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ECONOMIC GROWTH AND ECONOMIC DEVELOPMENT: GEOGRAPHIC DIMENSIONS, DEFINITION & DISPARITIES

"Sacred Cows Make the Best Hamburger"

Maryann Feldman and Michael Storper

Bringing geography and economics to the same table

Economists have asked why certain places grow, prosper and attain a higher standard of living at least since Adam Smith's *The Wealth of Nations* in 1776. Smith was motivated to understand the reasons why England had become wealthier than continental Europe. While Smith is widely considered the father of modern economics his most important theorems originated in geography. When he said that "the division of labor is limited by the extent of the market," he was referring to the geographical extension of market areas in Scotland as transport costs declined, which in turn allowed larger-scale and more geographically concentrated production, organized in the form of the factory system. The transition from artisanal production to a modern industrial economy, with a 4800 per cent productivity increase, was intrinsically geographic.

The transition that Smith analyzed was profound: artisans disappeared; production become more centralized in large factories and towns, creating a geography of winning and losing places; while the incomes of industrial capitalists increased a new industrial working class faced lower incomes than artisans and more difficult working conditions. Still, there was a long-term take-off of per capita income that ended centuries of economic stagnation in the West (Maddison, 2007). Critically, Smith, and others, showed that the division of labor inside the new factories was key to the astonishing productivity gains of the factory system, but that it also picked winner and losers in terms of both individuals and social relationships and geographic places. Smith was not only

concerned with the positive aggregate economic effects of the new system, but also the more complex picture of human and geographical development (Phillipson, 2010).

The processes of change that motivated Adam Smith are still at work and are no less complex or profound. Just like Smith's industrial revolution, the much-heralded Knowledge Economy has created significant wealth, but the distribution of benefits is highly skewed. Indeed, there are elements of a winner-take-all tournament that favors the lucky highly skilled, with increasing income disparities. Many individuals with high levels of human capital face economic insecurity and diminished career perspectives. These dilemmas are not new: from the time that Smith wrote in the mid-18th century, through Marx's reflections of the mid-19th century, income disparities were so great that the viability the whole industrial-market (or, for Marx, "capitalist") system was called into question. The system was prone to wild swings in performance, diminished growth prospects, and deteriorating social conditions. In the 20th century these conditions spawned political instability witnessed by revolutions, and the rise of nationalism, fascism and communism. Yet in the long sweep of history, capitalism has generated the biggest boom with increases in standards of living never before imaginable for the majority of the world's population.

Even in the worst of times in the past, there were very wealthy local economies; just as in the best of times in the past, there were pockets of stagnation and poverty. The objective of this chapter is to provide a review of the intellectual history of economic geography as it relates to economic growth and economic development. We will show that economic development always has a complex interplay of winners and losers in terms of groups of people and types of places. Yet this pattern is not immutable. The less-successful people and places represent under-utilized capacities of the system. Moreover, the progress of the modern capitalist economy always begins in specific particular places; it does not spring uniformly from all territories at the same time, but diffuses from innovative places to other places across the economic landscape.

After we investigate the geographical dynamics of economic growth, this Chapter defines some new approaches to address the down-sides of the process. To do so, we will challenge some of the sacred cows of economic theory and policy to make a new meal or even a feast of future possibilities. The conventional wisdom tinkers at the margins of the growth process but does little to address the ways that the economy picks

winning people and places, and under-utilizes the capacities of other people and places. By contrast, we shall show that with a deeper understanding of the geographical wellsprings of growth and development in capitalism, there are opportunities for higher growth and, most importantly, better development for both people and places.

The Inter-relationship of Growth, Development and Geography

Economic theory has long recognized that the relationship between the quantity of growth and the quality of economic development is a complex one. In policy circles, however, growth and development are frequently conflated. Economic growth is a primary focus of macroeconomists, who rely on quantifiable metrics such as gross national product or aggregate income (Feldman, Hadjimichael, Kemeny, and Lanahan, 2014). Economic development was for a long time relegated to practitioner domains, often related to infrastructure, public health or education in poorer countries. For much of the 20th century, experts relied on specific outcome measures that, while policy relevant, could not be convincingly linked to a broader picture of growth or to a longer-term pathway of qualitative improvement in development. In some countries, increases in education did not lead to long-term growth, for example; while in others, it seemed like growth came first and education was an outcome.

This leads back to the core debates about directions of causality and need for systemic understanding of these relationships. Taking one extreme, some argue that the same ingredients that generate aggregate growth can be counted on to deliver qualitative improvements in human welfare. That there is a strong correlation between per capita income and the Human Development Index (HDI), in the range of 0.95 suggests that the development and growth are interrelated (McGillivray and White 1995). Others argue that the real sequence – in time and space – of improving income must start with directly improving human welfare, will deliver the growth that will, in turn, deliver further improvements in per capita income, and subsequently better human welfare (Barro, 1991; Dasgupta and Ray, 1986). Complicating matters, professional practice in poor countries emphasizes direct improvements in welfare as the kick-starter to growth, while in developed countries policy tends to emphasize kick-starting growth, based on the implicit assumption that growth will increase human welfare (Easterly, 2012). In any event, we no

longer have the hubris that once existed in the economic development field, which assumed that the path of economic development was linear with an always positive and increasing improvement in both development and growth (Dasgupta, 1993).

With larger samples of growth and development experiences to study, the lesson is that growth does not occur automatically and continuously improve human welfare. Moreover, even when processes of economic growth and development appear relatively robust, there is an uneven geographical distribution of the benefits. All places do not rise, or fall, at the same time; indeed, there are frequently contrasting processes at the same time across different neighborhoods, cities, regions, and countries.

This realization led to an explosion of interest in the micro-economic foundations of development, that considers the economies of places as products of history and local institutions, and as differently-structured environments where people live, work and invest. This opens up a completely original line of inquiry into the relationship of growth and development: it is not only any set of contributing "factors" that enable growth or development, nor how they flow (or "sort") into countries and regions, but how these factors come together – interact -- in intricate ways. These ways differ across space and time because human rules, institutions, habits, norms and conventions vary across time and territory.

Geography is a fundamental ingredient in economics

The relationship of geography and economic development presents itself somewhat differently in very poor places as compared to the world of middle- to upper-income regions and countries. In the former, development cannot get started without basic institutions such as property rights, a solid legal system, and infrastructure that make local and long-distance commerce possible (World Bank, 2009). In the latter, i.e. the majority of the "world market" countries, these basic conditions are already in place, yet significant geographical disparities in income and human development persist. We will address the rest of this paper to the middle- and upper-income countries and regions of the world, as a very different discussion of geography and economics would be required to address policy in the poorest places (Collier, 2007).

There was a time not too long ago when economists were preoccupied with models that rendered spatial disparities as uninteresting temporary disequilibrium (Borts

and Stein, 1964) while geographers focused on complex phenomena described in detailed case studies. There were also notable differences in normative perspective. Economists were not fundamentally worried about geographical disparities in development, while geographers tended to be more radical, with a focus on social concerns and left-behind places. Data was a limitation as were empirical methods and visualizations. Yet as frequently happened in scientific disciplines, fields converge and recombine to form new fields of inquiry. This happened over the past thirty years in economics and geography. Paul Krugman (1991a,b), unsatisfied with the observation that per capita income never seemed to converge between places – a prediction that was at odds with the theoretical predictions of neoclassical growth theory – launched a new research trajectory, declaring that "I have spent my whole professional life as an international economist thinking and writing about economic geography, without being aware of it" (Krugman 1991b: 1). Geographical differences in development, Krugman observed, were of secondary importance because economic models could not address them as a central part of the market economy. As noted, economists tended to use models that assumed away distance or relegated economic disparities to temporary disequilibrium from frictions due to factor mobility. The founders of the new geographical economics in the early 1990s– Krugman, Fujita, Thisse and Venables – showed that by incorporating economies of scale, product differentiation, and trade costs into models of the location of firms, it would be perfectly natural for a market economy to concentrate firms together, and in turn it would be perfectly natural for people – in their dual roles as workers in firms and consumers – to also concentrate (Fujita, Krugman, Venables, 1999; Fujita and Thisse, 2002).

Agglomeration economies, clustering and urbanization are not imperfections of the modern capitalist economy, but part of its essence. This is not a new insight, but a more rigorous formulation of long-standing wisdom. Examining Britain at the height of its industrial power, Alfred Marshall (1919) referred to localization as a phenomenon that can be observed throughout human history — the right place at the right time. At any given moment, the most developed regions or countries specialize in the most advanced industries, which in turn takes the form of their spatial concentration.

The recognition that agglomeration is hard-wired into capitalism gave rise to a problem for the pre-existing conventional wisdom about spatial equilibrium. If

agglomerative forces are very powerful, then it would be impossible for factor mobility to counteract it and thereby to even out the landscape of production and incomes. Thus, it goes against the grain of contemporary general spatial equilibrium models (cf. Glaeser, 2008). It also opened up a major normative debate in economic geography: aggregate efficiency comes from strong agglomeration, but this comes possibly at the price of equity between cities, regions and nations. In this way, the geography of development entered the very heart of the economics of development**.**

The process of development: the *nouvelle cuisine* of economics and geography

The closer relationship of geography and economics does not stop with the key observation that there is a deep tension between development and territorial equity or convergence, because it opens up hitherto unexplored mechanisms for spreading wealth, on the one hand, and for creating it in more places, on the other. The core of all this is the economics and geography of knowledge or innovation.

In the classical definitions of growth, from David Ricardo (1891) to Robert Solow (1956), the economy is a kind of machine that produces economic output, which is a function of inputs such as capital, labor, and technology. The different factors considered in growth models up to that time – such as "augmenting capital and labor," and including more education, better infrastructure, and better health -- were shown by Solow to explain a relatively limited part of the actual amount of observed economic growth since the Industrial Revolution. He concluded that technological innovation must be generating more output per unit input over time and that this was leading to greater total factor productivity. Yet even if innovation were a possible cause of greater efficiency in certain industries, it would still be very costly to the economy due to the diminishing marginal returns to augmenting the inputs to innovation.

Robert Lucas (1988) and Paul Romer (1986) solved this problem by challenging the classic assumption of constant or decreasing returns to scale by pointing out that knowledge is different from every other input to the economy. True knowledge has increasing returns to scale due to externalities inherent in its creation and application. Rather than diminish, the value of knowledge actually increases with use due to network

effects, cumulative reapplication, path dependencies, non-exclusivity, and spillovers – the recombination through leakage, leading to more and better uses. This insight explains why, from 1820 onward, capitalism has been able to spring the Malthusian trap of the stagnation in worldwide per capita income that existed from the year 1000 until the Industrial Revolution (Maddison, 2007). Moreover, since 1820, not only has global per capita income steadily increased, but it has done so in the context of a world demographic boom.

However, the modern era's astonishing growth is distributed unevenly across people and places, and it has periods of retrenchment as well as boom and, as previously noted, a fundamental trade-off between efficiency and inter-place convergence of development is implied by the agglomeration models of the New Economic Geography. But the new economics of growth, centering on innovation, suggests that there are other possibilities. For starters, the forces that create innovation also create far-flung production chains that spread knowledge, diffusing it away from the places that initially create it (Grossman and Helpman, 2005; Iammarino and McCann, 2013). If some places are better at innovating than others, and hence are wealthier, why not think about a new type of development policy, based on spreading out innovation capacities or creating them in more places? This might offer hope for income convergence. This hope is not offered by factor mobility between places, the core recipe of traditional models in regional and urban economics, or simple liberalization of trade, the core recipe of international development economics.

We will show that investments in capacity that generate innovation have increasing returns for the regions, firms and workers who exercise them. Virtuous self-reinforcing cycles of economic development that are also widely spread in geographical terms can more widely share out desired social and economic outcomes of prosperity and more sustainable economic growth. An innovative place-based development policy approach counters the potentially negative spiral of geographically-restricted development in three ways: its overall goal is for more and more economies to have non-routine (innovative) functions in their economic mix; it is based on expanding the sources of creativity and satisfaction that are good in and of themselves on human grounds; and it starts with investment in basic capacities that are

essential to a dignified and creative life, as argued by Amartya Sen (Feldman et at, 2014).

Back to fundamentals: the states and markets debate

The relationship between government (or the State) and development, requires more exploration. Mainstream economic theory is wary of government intervention in markets, but it does justify public policy to correct market failures (Laffont and Tirole, 1993). Market failure takes many forms, from externalities, market power that inhibits competition, information asymmetries that prevent efficient transactions, and incomplete provision of certain kinds of goods and services. In the specific field of industrial policy, the most widely accepted rationale for public action are externalities in R&D and knowledge creation. Firms cannot appropriate all the benefits of their own investment in knowledge because some of these accrue to other firms or sectors. The social return on investment on R&D and knowledge creation is larger than the private return. Hence, the R&D effort will be below that which is socially optimal. As a consequence, there is a role for the public sector to organize publicly funded R&D or to enhance the incentives of private firms to invest in knowledge creation.

Knowledge does not only spill over from one firm to another; many of the benefits of knowledge created in its country may in fact accrue to firms in other countries. This point is also relevant at an inter-regional level with a single country. This is why both the US government (and to a growing extent, the EU) fund many fields of research, since otherwise the states or regions would be faced with leakage of the benefits of their investments to other areas and would hence withhold such investments.

While market failure leads some economists to admit a theoretical role for a mix of regulatory and investment policies (Laffont and Tirole, 1993), some claim that these measures lead to "government failure," where the medicine is worse than the ailment. In their view, government is intrinsically beset by rigid bureaucracy, entrenched interest groups and inadequate information, such that interventions become ineffective or actively harmful. The empirical evidence is on these questions is much more nuanced, with many cases of public stimulus of subsequent private success (Mazzucato, 2013). Detailed empirical analysis of market failures is required to determine when to intervene and good

quality of public administration is required so that the intervention is well executed. This – rather than either of the extreme positions – is where reality lies.

But the real policy world often does not respect the fine points of what theory and evidence say about dealing with market failures. Starting in the 1980s, the Reagan-Thatcher Agenda was blindly hostile to regulation and public goods; it is sometimes called "neo-liberal," a pejorative label for an extreme *laissez-faire* political philosophy (Fawcett, 2014). Decades on, it has run its course, having failed to protect the public from predatory economic behavior in the form of monopolies, crony capitalism, rent-earning behavior, and private provision of certain goods that is worse and more costly than public provision. Yet, there is as yet little agreement on where now to put the cursor for government intervention, and on the specific policies to implement and investments for government to make. In the United States, there is still a strong contest between proponents of austerity and minimalist government (at the local level as a supposed way to stimulate entrepreneurial energy) and traditional macroeconomic Keynesianism (as a way to stimulate development via demand). But neither of these perspectives responds to the issues that are specific to the ongoing process of economic development nor its geography. Hence we now turn to some new microeconomic foundations of innovation and production, and their geography.

An Alternative Definition of Economic Development

Inspired by Sen (1990), Feldman et al (2014) argue that economic development is defined as the development of capacities that expand economic actors' capabilities. These actors may include individuals, firms, or industries, public agencies, professional associations, universities or NGOs. Rather than simple counts of jobs or rate of growth of output, economic development is concerned with the quality of any such growth. There are many ways to measure the quality of growth. A starting point is the growth in per capita personal income (and whether it is converging toward those of the wealthiest places), but if this is very unequally distributed, it will not benefit the majority of people. As such we must include the distribution of income, as reflected in the quality of employment, which is in turn manifested in the distribution of the skills of those

employed and hence the wages those skills command. But even this does not capture development fully, because development is about the overall dynamic in time of an economy in relationship to its principals, the people who work and live in an area. Hence, true development includes increasing the caliber of business practices, the distribution of and the density of social capital, and many other things that fortify the ability of the economy to keep improving itself and economic welfare over time. These are themes that we now need to explore in a bit more detail.

Our definition of development involves a two-fold difference with standard models in economics. On the one hand, we are using a definition that departs from the strict Benthamite utilitarianism of most economic thought, which is interested in simply maximizing the sum of so-called "utilities" in the form of income and consumption possibilities. Our definition includes, but goes beyond this "hard" side of the economy, explicitly incorporating a humanistic vision of the economy as a source of human fulfillment, where people create, explore possibilities earn self-respect, and create a good life for themselves through well-distributed opportunities for striving (Phelps, 2013). Once this perspective is adopted, then the mechanics of a desirable growth process itself are also different from standard models, going beyond factor augmentation to better production through innovation, the theme that has threaded throughout every part of this paper.

Thus, development can be regarded as fortifying autonomy and substantive freedom, which promotes individuals' participation in economic life (Sen 1999). Economic development occurs when individuals have the opportunity to actively engage and contribute to society and are likely to realize their potential. This promotes the advancement of the whole society. Why is this the case? Economic history has periods where incomes have advanced, and yet where there is a widespread sense of frustration in the society. The contemporary period in the West is exactly such a period. Part of today's malaise has to do with the increasingly unequal distribution of income, in which large parts of the society see stagnating material welfare in the midst of overall plenty (Katz, 1999; Piketty and Saez, 2001). But this is only part of the problem. There have been other periods, as for example at the height of American mass production in the 1950s, where incomes were advancing rapidly for much of the population, enhancing consumption

opportunities, but there was still a sense of frustration due to the deadening and hierarchical character of work for the manual workforce. In that period, there was more hope than today, in the sense that the "next generation" could be expected to be wealthier than the current one, but that did not entirely compensate for the constraining industrialized lifestyle that washed across the West, leading to the protests of the 1960s, and to sociological critiques such with titles such as "The Joyless Economy" (Scitovsky, 1976). It also, just as in the current period, left out whole groups from the material prosperity (e.g. African-Americans in the USA) and whole regions; in the midst of plenty in the 1960s, the USA announced a "war on poverty" because of this social and geographical exclusion. In other words, even though today the temptation is to think that all our problems would be resolved by a mere redistribution of income or a higher growth rate, a broader perspective on what development is suggests that we need not only a better distribution (geographical and social) of income, and more income (more growth), but also a better quality of both. Stated slightly differently, today's temptation is to think that all we need to do is restore high-enough wages and low-enough unemployment to have a good-enough economy. It is important not to miss the opportunity of the currently difficult conjuncture (of high inequality and low employment creation and stagnating median wages) to thoroughly re-think development and how to generate it.

In this sense, the expansion of capacities provides the basis for the realization of individual, firm and community potential, which, in turn, contributes to the ability of the economy to prosper, materially through innovation, and non-materially through widespread improvements in human experience, striving, creativity. Conventionally, the latter may be called "entrepreneurialism," but it means more than the frequently reductionist notion that is used today (as "starting up a firm"). As Edmund Phelps (2013: 14) has written in his book *Mass Flourishing*, development occurs not just through spectacular inventions, but when "people of ordinary ability can have innovative ideas." In 19th century America, "Even people with few and modest talents…were given the experience of using their minds: to seize an opportunity, to solve a problem, and think of a new way or a new thing" (Phelps, 2013: 15).

This notion of development does not accord easily with classical economics, but there are bridges that we can build. According to Schumpeter (1934), economic development

involves relocating capital from already established methods to new and innovative methods, which enhances productivity. For instance, not only did mass production drive the textiles industry in the industrial revolution, but it also influenced other complementary sectors and in turn diffused widely, increasing quality of life. While economic growth is measured in mainstream models by returns to increasing inputs ("factor augmentation") to an existing economic framework, in reality all sustained growth changes the dominant forms of organization, work, market coordination, skills needed, attitudes and beliefs, and the norms for how things get done. Only through this complex process of change do people work more productively, and continuously replace activities that have become simple and repetitive with higher value-added, non-routine activities (Levy, and Murnane, 2000; Aghion, 2006). Throughout all this, there is immense learning-by-doing on the part of individuals and organizations (Arrow, 1962). There is a cumulative process of technological change through incremental "tweaking" and improvement (Meisenzahl and Mokyr, 2011).

In this updated Schumpeterian view, economic development entails a fundamental ongoing ecosystemic transformation of an economy, including the industrial structure, the educational and occupational characteristics of the population, and the entire social and institutional framework. This point has been revived recently in the idea that an economy of widespread creativity and innovation requires institutions that facilitate its ongoing reorganization (Rodrik, Subramanian, and Trebbi ,2004). Institutions promote productive activities, capital accumulation, skill acquisition, invention, and technology transfer (North and Thomas, 1973). Effective institutions help individuals and businesses make creative investment decisions reducing certain forms of uncertainty through stable and predictable overall rules, but encourage risk-taking for the same reason. Thus, to further build the definition, economic development requires institutions that promote norms of openness, tolerance for risk, appreciation for diversity, and confidence in the realization of mutual gain for the public and the private sector. These do not come easily, however; they are socially constructed, painstakingly-generated capacities.

Place-based innovation capacities: a new vision of the geography of development

Broad-based investments in education and infrastructure build basic capabilities that make possible future economic growth. The public sector is the only entity with the required long-term perspective and sufficient command of resources to make the large scale investments and to coordinate economic systems. When we move from generic capacities to the specific precursors of innovation, there is also evidence of a growing role for public institutions and investments (Block and Keller, 2009; Mazzucato, 2013). This is in part because the nature of scientific research has changed, increasingly taking the form of decentralized industrial networks or "open innovation" (Lundvall and Johnson, 1994; Nelson and Winter, 1982). R&D an innovation are thus no longer confined to the laboratories of large corporations or government. Instead, R&D anand innovation are now collaborative activities, embedded in networks between both public and private institutions, large and small firms. This degree of decentralization fosters a greater dependence on government programs to coordinate the operations of these networks and limit moral hazards (Schrank and Whitford, 2009). Evidence suggests that at a time when market fundamentalism has come to guide American policy debates, the public sector has actually become more and more immersed in the economy through technology policies in particular (Block and Keller, 2009).

In more technical terms, knowledge spillovers among firms are a conduit for innovation, but such spillovers are a capacity that must be built and sustained, not an automatic dimension of economic behavior. Regional economists have long asked whether such spillovers are better encouraged by a regional economy focused on a few similar industries ("specialized") or one with many different industries ("diversified"). This is sometimes captured (in our view quite imprecisely), in the technical lingo, as the difference between "Marshallian externalities" (spillovers between firms in the same sector) and "Jacobs externalities" (spillovers between firms in seemingly unrelated sectors). But there is no convincing evidence that either specialization or diversity is key to better long-term economic performance (Kemeny and Storper, 2015). The deeper issue is how to create a local context where there is dynamic exchange of knowledge, widespread experimentation and minimal penalties for failure, and institutions that facilitate recombination into new and better products and processes. Whether highly

specialized or highly diverse the local economic base, the local context for these processes is what counts. And the question then becomes: what can policy due to strengthen these desirable aspects of local context?

This is where the policy debates engender another significant controversy. Many economists are skeptical of place-based economic development strategies (Einiö and Overman, 2012; Cheshire, Overman and Nathan, 2013). If economic development policy is place-based in the sense of redistributing resources to specific places, it might reduce the optimal level of agglomeration by dissipating activity, which results in a reduction in total productivity and output growth of the national economy. Standard urban economics defines "place-based" in a very wide way, to include such things as land use housing regulations and environmental regulations, as well as individual stimulus, or any place-based payments to people, or place-based worker training.

This framework leads the World Bank (2009), for example, to advocate a "spatially blind" (or people-based) approach rather than place-based, as the "most effective way of generating efficiency, guaranteeing equal opportunities, and improving the lives of individuals where they live and work. A key to this approach is the assumption that geographical factor mobility will lead to the best aggregate outcome *and* to income convergence across places: human mobility increases individual income and productivity, while depleting unproductive regions of their surplus populations, and hence leads to a smoother geographical distribution of wealth, also known as "general spatial equilibrium" (Glaeser, 2008). This is a powerful argument, but it is nonetheless incomplete in two ways: it over-estimates the potential for factor mobility to achieve the ends of aggregate economic growth and geographical convergence; and it under-estimates the importance and potential of widely-spread capacities for innovative, mass creative economic flourishing. It seems unlikely that substantially higher levels of migration of skilled labor, reductions in the basic agglomerative tendencies of the economy and substantially more even economic development can be achieved, simply by de-regulating housing markets (Kemeny and Storper, 2012). This is, to us, like the "tail wagging the dog" of economic development.

In this light, the skepticism expressed above about place-based approaches can be turned on its head. The major contribution of the new growth theories is to recognize that knowledge benefits from increasing returns to scale rather than the constant or decreasing

returns associated with physical commodities. Activities that create knowledge and the sharing of knowledge create increasing returns that would lead to increased national welfare. While the NEG suggests agglomeration (with its various forms of returns to scale) as key to this, it does not say that such agglomeration must take a particular national distribution, as in a highly-hierarchical national urban system (with a small number of Silicon Valley-type "supernova agglomerations" and resulting steep territorial inequalities). Indeed, the jury is out on whether the benefits of agglomeration can be achieved through a more even distribution of middle-sized agglomerations, i.e. on the exact spatial layout and distribution of agglomeration benefits (Crescenzi, Rodriguez-Pose and Storper 2007; 2012). The notion that any attempt to widely distribute innovation capacities is going somehow to kill the benefits of agglomeration is sustained neither by theory nor by any robust evidence at this point.

Indeed, we can go further in advocating for economic development policy to be both sensitive to the need for agglomeration but to occur in as many places as possible (Duranton and Puga, 2001). It has to do with the inherent uncertainty of the future of creativity, the what and where of future innovation. Economic development officials and government planners have always dreamed of being able to define long-term strategies, but they always fail at this task. It is impossible to predict the scientific discoveries, important new technologies and all the ongoing tweaks that transform our lives. Few people predicted the potential of the Internet and how it would change the way we access information and communicate. I.B.M., an industry leader, underestimated the potential of the computer industry, creating an opportunity for new firms to create personal computers. Moreover, successful entrepreneurs make their own luck, adjusting and adapting to survive. Instead of wisely considered, far-sighted solutions, entrepreneurial activity is by necessity messy, adaptive and unpredictable. The biggest problem is that it is impossible to predict which technologies are going to yield any pay-off. By the time a new industry, for example, biotech or nanotechnology, has a defined name and is on its way to becoming a household name, it is probably too late for other places to participate as major centers (Storper, 2013). The best economic development strategy is therefore to enable as many actors to productively participate in the economy to the fullest of their ability. This prioritizes improving quality of life and well-being by enhancing capabilities

and ensuring that agents have the capacities and freedom to achieve. Diversity is the most powerful tool of success in the open probability game of innovation and economic creativity (Kemeny, 2014). Economic development strategies hence need to be adaptive and they need to maximize the diversity of people, firms and places involved.

Returning to policy, regional economies are complex systems, which are notoriously difficult to model and influence. There is no reason to believe that optimizing the performance of any one component of a complex system will optimize or even necessarily improve the performance of the system overall. Current thinking is that economic development is not brought about by discrete projects or programs, but emerges from the development of interactive, dynamically-adaptive ecosystems (Hwang and Horowitt, 2012). Ecosystems have many different parts and many redundancies. They also evolve in unpredictable ways, with multiple positive unexpected outcomes. The knowledge spillovers discussed above are the key internal flows and connective tissue of economic ecosystems, while institutions are its organic structure.

The problem in most existing policies is that they use economic impact studies that do not fully capture the returns to a wide range of public economic development investments. Moreover, the amount of funding provided for economic development initiatives, while important to recipients, is miniscule in relation to the size of a regional economy. Claims that attribute positive outcomes to specific programs, investments or projects are probably more about good luck, publicity, and hype, and are rarely backed up by sound economic analysis. Moreover, external shocks to wider economic conditions (such as major technological changes and macroeconomic policies or cycles) may wipe out any hard earned local gains. In this light, policy makers cannot afford to wait for perfect predictability and a world free of error. As Kline and Moretti (2013: 34) conclude, "Second best may, in practice, be very attractive relative to the status quo." And second best may be first-best in the long-run, if it promotes the widespread capacities that are the basis for flourishing in ways that cannot be predicted in the short run.

On to the Feast

Throughout this Chapter, we have attempted to slay some sacred cows – that is, received conventional ideas about economics, growth, development, and their geography.

Economic development occupies our collective imagination, but the term is often not well defined or defined in a limited manner that does not accommodate the situation of the full range of places faced with restructuring and economic uncertainly. All too often the emphasis is on innovation as an end to itself rather than as a means to the end of widely-shared prosperity and human fulfillment. Alternatively, there are mechanical policy frameworks that focus rigidly on generating income convergence between places through geographical redistribution, and others with rigid emphases on generating more employment and output, while ignoring their highly unequal social and geographical distributions.

The starting points are different in the different parts of the world, and even between regions within nations. In the USA, for example, basic infrastructure and public goods are still lacking in many states and regions, leading to large parts of the population with limited capacities even when the culture of risk and openness is present. In the high-income areas of Western Europe, infrastructure and basic goods are well-distributed, but cultures of openness and risk-taking are not present in many regions. In the Eastern regions of the European Union, educational levels tend to be high, but basic infrastructure of connectedness is still being put into place, and old cultures of cronyism and corruption need to be dismantled. In many southern parts of the European Union, educational levels are low and demography is stagnant, and this is combined with rules that are inimical to risk-taking and open sharing of information. The needs that government must address are thus different in these areas, but in all cases, the quality of government is an over-riding concern, especially as government must evolve along with the changing regional context. Indeed, as the regional context moves forward, government is often left behind doing the same old thing. The question then becomes how to develop institutions and systems appropriate for different places and how to motivate ongoing innovation and adaptation to changing external conditions in the public sector.

Cutting across a wide variety of different contexts, a set of universally-important tasks can be identified although they must be addressed in context-specific ways. The first is entrepreneurship, a staple of discourse about economic development. But there is a difference between entrepreneurship that leads to development, through sustained build-up of innovative productive capacity in a region, and mere creation and destruction

of low-productivity or locally-serving firms. Industry-building entrepreneurship leads to the creation of a regional agglomeration, networks of producers, knowledge exchange, the growth of new types of dealmakers and intermediaries, and ongoing waves of creativity. A second element is the existence of networks, of all kinds: between producers, producers and workers, government and industry, among leaders, between leaders and community groups. These networks are what creates what Granovetter (1973) called the "strength of weak ties," reducing transaction costs and increasing confidence without creating cronyism and clubs. They are the key "untraded interdependencies" of a dynamic regional economy (Storper, 1995). And when they fail through predatory and rent seeking behavior, or failures in communication, there are negative consequences (Whitford and Schrank, 2011; Storper et al, 2015). A third, closely-related focus for policy is to help the region's actors create the informal conventions that enable coordination under uncertainty. Rules are valuable in creating broad and stable framework conditions for orderly development and they are the province of an active government. But the successful use of rules under changing circumstances takes place at the level of informal norms and conventions, yet sometimes these are the wrong ones for a dynamic process of growth (Storper and Salais, 1997). Linked to this is a fourth actionable domain of policy: beliefs and goals. Nobel Prize–winning economist Douglass North argues that "the dominant beliefs—those of political and economic entrepreneurs in a position to make policies—over time result in the accretion of an elaborate structure of institutions that determine economic and political performance" (North, 2006: 2). Beliefs and goals can only be changed through a broadly-based regional "conversation" that is inclusive and confidence-building, effectively changing perceptions of who we are and what is possible, and that we are in the process together (Lowe and Feldman 2008; Storper et al, 2015). And finally, for every newly-supplied capacity created in a regional economy, there must be demand. Steve Casper (2009) showed, for example, that Los Angeles did not historically lie behind the SF Bay Area in the production of university-based scientific outputs related to information technology, but that the market for such outputs was much greater in the Bay Area, where a community of IT commercial start-ups existed, creating effective regional demand to commercialize university-based inventions.

To summarize a wide body of theory and evidence, economic development can be enhanced via a longer term and more expansive perspective that continuously works towards measureable increases in regional capacity. The best policies to harness the natural tendency of innovative activity to cluster may be policies and investments that allow economic agents – in as many places as possible, and across as many types of people as possible -- the capacity to be creative and fully engaged in the economy and society. This expansive view of economic development necessitates important participation of the public sector as the agent of collective investment in capacity and suggests that businesses that benefit from knowledge spillovers and local capacity are key partners in building such public institutions. The geography of this perspective is also more inclusive than a winner-take-all agglomeration geography, though it builds on the essential micro-economics of geographical concentration as a fundamental source of innovation and development. Thus our emphasis on creating the capacities for humanly-fulfilling and widely-distributed innovation is motivated by both humanism and good economics.

At regional, national, and world scales, this way of thinking offers a different program for economic development policy, and a different set of aspirations, from the conventional ones. To implement such policies, however, much hard work lies ahead. We will have to abandon the existing sacred cows, in the forms of the standard metrics of growth, innovation, convergence, and well-being. We will have to operationalize new metrics for development as the broad process defined here (Bartik, 2012). And we will have to abandon and redefine many of the politically-expedient practices that shape the field of economic development policy and the local politics of development. The hopeful news is that the economics and geography of development now provide ingredients to harvest in order to better understand these process and hence create this new feast.

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