and industries that are wholly and increasingly different to those within which their non-SEZ counterparts are participating and are, as result becoming increasingly disconnected from them (World Bank 2016b: 10). SEZ firms are, for example, still largely dependent on imported inputs (World Bank, 2016b: 18-19). Simply stated, non-SEZ firms are struggling to cultivate relationships with, benefit from and keep pace with the SEZ firms. This inevitably raises questions about the extent to which zones in the Dominican Republic can become a catalyst for more geographically widespread economic growth and development (World Bank 2016b). This, however, has not gone unnoticed by policy-makers who have since operationalised programmes designed to rectify it (see *Footnote 26*).

The success of the Dominican Republic's zones is attributable to four key factors. First is the Dominican Republic's relationship with the United States. The country's physical proximity to the United States coupled, first, with the Multi-Fibre Agreement and, later, with the Dominican Republic Central American Free Trade Agreement (CAFTA-DR) – both of which granted preferential market access to Dominican exports – increased the appeal of the Dominican Republic's special economic zones to foreign firms as sites for their offshore production activities.

Second, the private sector has featured prominently in the country's special economic zone regime. Not only are the vast majority of the country's zones owned by private bodies that can leverage capabilities, capacities and experience that likely exceed those of their public-sector counterparts to manage and operate the zones in a more efficient manner, the private sector is also a contributor to the policy dialogue, via an “association of SEZ entrepreneurs (ADOZONA)” and representation on the committee that is responsible for the oversight and regulation of the country's special economic zones (World Bank, 2016b: 9). It is, as a consequence, immediately engaged in the development of the country's special economic zones programme. Such engagement is anticipated to ensure that the policies and initiatives linked to the programme are, and continue to be, sufficiently attuned to the needs and priorities of the stakeholders they target.

Third, the country's special economic zone programme is overseen by a single and effective regulatory body – the Consejo Nacional de Zonas Francas Especiales (CNZFE). Simple and streamlined regulatory systems are thought to impose lower transactions and administrative costs on firms and create a context that is more conducive to investment and economic activity; the assignment of oversight responsibilities to a single actor, as was the case in the Dominican Republic, eliminates coordination challenges and simplifies and streamlines its special economic zone regulatory regime. The CNZFE also assumes responsibility for efforts and initiatives to attract foreign firms and investment, effectively doubling as an inward investment agency. It has in recent years, “established a Statistical Department, an Economic Analysis and

Competitiveness division and a Promotion department” all of which have contributed to its success, “attracting investors from a number of emerging industries” (World Bank, 2016b: 9).

Fourth the Dominican Republic’s special economic zones programme has been actively and efficiently governed by policy-makers that have managed to navigate a series of profound changes and challenges via the reformation of domestic regulations and policies (World Bank, 2016b:9). That is, policy-makers have continually introduced changes to special economic zones legislation to ensure not only that the country’s special economic zones are compliant with WTO rules, but also that the zones remain as attractive and competitive as possible and can, in turn, continue to serve as catalysts for export and economic growth (World Bank, 2016b: 22).

Relatedly, policy-makers have also recently acknowledged and taken steps to rectify a pronounced weakness to which the zone programme is subject: namely that the zones are increasingly detached from the remainder of the economy. Recognising that greater connectivity between the zones and the territories in which they are situated must be fostered if the zones are to contribute to more geographically widespread, inclusive socioeconomic development, they have pursued initiatives to promote greater interaction between firms situated inside the country’s zones and those that are not. Most notably, they have established a ‘match-making programme’<sup>27</sup> that attempts to promote the establishment of inter-firm linkages (World Bank, 2016b: 21).

#### *Market-oriented education and training: Vietnam’s Vocational and Technical Education Project*<sup>28</sup>

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<sup>27</sup> ‘Match-making’ efforts thus far have involved the facilitation of “business-to-business meetings”. The ultimate aim of these meetings are to expose SEZ firms to local, non-SEZ firms (and vice-versa) and, ideally, lay the foundation for the establishment of a more formal, mutually beneficial relationships between them (World Bank, 2016b: 21). In 2015, for example, the CNZFE piloted a “match making round in which more than 60 business to business meetings took place” (World Bank, 2016b: 21). It was the intention of the CNZFE to, in subsequent iterations, expand and open participation in these ‘rounds’ to a variety of other actors, stakeholders and institutions, including “national associations of exporters, representatives of chambers of commerce, and other industry representatives” (paraphrasing World Bank, 2016b: 21). It should also be noted that these concerted match-making efforts are supplemented by the provision of training to domestic firms – again by the CNZFE – to ensure, that local suppliers are aware of the “quality certifications needed to become suppliers of SEZ firms” and, importantly, in a position to meet, if not exceed them (World Bank, 2016b: 21).

<sup>28</sup> The proceeding discussion is based on a Performance Evaluation Report for Vietnam’s Vocational and Technical Education Project prepared by the Asian Development Bank (2013).

The stock of suitably skilled human capital with which a region is endowed does, as postulated by the endogenous growth theories, influence its economic performance, and, consequently, actions geared towards its expansion could contribute to the achievement of economic growth. If not mobilised and engaged in productivity activity, however, skilled individuals are rendered unable to contribute to economic growth and development. It is for this reason that education and training-oriented initiatives must, as they were in the Vietnamese Vocational and Technical Education Project, be aligned with the needs of firms and the demands of the labour market more generally. Training schemes, moreover, should ideally be integrated into broader development strategies that balance supply-side efforts with actions that address demand-side conditions.

Shortages of skilled labour have long been identified as a preeminent development challenge for Vietnam. In 1998, for example, “about 80% of the labour force was unskilled...and only 10% had formal training” (Asian Development Bank, 2013: 4). This shortage of skills was mostly attributable to a weak supply-side-oriented vocational and technical education system that was neither robust enough to cope with the country’s increasingly large and expanding labour force nor capable of catering to and fulfilling the shifting needs of the country’s labour market and industries (Asian Development Bank, 2013: 4). Reformation of this system was therefore seen as means to, overcome the pronounced skills deficit facing the country. The Asian Development Bank-supported Vocational and Technical Education Project represented an effort to do just that.

The project was motivated in equal measure by an awareness of the various inadequacies of the country’s vocational and technical education system and by the more general perception that the provision of training and the expansion of the country’s skilled labour pools were crucial to achieving both of the aims of Vietnam’s market-oriented industrialisation policy (Asian Development Bank, 2013: 1) and of economic growth and development, more broadly (Asian Development Bank, 2013: 11). Overseen by the Ministry of Labour, Invalids and Social Affairs and implemented by the governments’ General Department of Vocational Training, the project was guided by three specific objectives (Asian Development Bank, 2013: 1): (1) improving the market-orientation of the country’s vocational and technical education system; (2) improving the

efficiency of the vocational and technical education programmes offered by ‘key schools’; and (3) strengthening the institutional capacity of the General Department of Vocational Training to facilitate both the implementation of the project and provide the government with the capacity to undertake future reforms.

The project featured three discrete but inevitably interrelated components, each of which corresponded to the one of its three main objectives. The first component was composed of efforts and initiatives to increase the market-orientation of the vocational and technical education system and increase its coherence with the skills requirements and priorities of employers. These included the development of a ‘labour market information system’ and other enterprise surveys to facilitate the “systematic assessment of the demands of enterprises and employers” (Asian Development Bank, 2013: 6); efforts to increase the ‘career guidance’ available for students; and the development of new curriculums, and corresponding teaching guides and learning materials, that were more closely aligned with the “skills requirements of employers” (Asian Development Bank, 2013: 6). The second component centred on the construction and renovation of, the installation of new equipment and technologies in and overall upgrading of 15 key schools that were the focus of the project (Asian Development Bank, 2013: 7). The third and final capacity-building component featured initiatives to establish unified qualification and assessment systems and frameworks for monitoring and certification purposes; increase the accessibility of vocational and technical education to women, minorities and other disadvantaged groups; and provide training to and improve the technical capacity of both teachers and policy-makers at all levels of government.

The more immediate outcomes of the project have been numerous. With regards to its first objective, the project resulted in the design and implementation of 48 new curricula and in the establishment of a more market-oriented, bottom-up, stakeholder-driven process to devise curricula that reflect labour market demands and the skills requirements of employers (Asian Development Bank, 2013: 18). The second objective was fulfilled by upgrading the facilities and equipment at the 15 key schools to the benefit of both students and the schools themselves (Asian Development Bank, 2013: 18). From the perspective of students, the upgrading of the schools, equipment and resources improved the overall learning experience and afforded students

the opportunity to become familiar with the technologies, tools and equipment relied on by employers and enterprises. The reputations of the 15 target schools were enhanced by the upgrading processes as well, which, in turn, increased their capacity of these schools to attract and train more students. Some progress has also been made towards the achievement of the third, institutionally oriented objective, though this is the front on which work remains. Curricula development training was, for example, provided to 4900 teachers and administrators. The success of the project on other fronts also implies that any capacity building initiatives undertaken with a view to facilitate project execution were at least somewhat effective. The establishment of accreditation, certification and qualification frameworks and systems is, however, not complete, and, similarly, efforts to increase the participation of women, minorities and other disadvantaged groups have not been as successful as envisioned (Asian Development Bank, 2013: 20).

The project's broader labour-market impacts have been sizeable as well. The project expanded the country's stock of skilled and vocationally trained labour. Between 2001 and 2007 the 15 key schools targeted by the project graduated 210,600 people, many of whom participated in and benefitted directly from one of the newly devised, market-tailored curricula (Asian Development Bank, 2013: 27). Similarly, the majority of graduates from the project's target schools' encountered little difficulty obtaining employment. A follow-up assessment revealed that only 4.1-6.2 percent of graduates were unemployed two to three years after the completion of training (Asian Development Bank, 2013: 28). Graduates also tended to earn higher and faster rising incomes than non-graduates (Asian Development Bank, 2013: 29).

The most significant labour-market impact of the project however may also be its least quantifiable. The *ex post* performance review indicates that the project "helped to orient [the overarching] vocational and technical education system toward a market-driven approach" (Asian Development Bank, 2013: 27). That is to say, the project has had a profound effect on attitudes toward and policy-thinking about the way in which vocational and technical education systems should be structured, and, relatedly, about the necessity of adopting market-oriented approaches that integrate demand-side factors and concerns into supply-side policies and initiatives. Overall, it has impelled a shift away from the supply-driven policies of the past



towards more flexible and sustainable integrated, demand-driven policies that are likely to yield benefits for employees and employers alike.

*Promoting interaction and connectivity in Brazilian clusters: Brazil's APL policy*<sup>29</sup>

Cluster-oriented development policies have, as alluded to in the previous section, encountered their share of difficulties and challenges. Far too often, policy-makers have sought foster the co-location of firms and economic actors in economically disadvantaged regions without sufficient concern for the capacity of those regions to in the first instance, sustain and, in turn, benefit from the clusters they were attempting to cultivate. Limited attention has also been paid to the promotion of linkages and connections between the cluster itself and the territory and economic system in which it was situated or to the encouragement of interactions, cooperation and collaborations within the cluster. The neglect of these considerations explains many of the less-successful clusters policies pursued in a diversity of contexts. Brazil's Arranjos Productivos Locais (APL) policy, however, serves as a reminder that carefully designed, contextually-tailored cluster-based development strategies can have a profound positive impact on the economic fortunes of the places in which they are pursued.

Quantitative impact analysis of cluster development policies, in the emerging world in particular, are few and far between (Garone et al., 2015). This absence of evidence, ultimately, inhibits our capacity to form robust conclusions about the more tangible outcomes of and overall effectiveness of cluster-based development strategies. Garone et al. (2015) address this barrier by exploring the employment generation, value creation and export-propensity outcomes associated with the implementation of the Brazil's APL policies in a selection of country's clusters, providing, in their own words, "the first rigorous impact evaluation of a cluster development policy in Latin America" (Garone et al., 2015: 926). They define the APLs as "clusters of firms within the same administrative area (e.g. municipalities) that share a particular economic specialisation" (Garone et al., 2015: 929). Operation in close physical and sectoral proximity is not, however, the main characteristic of these clusters; Garone et al. (2015: 929) are

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<sup>29</sup> This section draws on Garone et al.'s (2015) econometric investigation into the effectiveness of Brazil's APL policies in two of its provinces.

careful to stress that it is the interaction, collaboration and cooperation among the cluster's various inhabitants and stakeholders that set these APLs apart from mere agglomerations of economic actors and activity.

Prior to 2004, APLs were established and supported by various, unconnected public and private SME-promotion agencies. In 2004, however, recognising the inherent potential of these APLs as tools for the promotion of local economic development, Brazil introduced an official APL policy, whose overarching aim was to support job creation and bolster the competitiveness of firms and the regions they occupy via interventions designed to increase efficiency of, and interaction and cooperation between co-located firms (Garone et al., 2015: 929). APL policy, which is now managed and overseen by a purpose built 'APL Permanent Working Group' within the Federal Government's Ministry of Development, Industry, and Foreign Trade,<sup>30</sup> has since become a prominent feature of the country's industrial policy.

APL interventions have not been pursued indiscriminately. Authorities, rely on a rigorous assessment process to determine if and where policy efforts will be implemented (Garone et al., 2015: 929). The primary reason for doing so is to ensure that scarce resources are channelled to support clusters that, on the one hand, are sufficiently developed to actually benefit from the policy but, on the other hand, still face challenges and obstacles that hamper their performance and warrant policy intervention. Interventions are therefore, in effect, targeted, at clusters characterised simultaneously by "certain levels of SME concentration and specialisation (often defined as existing or potential APL)" (Garone et al., 2015: 929) and "credible development potential" (Garone et al., 2015: 930). The extent to which a particular cluster could contribute to processes of local economic development is also integrated into the selection process (Garone et al., 2015: 931). The implication of the employment of a rigorous selection process and criteria is that APL policy interventions are not guided by the objective of *physically creating* clusters, but rather by the aim of transforming a group of co-located firms into a 'prototypical' cluster in which interaction, cooperation and collaboration are ubiquitous (Garone et al., 2015: 930).

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<sup>30</sup> While the APL Permanent Working Group is responsible for the oversight and coordination of APL policies, the interventions themselves are implemented at the local level often by the Brazilian Service to Support Micro and Small Enterprises (SEBRAE) (Garone et al., 2015).

Brazil's APL policy interventions are composed of two distinct stages. The first stage centres on the development of 'strategic development plan', informed by both comprehensive diagnostic analyses and by the participation and insights of private- and public-sector stakeholders. It is also at this stage that institutional strengthening and capacity building-type activities are undertaken. This first planning stage, and APL interventions more generally, are bottom-up and participatory in nature; Garone et al. (2015: 929) highlight that the key foci in the policy elaboration phase include the fostering of cooperation within the APL; the promotion of interactions between the main agents in the cluster; and the identification of the local leaders who will be responsible for the implementation of policy interventions.

The second stage of policy intervention process consists of the actual operationalisation of the development plan and the implementation of the specific actions envisioned by it. The exact set of tools and instruments relied on by different APLs will vary in accordance with their respective development plans and the opportunities and challenges by which a particular cluster is characterised. That said, interventions, irrespective of where they are pursued, tend not to target individual firms, but rather, focus on cluster-level actions and on the promotion intra-cluster networks and cooperation and interaction (Garone et al., 2015: 929-930).

APL interventions have been pursued across Brazil and have targeted agglomerations that specialise in any number of industries. Garone et al. (2015), however, focus their empirical analysis on a handful of APL policies implemented by the Brazilian Service to Support Micro and Small Enterprises (SEBRAE) in São Paulo and Minas Gerais to devise insights into the overall effectiveness of Brazil's APL policy programme.

The picture that emerges from this econometric exercise is a favourable one. The study provides evidence to suggest that the APL policy interventions pursued in the states of interest contributed to job creation, value generation and increased export propensity in the clusters in which they were pursued (Garone et al., 2015: 936). Moreover, these more-specific employment- and export-related outcomes are interpreted as evidence that APL policies, and the interventions of which they are composed, have augmented the overall productivity of the firms that compose clusters targeted by these strategic interventions. The authors assert that "the simultaneous

effects of employment and export measures [would] hardly be achievable without a significant increase in firms' productivity" and, consequently, that "the efficiency enhancing activities put in place by the APL policy...were actually effective" (Garone et al., 2015: 936). The analysis also indicates that even firms that were not explicitly targeted by the APL interventions themselves but were physically proximate to those that were benefitted over the medium-to-long term from spillovers (Garone et al., 2015: 336). The inference to be drawn here is that APL policies have contributed to more than just efficiency and productivity gains for targeted firms. They have served as instruments for the pursuit of more widespread local economic development (Garone et al., 2015: 942).

### *Putting together strategies of gain*

What are the main differences behind generating strategies of gain and strategies of waste? There is always a fine line that determines whether any type of development intervention becomes a strategy of gain or a strategy of waste. As the examples addressing infrastructure gaps in sub-Saharan Africa and in Bangladesh and Yunnan, China, the special economic zones in the Dominican Republic, the Vietnam vocational training schemes, and the Brazilian APL clusters have shown, making a development strategy work is a matter of nuance, depending often on involving a series of basic principles in the design of the adopted approach.

The first principle in all cases has been the need to pay attention to local conditions, regardless of the theory and main area of innovation that informs the strategy. Awareness of the local context was paramount in the success of the special economic zones in the Dominican Republic and played a key role in the dynamism of Brazilian APL clusters. The Dominican government went the extra mile to link the economic activity generated inside the zones to the rest of the Dominican economy. In Vietnam – and in contrast to countless other human development and skill building strategies in the emerging world – vocational training was carefully aligned with the needs of local firms. It is this attention to context and, in no mean measure, the demand-driven nature of most of these initiatives that, first, contributed to a careful design of the strategy, based on a solid diagnosis of local conditions, bottlenecks and potential and which helped translate it into sustainable economic activity.

Awareness of local context has been accompanied by the skilful integration of interventions within broader development strategies. Road building projects in Bangladesh fulfilled their goals because they were complemented by the provision of technical assistance and consultancy services, together with capacity building schemes and measures aimed at improving local institutional conditions and human resource endowments. The Vietnam vocational training scheme was also integrated within a broader development strategy.

Finally, sheer distance to so-called ‘frontiers’ may have helped in the success of certain schemes. Infrastructure endowments in sub-Saharan Africa, as is the case in Bangladesh and Yunnan province, are still sufficiently low to incur in diminishing returns, meaning that any additional investment in infrastructure is unlikely to suffer from high opportunity costs and can still contribute to set the preconditions for future economic development.

#### ***4. Separating strategies of gain from those of waste***

Taken together, the cases presented in the preceding section provide an indication of the potential of spatially and territorially-targeted development interventions as means to impel sustainable and locally-embedded economic growth and development. They also, however, serve as reminders, in the first instance, that the pursuit of these approaches can be fraught with challenges and may be prone to derailment by any number of factors or weaknesses, and, moreover, that great care, contextual awareness and a cognisance of the pitfalls to which these strategies often fall victim must be employed in both their design and implementation. The question that must therefore be addressed is, quite simply: *what separates the strategies of gain from those of waste?* The proceeding sections propose and address four points of divergence between the two aforementioned types of approaches. It is from these differences that a series of policy implications are gleaned.

##### ***4.1. The importance of multidimensionality, integration and balance***

Each of the strategies of waste considered was guided by a different overarching objective ranging from, *inter alia*, the expansion of regional infrastructure endowments, to the attraction of non-local investment and enterprises to the co-location of economic activity and the productivity-enhancing externalities with which it is associated. Such interventions were clearly embedded in the extant theoretical approaches to growth and development, but generally fished in one particular theoretical pond, ignoring the benefits of alternative approaches. Each development intervention was therefore informed and underpinned by a single, different theoretical perspective and, as a result, was ‘unidimensional’ in nature. Hence, all of the strategies of waste presented shared one especially prominent commonality: they exclusively focused on one ‘development axis’. That is, each intervention concentrated excessively on the rectification of one particular deficiency through one type of policy instrument or intervention. As a consequence, they neglected the way and extent to which other, not-immediately-related factors affect and can actually compromise the overall efficacy of those interventions.

In the European Union, the neoclassical growth theory-inspired perception that increasing a region’s stock of infrastructure would, directly and indirectly, augment regional productivity and, in turn, spur growth, led to the channelling of significant resources to the expansion of what was already – or had recently become, following heavy investment in the preceding years – a reasonably mature transport infrastructure network. A failure, however, to consider how exactly the establishment of new infrastructure would complement or unlock a region’s assets of capabilities – or, relatedly, could be rendered ineffective by a lack thereof – resulted in the indiscriminate allocation of scarce financial resources to actions that, at best, failed to alleviate or rectify infrastructural deficiencies that inhibited productivity and stifled economic growth and, at worst, merely provided duplications of existing infrastructure or services. In both Peru and Greece, special economic zones and science and technology parks, respectively, were merely imposed, without complementary or supportive policy actions, on regions by policy-makers that did not, or were unable to, ingrate them into their respective economic fabrics. This failure undermined the purported theoretical potential of these interventions to serve as growth poles that leverage external investment and, in the case the science and technology parks the externalities associated with co-location, to provide a boost to and catalyse the growth of the broader geographic regions in which they are situated. The Filipino education systems displayed

a similar, equally problematic ‘unidimensionality’ as well. The country’s robust medical training system that should, according to endogenous theories of growth, churn out the skilled human capital that drives economic growth, was rendered ineffective by an absence of efforts to match and integrate a focus on the supply of skills and education with and into initiatives to create sufficiently high-quality employment opportunities through which educated persons could exploit their skills and contribute to economic growth. The innovation-oriented, endogenous growth theory-guided efforts of the European Union to foster economic dynamism via expenditure in the generation of knowledge that was anticipated to spur the technological process that underpins growth have been ineffective, again, in large part because of the omission of strategic interventions to ensure that the regions to which more and more R&D resources were geared to had or were able to develop the capacity and capabilities to mobilise and exploit them.

The strategies of gain outlined in preceding sections, were not, on the other hand, characterised by this ‘unidimensionality’. They were marked both by a distinct multidimensionality and by an integrative, balanced nature. In both China and Bangladesh, the infrastructure-oriented development projects were composed of several complementary components – that were also supplemented by institutionally-oriented reforms – that together promoted both the alleviation of specific bottlenecks and the upgrading of the overall infrastructure networks of their respective environments. Similarly, concerted efforts, in the form of both specific networking and linkage-promotion interventions and higher level regulatory reforms, were made an integral part of the Dominican Republic’s special economic zone programme as a means to embed the country’s zones in their respective regions. The inclusion of these efforts was motivated by the need to ensure, first, that local firms – and the regional economies they compose – could tap into and realize benefits from the zones to which they were proximate and, second, that the zones did not remain entirely disconnected from the environments in which they were established. In Vietnam, the strategic efforts to reform the country’s vocational and technical education system were, unlike many of those pursued elsewhere in the emerging world, devised in full awareness of the skills demands of local firms and the opportunities that existed in the labour market. The reforms were also envisioned as a vitally important part of, and were integrated into, the country’s broader market-oriented industrialization effort. Finally, Brazil’s APL cluster policies rely on an array of mutually-

reinforcing interventions and instruments that target and provide support to both the individual firms that compose the cluster as well as the interactions, relationships and linkages among actors in the cluster. Together, these actions foster the overall dynamism of the cluster to the benefit of the wider region in which it is situated and, via feedback mechanisms, the clustered firms themselves.

Unidimensional approaches to development, including the strategies of waste discussed, that operate along one development axis are informed by a very narrow understanding of the factors that condition and shape processes of economic growth and change. That is, they adhere, unfailingly, to the policy prescriptions that emerge from a single development theory (e.g. Barca et al., 2012: 137). As a consequence, such approaches tend not to account for the facts, first, as the evolution of growth and development theories would seem to confirm, that the economic performance and dynamism of any given region is likely governed and mediated by any number of contextually-specific factors, characteristics and attributes and that economic underperformance tends not to be attributable to one particular deficiency, but rather to several, inevitably interconnected ones (e.g. Dosi et al., 1994; Adelman, 1999; Dang and Pheng, 2015; Pike et al., 2017).

Certain deficiencies may very well be, in some environments, more pronounced than others which may, in turn, lead development strategies to be oriented more squarely in one direction over another. Moreover, contextual conditions in certain environments may, for any number of reasons, be more receptive or amenable to certain types of policy interventions than others.

Infrastructure investment can, for example, because of the diminishing returns to which it is subject and the expectation of limited returns beyond a certain threshold, be a suitable cornerstone for development strategies to be pursued in less-developed territories plagued by infrastructural deficiencies that stifle economic activity, trade, processes of territorial integration and/or individual mobility. Similarly, certain territories with burgeoning industrial or sectoral specialisations, and the competitive advantages and socioeconomic and institutional conditions to sustain it, may be in position where the inflow of foreign capital and firms could lead to the



rapid and sustainable expansion of that sector. Policy-makers in this type of territories should consider awarding inward investment-oriented actions a privileged position in the development strategies they devise and pursue.<sup>31</sup> In a similar vein, the sorts of human capital or knowledge-oriented initiatives prescribed by the endogenous growth theory may be more viable in more economically advanced environments where other, perhaps more fundamental, socioeconomic or structural deficiencies have been addressed and conditions are such that skills, knowledge and innovation can be internalised, mobilised and productively exploited. There is perhaps even scope for the development of economic growth strategies underpinned by cluster-based actions or initiatives in territories where dynamic economic actors are already located in close physical proximity and, consequently, the focus of said initiatives need not be on fostering physical co-location but rather on the promotion of cooperation, collaboration and general interaction within the pre-existing agglomerations, and, by extension, on the establishment of linkages between the cluster and the territory that hosts it.

All of this does not, however, imply that other, perhaps less pronounced shortcomings by which a region is plagued, or even its more general characteristics or attributes, can or should be overlooked and, more basically, that a wholly unidimensional approach will ever be appropriate. Development strategies need to consider the complexity of the factors that hinder development and involve a series of complementary structurally-, socioeconomically- and institutionally-oriented actions and initiatives that would guarantee the best economic outcomes.

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<sup>31</sup> It is critically important to note that the existence of 'favourable' socioeconomic conditions is not, in and of itself, sufficient justification for the pursuit of an inward-investment oriented approach designed to attract a particular sector or industry to a territory that has no pre-existing familiarity with, or competencies of relevance to it. Inward investment-oriented strategies will only succeed in first, attracting, and second, embedding (to the benefit of the host economy), the inward investment activities if there is a relevant foundation upon which they can draw. The reasons for this are two-fold. First, firms, increasingly guided by knowledge or competency acquisition intentions, are not attracted to environments from which they cannot benefit in one way or another. Second, a host economy will only benefit from the attraction of foreign firms and investment if it is capable of embedding it/them. Integration of this nature is not possible if local firms lack the skills, competencies and knowledge bases needed to engage, interact and develop relationships that will allow them to acquire knowledge from extra-local firms, and similarly, if workers lack the relevant skills and training needed to work for or provide services to the imported firms. Simply stated, the attraction of inward investment in a particular sector or industry to a region that is ex-ante not specifically suited to it will either be immediately ineffective or not sustainable. Trying to establish a new industry from scratch focusing only on the attraction of foreign firms is more likely than not to end up as a strategy of waste.

The reason for this is simple: local or regional economies are complex systems that feature and are characterised by any number of co-dependent relationships (Pike et al., 2017). The success of any given development action or intervention will therefore, almost inevitably, be a function of, and critically dependent on, several factors. Individual interventions along different development axes that together compose an integrated, multifaceted development strategy will, if designed appropriately with reference to local contextual conditions, work in a synergistic and mutually reinforcing manner to address all relevant deficiencies and produce outcomes that will exceed those unidimensional approaches rendered ineffective by the very factors and conditions they neglect.

#### ***4.2. Understanding and responding to local conditions with precisely-targeted interventions***

The strategies of waste presented in *Section 3.1* were plagued by a second weakness: the tailoring and targeting of the interventions by which the strategic approaches were composed often simply responded to theoretical tenets, without taking into consideration the conditions of the local economy. This was not the case in the strategies of gain.

The returns to the European Union's efforts to expand its transportation infrastructure endowment were limited in large part because of their indiscriminate and imprecise nature. That is, resources that were earmarked for infrastructure development were spent not on projects that alleviated particular bottlenecks or addressed deficiencies in the continent's transportation infrastructure network, but rather – and often because of aforementioned institutional failures – on larger scale, higher visibility projects in environments, regardless of their social and economic suitability. Infrastructure expenditure is subject to diminishing returns. Precise and efficiently targeted investments in environments that suffer from productivity-hampering infrastructure bottlenecks, deficiencies and shortages are therefore anticipated to yield considerably higher returns than those made in environments that are closer to or beyond the infrastructure frontier, as many of the European regions in which the infrastructure funds were spent, in fact, are. The continent's R&D drive was, to the detriment of the development outcomes it was anticipated to give rise to, pursued in a similarly indiscriminate and imprecise way. European regions, because of the inevitably heterogeneity by which they are characterised, have, as highlighted in *Section*

3.1, different facilities for the transformation of R&D activities, and the knowledge they yield, into innovation and, in turn, economic growth. R&D expenditure was, however, prioritized universally: it was not geared towards or targeted at the European Union's more developed, innovation prone regions, nor did consider or account in any way for the characteristics or attributes of the continent's lagging regions that could conceivably compromise their capacity to realise any benefit from it. The returns to this strategic approach in the European Union's innovation-averse, less developed territories were, therefore, meagre. In the Filipino case, the targeting failure was manifested in a complete neglect of the preeminent factor to which the limited returns to the country's robust medical education and training system – and the well-developed stock of skilled human capital it cultivated – were attributable. Policy-makers failed to target and, in turn, develop interventions to address the adverse demand-side conditions and issues (i.e. a dearth of higher-quality employment opportunities) behind the bottlenecks that hampered the capacity of economic actors to engage in productive activity and contribute to economic growth. The Peruvian special economic zone programme and the Greek science and technology park initiative suffered from a related targeting failure. In both cases, policy-makers pursued these interventions in environments that were less than able – due to a multitude of structural, socioeconomic and institutional deficiencies – to benefit from them. Because both the zones and the parks were conceived exactly as instruments to promote growth and development, the primary criterion considered in the targeting process was a region's level of development, overlooking the very fact that lack adequate of development could undermine the success of activities within the zones or parks. The initiatives were therefore pursued exclusively in less-developed regions that were at that stage far less favourably positioned to make the most of the investment.

Conversely, the strategies of gain examined were particularly impactful, in part, because of the way and extent to which they either targeted and mitigated the exact deficiencies that were hampering local and regional economic performance or, similarly, targeted and leveraged the advantages with which a region was endowed. The infrastructure development initiatives and actions undertaken in across Africa and in China and Bangladesh were geared exactly, in the former, to rectifying large-scale infrastructure shortages and, in the latter, to addressing and correcting bottlenecks and deficiencies in regional infrastructure networks. The environments in

which these efforts were pursued featured insufficiently developed infrastructure endowments meaning that any expenditure channelled towards their upgrading and expansion that would normally be subject to diminishing returns could yield returns in the form of economic growth and development. In the Dominican Republic, authorities recognised the advantages afforded to the country's economy by its physical and institutional proximity to the United States and, in turn, devised what would prove to be an especially successful special economic zone programme. The programme explicitly targeted and contained measures to leverage and capitalise on this particular strength. Similarly, efforts to reform the Vietnamese vocational and technical education system sought to address a pronounced flaw that plagued it: prior to the execution of these initiatives, the country's vocational and technical education system was all but completely detached from the labour market. Policy-makers engaged the private sector to correct for this and foster a greater matching between the education system and the skills requirements of firms to the benefit of newly educated individuals, those local firms and the economy more broadly. Brazil's APL policies rely, to a greater extent than any of the other policies and strategies considered here, on formalised processes that facilitate the efficient and effective targeting of the interventions by which they are composed. Great care and thorough analysis are exercised and employed when selecting the clusters that will be subject to policy actions. The consequence of this is that APL policies are only operationalised in environments where there is a reasonable, objectively informed expectation that they will catalyse local economic growth and development.

Ensuring that policy interventions are both tailored to the geographies in which they are pursued and targeted appropriately towards either a specific challenge or weakness with which it is faced or a particular comparative or competitive advantage with which it is endowed, should therefore be seen as essential if the scarce resources that are allocated to efforts to promote economic growth and development are to be deployed in an efficient and effective manner. Efficient policy 'tailoring' and 'targeting' akin to that exemplified by the aforementioned strategies of gain is facilitated by robust diagnoses of local conditions and the performance of comprehensive situational analyses.

Different regions are characterised by distinctly different strengths and opportunities, and, conversely, challenges and vulnerabilities that are the product of and shaped by local context. Analyses of these conditions shed light not only on where viable opportunities for sustainable economic growth lie and what they might be, but also on the weaknesses and vulnerabilities that the strategy must mitigate. These diagnostic processes function, in that respect, as means to cultivate and collect the sorts of insights that constitute the foundation of economic development strategies that respond and are tailored to local conditions and the opportunities they offer (e.g. Cities Alliance, 2007).

#### ***4.3. Understanding frontiers and diminishing returns***

Sections on the literature on economic growth have for decades emphasised the importance of the position of a territory in the development scale as a factor determining the expected returns of any type of intervention (Rostow, 1960; Gerschenkron, 1962). How close a territory is to a specific frontier can determine what type of investment is required to maximise the returns of intervention. It has often been argued that being far from a frontier allows countries and regions to pursue basic investment and factor-endowment promotion strategies more freely than in those cases where a specific territory is closer to its respective frontier – as indicated by Acemoglu et al. (2006: 68) when referring to the technological frontier. The closer a country or region gets to a specific frontier, the greater the likelihood that any intervention on that particular development axis may be subject to diminishing returns.

This seems to be confirmed by the cases reported in the empirical section. Countries and regions at earlier stages of development are able to address shortages in basic development factors without running the risk of suffering from diminishing returns. This has become evident with relation to infrastructure endowments. In the case of sub-Saharan Africa, Bangladesh or Yunnan province in China, considerable investments in road infrastructure yielded considerable economic growth, whereas this was far less the case in the less developed regions of the European Union. High distance to the infrastructure frontier in sub-Saharan Africa and the two Asian examples explain this outcome. Deep infrastructural shortages in sub-Saharan Africa meant that any additional kilometre of road contributed to addressing a fundamental shortcoming

of the local economy and to facilitate further development. Less developed regions of Europe, by contrast, were not in a position that infrastructure shortages prevented them from conducting basic economic activities. They were and are closer to the infrastructure frontier than countries in sub-Saharan Africa. Hence, additional investments in road infrastructure could only bring about significant economic returns if specifically targeted to addressing well-identified development bottlenecks. However, the indiscriminate nature of most infrastructure investment in the periphery of the European Union – frequently geared towards increasing the number of airports, ports or kilometres of motorways and high-speed rail – implied that this condition was not fulfilled and that the economic returns of additional investment were much lower, when not outright negative.

In particular, the diminishing returns of additional investment are affected by deficiencies in other development axes. Poorly targeted infrastructure investments in the European Union have been, to a considerable extent, a consequence of low government quality. Feeble governments and local decision-makers have often put short-term private and political gains before medium- and long-term sustainable socioeconomic outcomes (Crescenzi et al., 2016). Similarly, low quality institutions have dented the returns of R&D investment in the economic periphery of Europe (Rodríguez-Pose and Di Cataldo, 2015) or in the Greek science and technology parks. These cases of strategies of waste were far closer to the technology frontier than the more successful Brazilian APL clusters or the special economic zones in the Dominican Republic.

Hence, the farther a territory is from the frontier, the greater the likelihood that investments targeting basic deficiencies in infrastructure, human capital, and/or technological endowments succeed in delivering greater growth. Once the very basic needs for development to take off are fulfilled – that is, the closer a country or region comes to the infrastructure, human resources or technological frontier – diminishing returns are more likely to kick in, undermining the potential returns of any additional investment. Closer to these frontiers, a ‘switch’ is required (Acemoglu et al., 2006), implying a much more careful consideration of other factors influencing development and a more holistic and integrated development strategy.

#### ***4.4. Institutions, institutional reform and the pursuit of spatial development strategies***

The final lesson to be drawn from the cases presented in *Section 3* comes less from the underperformance of the strategies of waste and more from the successes of those of gain, and, more specifically, from a key factor to which their effectiveness is attributable: recognition of the ‘institutional dimension’ and of the importance of mitigating and minimising the potential for institutionally-related failures. This recognition was manifested in one of two ways.

First, the infrastructure-oriented interventions mobilised in China and Bangladesh, the APL cluster policies employed by Brazilian authorities, and Vietnam’s efforts to reform its vocational and technical education system all featured explicit actions and measures to promote technical development, institutional upgrading and capacity building. The function of these actions in each of the approaches was to facilitate the design, operationalisation, and ongoing monitoring and maintenance of the strategies themselves. They were, however, also employed with a view to leave a longer-term, lasting impact on the capabilities, efficiency and overall functioning of the institutions and institutional actors they target.

Second, the special economic programme pursued in the Dominican Republic was characterised by an ongoing attentiveness to the broader institutional environment. Attention was paid to and efforts were made to adapt the regulatory and governance framework within which the programme was pursued to ensure that the zones themselves were and would remain, even in the face of macroeconomic changes and volatility, competitive and, more importantly, capable of fulfilling their mandate as catalysts for economic growth and development. Moreover, the development and implementation of the programme was matched by the establishment of a purpose-built institutional body, whose principle function is to regulate and oversee the country’s various zones. This awareness of the institutional environment in which the development approach existed served to ensure that not only that the interventions were unimpeded by regulatory or governance-related inefficiencies or barriers, but also that the institutional framework itself evolved into one that actually provided support and was conducive to the strategy and its overarching objectives.

Consequently, the ‘institutional dimension’ is a fundamental requirement in the design and implementation of spatial development policies. More specifically, there is scope, if not an outright need, to both incorporate institutional reforms and capacity building initiatives into the development approaches themselves, and also employ a general awareness of – and where need be, to take action to address – broader institutional conditions and factors (Rodríguez-Pose and Garcilazo, 2015).

Capacity building and technical development-type interventions provide authorities, and institutional bodies more generally, with the capabilities, knowledge and resources (e.g. Whyte, 2004; World Bank, 2005; OECD, 2006; World Bank Institute, 2009). It should never be taken for granted, especially in less-developed contexts, that authorities have the competencies needed to initiate and enact development strategies. Capacity constraints are not uncommon in the developing and emerging world (e.g. World Bank, 2005; OECD, 2006; Cardenas, 2010; Sanghvi et al., 2011; Haque et al., 2015). Integrating these sorts of actions and instruments into development approaches serves to ensure – or at the very least increase the probability – that the viability, sustainability and performance of spatial development policies are not compromised or damaged by capacity deficiencies that are navigable and manageable.

Capacity constraints can exist in any number of forms. What exactly authorities do to address and mitigate institutional deficiencies will greatly depend on the nature of the deficiency. The outcomes of any development intervention are, for example, shaped by the quality and capabilities of the authorities that are tasked with its design, operationalisation and oversight. Technical deficiencies in the form of a lack of skills, knowledge, experience or competencies will undermine the execution of any exercise, policy or strategy. Capacity building efforts in environments plagued by technical shortages should trend in the direction of training initiatives and programmes, the establishment of knowledge-sharing programmes and initiatives or the use of external resources and expertise (i.e. short-term consultants) to shore up these skills deficiencies. Relatedly, certain environments will suffer from other types of resources shortages. Policy-makers may, for example, not have access to, or the resources (human and/or financial) and infrastructure to collect or cultivate, the data and information needed to design and, eventually, monitor and modify suitable development interventions. When this is the case, efforts



should be pursued to first identify the resources shortages before channelling financial resources accordingly. The provision of these resources must, where necessary, be accompanied by initiatives (including those outlined above) to ensure that the authorities to whom they are provided have the competencies and skills needed to make the most of them. There may also be scope here for intra- or interregional cooperation and resource sharing to address resource deficiencies and ‘stretch’ scarce resources. Similarly, vertical and horizontal coordination failures represent another type of institutional failing that can derail development actions. Misaligned incentives or priorities, or even an insufficient awareness of what other parties are doing or responsible for will lead, at best, to overlaps that result in an inefficient deployment of resources or, worst, oversights and failures that will undermine the success and viability of otherwise sound interventions. Capacity building actions to address institutional obstacles of this nature will focus on the facilitation of communication and dialogue, the promotion of transparency and clarity and the clear delineation of responsibility. The identification and appointment of leaders or, relatedly, the establishment of specific bodies or institutions with narrowly and explicitly defined mandates represent means to achieve the latter end. This is by no means an exhaustive list of the institutional failings to which territories, and underdeveloped ones in particular, fall victim. It is provided merely to illustrate that simple solutions for all of the institutional deficiencies to which a particular region could conceivably be susceptible may be difficult to achieve. With this in mind, it becomes clear that the starting point for any effort to address institutional bottlenecks is their exact identification. By taking steps to identify and understand the nature of the institutional challenges they face, authorities can devise the most suitable reforms to address and overcome them.

Capacity building efforts should be matched by a general awareness of the efficiency, soundness and functioning of the broader institutional environment. With the ‘institutional turn’ has come the increasingly widespread consensus that the effectiveness of any given development strategy will be mediated in one way or another by the institutional environment in which it is pursued. Rodríguez-Pose (2013: 1043), in fact, goes so far as to assert that “development strategies need to understand and be specifically tailored to the potential of place-bounded institutions in order to make the most of [other interventions]”. Ignorance of institutional factors

and conditions could therefore be, in and of itself, sufficient to derail what may otherwise be sound development strategies.

These two ‘lessons’, and the first one in particular, should ring especially true in devolved contexts. Subnational governments have, via the processes of devolution that have and continue to transpire across the emerging world, been afforded both the opportunity to implement development interventions that are reflective of local needs, preferences, priorities and contextual conditions and the more general capacity to tailor expenditure and decision-making in these directions as well (e.g. Ascani et al., 2013; Rodríguez-Pose and Wilkie, 2017b).

This can, as the Bolivian experience would seem to suggest, yield profoundly positive outcomes. Faguet’s (2004) examination, for example, of the post-devolution expenditure patterns of Bolivian municipalities revealed that authorities did capitalise on the resources and autonomy entrusted to them and channelled resources towards the provision of public goods and services in a manner that was consistent and coherent with the preferences of the citizens of, and the contextual conditions in, the jurisdictions for which they are responsible. Outcomes like these are, however, far from assured. Empirical analysis has, for example, indicated, first, that decentralisation – especially in the face of poor local government quality – may not only have little to no effect on economic performance but, in some circumstances, can actually hamper it (Rodríguez-Pose and Ezcurra, 2011; Ezcurra and Rodríguez-Pose, 2013) and, second, that in less developed and emerging contexts, decentralisation can exacerbate regional inequalities (Rodríguez-Pose and Ezcurra, 2010).

Whether devolution yields more-favourable outcomes, as in the Bolivian case, or less-favourable ones depends critically on the institutional context within which it is pursued and, more specifically, on the capacities and capabilities of subnational authorities. That is, capacity constraints may, according to Rodríguez-Pose and Ezcurra (2010: 622) “limit the potential of subnational governments to make the most of [decentralisation]”. The implementation of capacity building exercises, as advocated for above, could therefore go a considerable way towards mitigating what Parker and Serrano (2000: 26) term “one of the biggest challenges confronting local institutions as well as managers designing and implementing programs of

development” and, in turn, ensuring that subnational authorities can fulfil their responsibilities, whether they relate to the design and implementation of development policies or otherwise.

## ***5. Where should different types of strategies be implemented? Designing contextually suitable strategies.***

Territories require, as we have asserted in previous sections, development approaches that respond to the scale, scope and nature of the development challenges they face and the opportunities and potential with which they are endowed. It is therefore impossible to state where exactly different policy types should be pursued.

General guidance as to how strategic approaches should be designed for different types of territories at different points on the development spectrum can, however, be provided. More specifically, the following section reflects on the nature of the development challenges with which different types of territories are confronted to construct a broad taxonomy of territorial development approaches.

Our taxonomy is founded on the notions of what we term (1) *complexity* and (2) *breadth of scope*. *Complexity* is understood as a function of the number and diversity of the individual elements or interventions by which a broader strategic approach is composed. More tangibly, an integrated strategic approach that features a diversity of mutually reinforcing interventions and works across a range of development axes is deemed more complex than one that relies on a single type of instrument or action to affect change. *Breadth of strategic scope* refers, on the other hand, to the narrowness of the development outcomes or objectives by which a strategy is guided. The strategic scope, for example, of an approach that pursues a single, narrowly and precisely defined development outcome is narrower than that of one that aims to affect more broad-based, economy-wide change.

We posit that the approaches employed by territories at different points on their respective growth trajectories should, *irrespective of the development axis (or axes) to which they are oriented*, differ in terms of their complexity and the breadth of their strategic scopes in

ways that reflect the nature of the most immediate development challenges with which they are faced. Our perspective is entirely consistent, in that respect, with the now well-established notion that, because developed and developing countries differ in terms of the challenges they face, and will tread different paths towards development,<sup>32</sup> the development policies and strategies designed for and undertaken in the 'Global South' can differ from those pursued in the more economically developed 'Global North'. We do, however, in some respects, push this notion a step further. That is, implicit in *Sections 4* and *5* is the proposition that not only should the types of strategies and approaches relied upon in developing contexts not be lifted from or mirror those that have been pursued in developing areas. It would be dangerous to assume that a strategic approach that worked in one developing territory will be remotely suitable for a different, but similarly developed (or underdeveloped) one. *Simply stated, there is scope (if not an outright need) for considerable policy heterogeneity even within the Global South.*

The underperformance of territories at the very bottom of the development spectrum is often attributable, at least in part, to fundamental structural deficiencies. These inadequacies are generally not difficult to identify nor are they insurmountable; policy-makers in Bangladesh and Central Yunnan, for example, found success channelling financial and other resources towards the construction of basic physical infrastructure – roads, bridges, etc. – the absence of which was both a readily apparent and pronounced impediment to economic dynamism (*Section 3.2*).

The shoring up of deficiencies of this nature is, however, wholly prerequisite for the achievement of economic growth and development and, moreover, lays a foundation upon which subsequent development efforts can build. The scope of the territorial development policies pursued in these environments should therefore not extend beyond addressing these specific debilitating deficiencies. Their complexity needs to be kept to a minimum as well; not only are less integrated approaches often sufficient for managing deficiencies as precisely defined and comparatively basic as those by which the most economically underdeveloped of environments tend to be faced, they are less prone to derailment by the technical capacity constraints that are not uncommon in these contexts (*Section 4.4*).

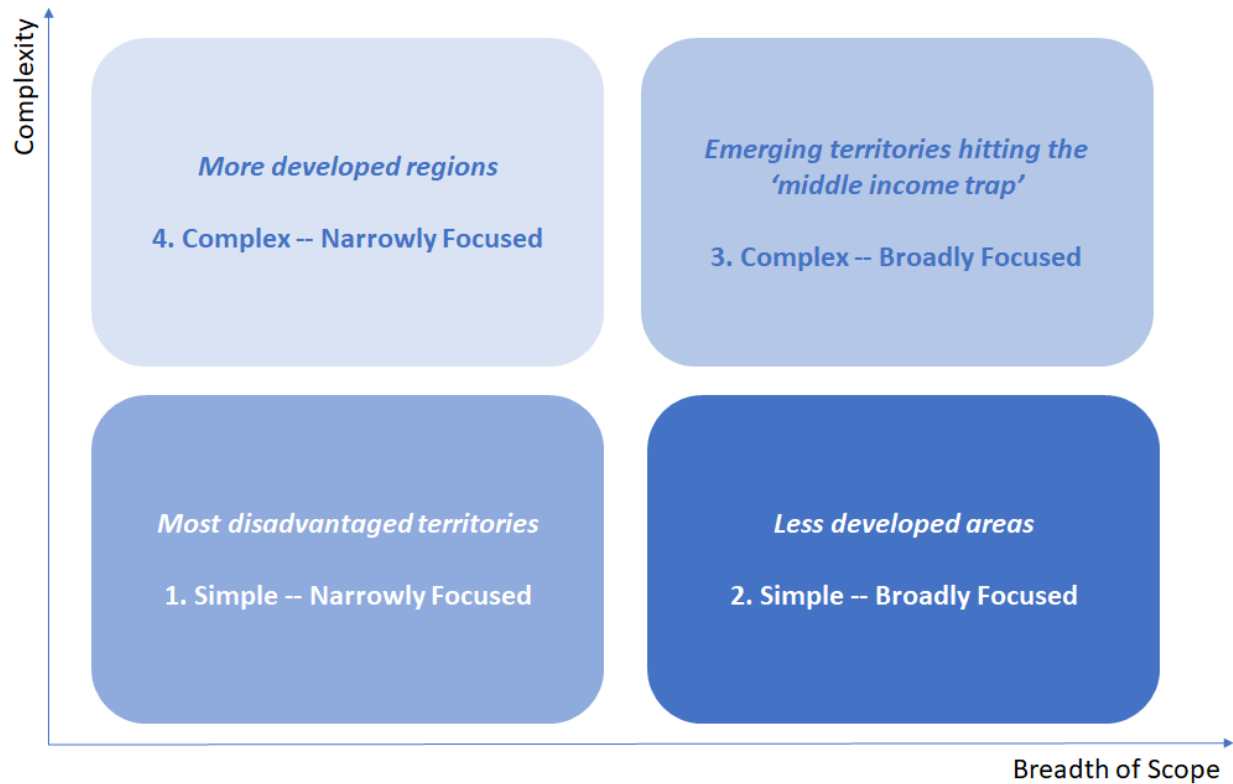
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<sup>32</sup> The recognition of the heterogeneity of the "problems" faced in the past by what are now developed countries and those with which developing countries are currently grappling was in fact, as Chant and McIlwaine (2009:26) observe, the impetus for the establishment of 'Development Theory'.

*Simply stated, development approaches designed for the most economically disadvantaged of territories would benefit from being characterised by a minimal degree of complexity and feature relatively narrow strategic scopes. We term this first type of strategic approach ‘simple and narrowly-focused’ (Figure 5).*

As we move up the development spectrum to underdeveloped territories where pronounced challenges remain but the debilitating factors of the sort highlighted above are less ubiquitous, the strategic scope of territorial development approaches can begin to widen. The development challenges by which territories like these are faced relate less to rectifying and overcoming specific barriers that are *preventing* economic growth and more to cultivating a broader socioeconomic context that underpins, and is itself supportive of, all manner of economic activity with an ultimate view to *spark* and *actively promote* dynamism and development. In Vietnam, for example, authorities prioritised general upskilling and human capital development to initiate the transformation of the country’s labour force into one that could participate in and contribute to the drive towards industrialisation and to its more general efforts to place the economy on a sustainable and rising growth trajectory (*Section 3.2*).

*Figure 5. A ‘complexity-strategic scope’ based taxonomy of development approaches*



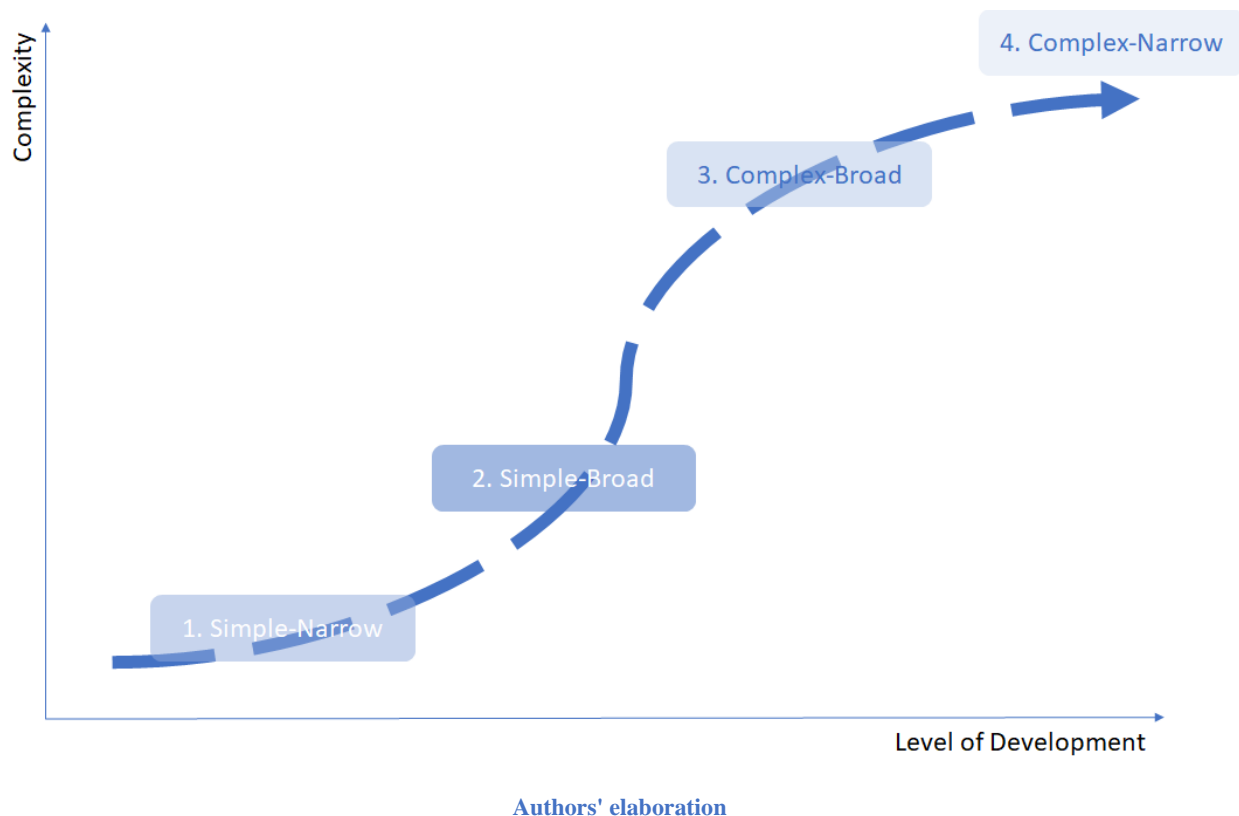
Authors' elaboration

It follows that the narrow focus that should be characteristic of the development approaches undertaken by the most economically disadvantaged territories need to be replaced here by a concern for affecting more broad-based change. Once again, however, these strategies need not be overly complex. They will in all likelihood, because of the more broadly-defined development outcomes they pursue, rely on a comparatively greater number and diversity of individual interventions. That said, technical capacity constraints that compromise policy efficiency and effectiveness remain a concern for policy-makers in these environments (*Section 4.4*) and, moreover, the change these approaches seek to affect – i.e. more general contextual upgrading and conditioning – is still sufficiently fundamental that the degree of integration and multidimensionality by which they are characterised need not be massive.

*Development approaches that are simple in nature and but broad in strategic scope are most suitable for less economically developed territories. 'Simple and broadly focused' strategic approaches are the second type included in the taxonomy (Figure 5).*

A different tact will need to be taken in emerging territories. The most pressing development challenge that they tend to face relates not to addressing debilitating structural deficiencies or weaknesses in underlying socioeconomic fabrics, but rather to the avoidance of economic stagnation and of something akin to a ‘middle income trap’ (e.g. Nallari et al., 2011; Kharas and Kohli, 2011; Eichengreen et al., 2013). That is, these territories have often successfully navigated a range of more fundamental development challenges – including those addressed above – and, in turn, likely benefitted from a sustained period of economic expansion. The pace of that growth will, however, be slowing or, in more extreme cases, have stagnated.

Figure 6. The ‘complexity-economic development’ nexus



The options for escaping this so-called ‘trap’ are few. Meaningful increases in productivity (e.g. Kharas and Kohl, 2011) are perhaps the best way to break out of the trap. This involves repositioning the economy *as a whole* towards higher-value added, more knowledge-intensive activities and undertaking a range of institutional reforms to make the territory amenable, if not wholly conducive, to innovation and more technologically sophisticated activity (Rodríguez-Pose and Di Cataldo, 2015).

Suffice to say, strategic approaches undertaken in these emerging environments should, like those pursued in the aforementioned less developed territories, be broad in strategic scope; they will, after all, be geared towards economy-wide reformation. The nature of the change these approaches must aim to affect, however, demands that they be far more complex, integrated and multidimensional than those designed for environments less developed than they. That is, repositioning an economy and, more specifically, upgrading its innovative potential and capacity to engage in knowledge-intensive activities entails working across structural, socioeconomic and institutional dimensions which, in turn, implies that strategic approaches need to be composed of a diversity of mutually reinforcing interventions and actions that span these, and other, development axes.

*Emerging territories therefore have little choice but to pursue more complex, integrated development approaches that operate across several development dimensions and are oriented towards affecting broad-based, economy-wide change; such approaches are understood in our taxonomy as ‘complex and broadly focused’ (Figure 5).*

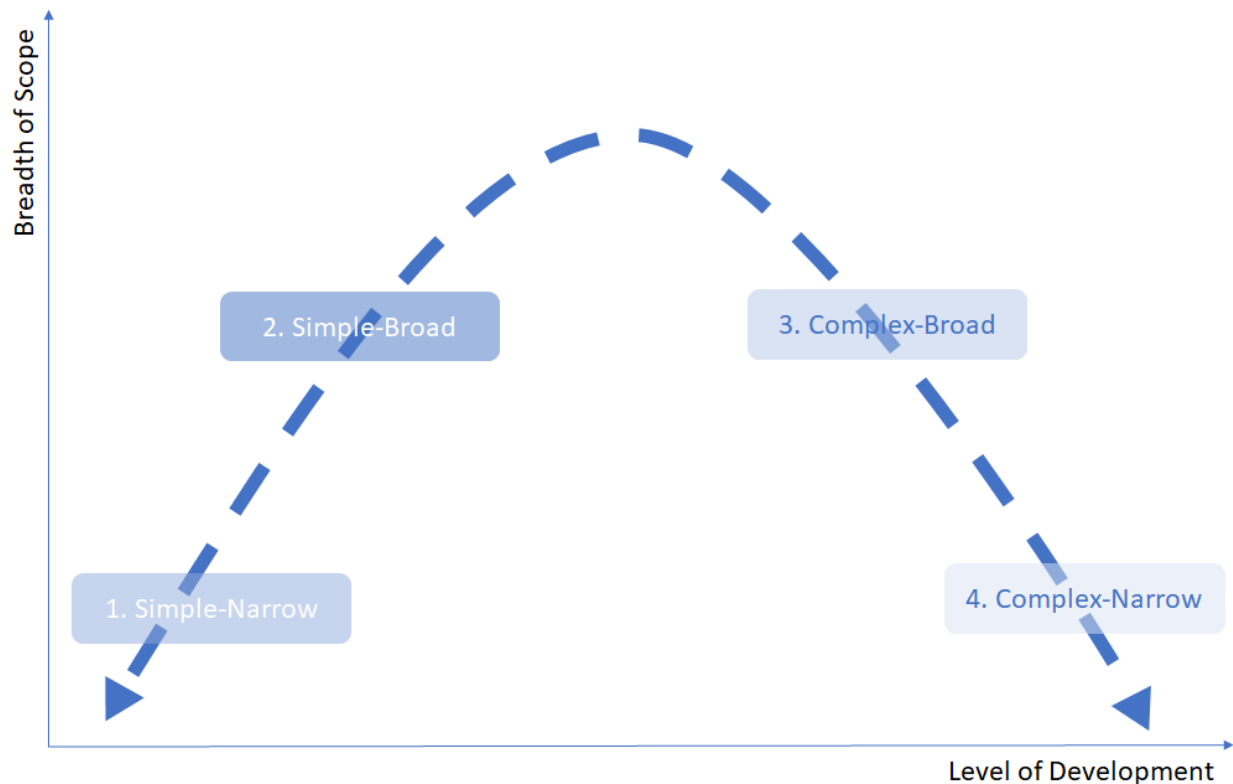
In more developed territories, the focus shifts away from development challenges per se towards what can be considered development opportunities. That is, more economically advanced territories will likely – whether it is due to resource endowments or constraints, the economic activities they engage or specialise in, or any other number of territorially-unique factors – have specific avenues available to them that they may pursue to promote further growth and development. Moreover, the returns to broad-based reform will be limited in these more dynamic territories where growth-impairing structural, socioeconomic or institutional deficiencies are fewer and further between and, in turn, the scope for generalist, ‘corrective’ interventions is far less necessary.

The job of policy-makers in these environments is therefore to, first, identify where these latent opportunities lie and, in turn, develop focused policies geared narrowly and explicitly towards their exploitation. More complex, multidimensional approaches should be relied upon to do so. Policy-makers in these environments are often unencumbered by resource and/or technical



capacity constraints leaving little reason not to pursue the integrated, multi-axes approaches that, as previous sections have suggested (*Section 4.1*), are anticipated to yield the greatest returns.

Figure 7. The ‘breadth of strategic scope-economic development’ nexus



Authors' elaboration

*The fourth and final type of approaches included in our taxonomy are those that are ideally suited to the most economically developed of territories. These integrated approaches will pull a range of policy levers to achieve precisely and narrowly defined objectives and are thus referred to as ‘complex and narrowly focused’ approaches (Figure 5).*

## 6. Conclusions

The development policy landscape has, in recent years, been dominated by four types of interventions each of which finds its conceptual or theoretical underpinning in a different theoretical perspective or paradigm (*Section 2*).

1. Infrastructure-oriented development approaches emerged from a neoclassical growth theory that understood economic growth as a function of the relative availability of different factors of production – capital, technology and labour – the productivity of which could be positively augmented by investment in and the expansion of regional infrastructure endowments;
2. Policies and interventions geared towards the establishment of ‘growth poles’ via the attraction and concentration of external investment and non-local firms grew out of ‘growth pole’ theories that posit that the economic fortunes of entire regions are linked to the success and dynamism of single points or nodes within them;
3. The endogenous growth theory, and, more specifically, an awareness of the first-order importance of knowledge and technological progress placed both regional innovative capacities and regional human capital and skills endowments squarely in the crosshairs of policy-makers and gave rise to a host of innovation and skills oriented-interventions and policies; and
4. Strategic efforts to promote the physical co-location of firms and the establishment of clusters of economic activity were inspired by theories proposed by both the urban economics and new economic geography schools as well as by cluster and industrial districts theories that suggest that the operation of economic actors in close physical proximity gives rise to productivity enhancing externalities from which those actors, and by extension the cluster and the region that hosts it, benefit.

Policy-makers in developed, emerging and developing contexts alike have turned to one or more of these strategic interventions to increase the economic dynamism of the territories for which they are responsible (*Section 3*). The performance history of each of the four broad policies types includes both instances of success (*Section 3.2*) and failure (*Section 3.1*).

Moreover, one instance of success or failure does not imply that a particular approach can be, reproduced everywhere or universally condemned; what might amount to a strategy of waste

in one territory could perhaps be usefully employed in another, or, conversely, there is no assurance that the success of a strategy of gain in a certain territory at a certain point in time could be duplicated elsewhere. Simply stated, no one *type* of intervention on its own is more likely than the next to amount to a failure – strategy of waste – or a success – strategy of gain. The success or failure of a particular intervention is seemingly a function not necessarily of what theoretical strand it is based on or of what it focuses on to impel growth but rather of where, how and by whom it is pursued. This, of course, begs the question: what makes for a successful development policy or intervention?

A review of a handful of both strategies of gain and strategies of waste revealed four key differences between them from which policy implications were inferred:

1. Territorial development policies must operate across and address more than one development axis. Because of the way and extent to which processes of economic growth are governed and mediated by any number of contextually-specific factors, characteristics and attributes, strategic approaches to economic development are more likely to be successful if they are ‘multidimensional’ in nature. Hence, concerted efforts are needed to integrate and balance interventions that target all relevant development axes;
2. Territorial development should rely on robust diagnoses of local economic conditions to facilitate, first, the tailoring of the interventions by which they are composed to the specificities of the territory in which they are to be pursued. Second, interventions need to be targeted towards specific weaknesses, deficiencies or bottlenecks that represent genuine and pronounced impediments to regional economic growth and dynamism, or to foster any advantages or opportunities with which a region might be endowed;
3. The stage in the development spectrum where a territory finds itself matters for the type of approach that needs to be adopted. The greater the endowment shortages and the farther away from infrastructure, human capital and technology frontiers, the greater the chance that basic investments in human capital, technology and, above all, infrastructure

may lead to significant economic growth. Once basic endowments in one or more of these areas are covered, the risk of diminishing returns to additional investment increases; and

4. Institutionally-oriented interventions and actions – capacity building efforts, technical development exercises, institutional reforms and the like – must be integrated directly into territorial development strategies.

The potential of theory-led development approaches – whether infrastructure-, inward investment-, innovation-, skills- and cluster-based – to spatial and territorial development strategies is considerable if the four principles outlined above are taken into consideration. Development approaches can serve as catalysts for regional economic growth and socioeconomic development in radically different contexts. Yet the line separating development interventions becoming strategies of gain from strategies of waste is thin. Policies and programmes that are both composed of and balance numerous mutually-reinforcing interventions and tailored and adapted to local conditions and realities and are integrated into broader strategic efforts and plans are likely to have a greater economic impact. Efficiently and effectively gearing intervention towards the challenges facing any given place and to the opportunities with which it is endowed, while taking into account the institutional context in which it is operationalised – and, should the need exist, being able to upgrade and rectify deficiencies from which it suffers – can deliver better results than simply basing intervention on one particular, often ‘fashionable’, theoretical strand. Processes of economic growth are not governed by one single influence. They are shaped and mediated, at any one time, by any number of socioeconomic, structural and institutional factors – all of which must be taken into account and addressed by efforts that aim to stimulate such processes. Moreover, these processes of economic growth transpire in different ways across heterogeneous contexts – that is, they react differently to different realities – simply because contextual conditions impose different challenges and offer different opportunities and avenues for growth. The key to success in the design and operationalisation of policy interventions is thus ensuring that these approaches are not detached from this reality. Adherence to the aforementioned four principles will, in most cases, increase the probability that

interventions do not fall victim to this pitfall and that the promise and potential of economic development interventions is fulfilled.

The provision of policy guidance more specific than this is challenging. Notably, we must refrain from prescribing infrastructure-based, inward investment-based, innovation- or human capital-oriented or cluster-based approaches to heterogeneous territories in a categorical or definitive manner. It would be unwise, for example, to assert that any one of these approaches is more or less suitable for a more or less economically developed territory. What we can do, however, is reflect on the nature of the development challenges by which different types of territories at different points on the development spectrum are faced and devise more general guidelines centring on the notions of policy ‘complexity’ and ‘breadth of strategic scope’.

We posit that (i) the most economically disadvantaged territories should embrace strategic approaches that are simple in nature and narrow in scope; (ii) that less economically developed territories should opt for simple, but more broadly-oriented strategies; (iii) that emerging territories should rely on broad-based approaches that are, on the other hand, more complex and integrated in nature; and (iv) that the more developed areas should turn to strategies that are, again, complex but are narrowly and precisely targeted to affect change. Strategic approaches to development cannot be designed on the basis of this taxonomy alone. That said, it does provide policy-makers with a framework and a set of criteria for thinking about what a suitable approach for the promotion of economic development in the territories for which they are responsible should (or should not) look like.

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