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Preface

With this book, I would like to introduce the reader to local development economics and policy, with a special focus on the place-based paradigm. We examine why it is justified, what difficulties it creates, and what kind of public interventions it suggests.

Chapter 1 starts by stressing that the Washington Consensus doctrine has failed to provide a general recipe for economic development, as the World Bank itself admitted in 2005. Economic improvements took place, most often, where the requirements for fiscal austerity, privatization, and market liberalization were not met. Wherever this recipe was applied, economic development did not take off, or very little progress was recorded, while serious imbalances occurred in their place. The current view that a more "humble" search for paths to development is needed has replaced the claim that a general recipe or the best practices can be applied anywhere. The failure of the Washington Consensus gave a notable boost to a spatial perspective. If there are no general recipes, then opportunities and constraints must be considered on a case-by-case basis. Dealing with development policies, therefore, involves dealing with regional policies, where the debate is unresolved. Is it better to invest in people regardless of where they live, or should we support the development of places to help people more effectively? Should all regions grow simultaneously or could just a few drag the others? Is the goal of developing backward regions unnecessary or unattainable? A debate is emerging between people-based (spatially blind) policies and place-based policies. The World Bank supports spatially-blind policies, while European Cohesion Programs are conceived as place-based interventions. In the last part of Chap. 1, we review the 2014 European Cohesion Policy reform and outline its merits and weaknesses.

In Chap. 2, we present the rationale behind the place-based approach. Development processes are spatially uneven. In advanced regions, congestion costs reduce returns. However, there are also factors that lead to increasing returns: economies of specialization, economies of scale, and external economies. Opening markets might thus bring about regional divergence as a result of a cumulative inflow of mobile resources to the more advanced regions. In lagging regions, however, there may be untapped immobile resources, and their valorization justifies

place-based policies. Current profitability may be in favor of a certain spatial distribution of activities, but potential profitability may be in favor of a different distribution. The possible movements that may arise will depend on the formation of ex ante expectations. It is therefore reasonable to think that intentional actions such as place-based policies—supporting the best exploitation of untapped, immobile resources where they exist—are justified and may produce significant results. It is thus necessary to examine whether and how realistic it is to assume that these resources are untapped, taking into account a strong objection: if resources are available, they will be spontaneously exploited in a market capitalism system.

Chapter 3 discusses this subject. Taking cues from the most recent debate in the field of economic geography, we will see that local resources can remain untapped because of the consolidation of routines and narratives that are against change even when it improves everyone's situation. We will also see that changing narratives and changing private actors' routines in order to use local untapped resources is possible if identified obstacles—mainly the lack of mutual experience between actors of innovation—are overcome. The experience of change, which would support both a change of routines and a change of narratives, is apparently possible only as a result of previous experience. This is a trap.

In Chap. 4, a trap model is presented and two apparently possible ways out are illustrated: a "big push" and a wage drop. In the big push hypothesis, the State was required to intervene for as long as necessary (and nobody knew for how long). The wage flexibility hypothesis called for a drop in wages to the level required in order to get out of the trap, no matter how low. We will see that both these solutions have severe limits.

Considering the nature of the problem at stake, we could propose a third remedy offered by the financial system. In a trap situation, after all, there are always expected future gains, even though firms have no idea how many of them are required to take action. It would be natural to think that these firms could pay a bank to anticipate future revenues, thus sharing the risk among all the firms that are individually unable to deal with it. The solution would be as simple as buying the information needed.

Chapter 5 examines this solution. We will see that, when uncertainty arises from lack of information about both the state of the world and the agents' behavior, a remedy to a lack of information cannot be bought. We will introduce, then, a more complex trap model assuming that innovation (a way out of the trap) can occur through a process that is unsure and made up of small steps, by way of experiment.

Some general indications emerge regarding the policy design required to get out of the trap of under-valorized local resources. Intervention should not entail direct public involvement in starting and managing productive activities, nor should it entail providing boundless grants and incentives to private agents. Wage reduction is not a good approach neither. If forced, it may bring about negative consequences on productivity and on the overexploitation of renewable resources. Intervention should be designed with the goal of increasing the difference between the net return of new risky activities and the safe return of traditional ones. This requires new activities to be selected carefully. The ability to choose the most

promising project, however, is not very realistic. The outcome of any new project is uncertain. If this were not the case, there would be no traps to deal with.

This leads to the use of cost as a lever rather than a selection. Public policies should aim primarily to reduce the value and uncertainty of the cost of new activities in order to support the difference between their expected uncertain revenues and their expected costs. Policy makers should provide public goods and services selected from those best able with certainty to reduce costs to those actors who are engaging in new activities. A strong indication emerges in favor of local public goods and services of general utility: health, security, justice, housing, school, transport, and communication. There are two reasons why these services, if they are efficient and of good quality, serve the purpose of supporting new activities that use local resources better. The first is that agents of innovation are particularly exposed to the risk of losses, since their activities may or may not go well. Thus, public welfare services that effectively guarantee against general risks have a higher value for these agents than it does for agents that engage in risk free activities. The second reason is that these agents often come from other places and do not have the same network of social relations as the locals do.

The public utility services recommended in the spatially-blind perspective are the basic ones needed to contain the mobility costs of people without a job, or with a poorly-paid job, who move in order to seek a job or a better-paid job. The implicit idea is that once these general basic services have been provided, government intervention has fulfilled its task. By contrast, in the place-based perspective—here intended as measures to increase the net return of innovative activities by lowering the cost of living for innovators—the condition is necessarily dynamic. Required public services will grow in quantity and quality as they are used to support a growing volume and an increasing value of innovative activities. The place-based perspective also accentuates specificities in public service provision. In this paradigm they should be tailored to the peculiar conditions and needs of a specific place, whereas spatially-blind services, by contrast, are generalized and the same whatever the place.

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Contents

Chapter 1
Spatially-Blind Versus Place-Based Policies

Abstract In this chapter we start observing that the Washington Consensus doctrine has failed to provide a general recipe for economic development. Major economic improvements took place where the requirements for fiscal austerity, privatization, and market liberalization were not met. Where this recipe was applied, very little progress was recorded, while serious imbalances occurred. The current view that a more "humble" search for paths to development is needed has replaced the claim that best practices can be applied anywhere. The failure of the Washington Consensus gave a notable boost to a spatial perspective. If there are no general recipes, then opportunities and constraints must be considered on a case by case basis. Dealing with development policies, therefore, involves dealing with regional policies. In the central part of this chapter we review an unresolved debate in this field. Is it better to invest in people regardless of where they live, or should we support the development of places to help people more effectively? Should all regions grow simultaneously or could just a few drag the others? Is the goal of developing backward regions unnecessary or unattainable? A debate is emerging between people-based (spatially blind) policies and place-based policies. The World Bank supports spatially-blind policies, while European Cohesion Programs are conceived as place-based interventions. In the last part of this chapter, we review the 2014 European Cohesion Policy reform and outline its merits and weaknesses.

1.1 Goodbye Washington Consensus

Development policies are at the heart of a vast international debate. Enormous emerging countries are committed to supporting impetuous development processes that are beginning to meet with friction and resistance, while several other countries show no signs of economic and human development. The main concern in the developed world is to survive the biggest economic and political crisis since the 1930s and to stimulate growth. Managing a new, closely inter-connected economic

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and political world that is threatened by depleted natural resources is a problem worldwide. For these reasons there renewed importance has been attributed to places. In short, the debate revolves around a division between people-based and space-based policies. While the origin of this contrast lies in past history, a single recent event became a symbolic turning point. This was the 2005 sanctioning of the end of the Washington Consensus or, at least, the fact that the World Bank—a pivotal actor of the consensus—called it into question.

The term Washington Consensus outlines the economic policy rules dictated twenty-five years ago by three Washington-based institutions: the World Bank, the International Monetary Fund, and the U.S. Treasury. These institutions focused on macroeconomic stabilization, trade liberalization, and privatization. Overall, their imperative was to *get the prices right*, i.e. eliminate interferences in market operations so that the prices of goods, labor, and capital were "right". The ruling economic theory at the time guaranteed that, once these requirements were fulfilled, development would follow everywhere (though at different times), since mobile production factors would move in the right direction (in favor of less rich people and less developed countries and regions), bringing about full employment of local resources, among other advantages. It would put paid to the frustrations of the 1980s caused by another orthodox doctrine of the time. This doctrine called for inflation tolerance, import substitution industrial policy, a leading role of the state through price control, foreign exchange rationing, regulated trade regimes, repressed financial markets, and state ownership of commercial enterprises. This is the traditional meaning of the Washington Consensus, popularized by influential critics, such as Joseph Stiglitz. Nobel Prize in 2001, vice president and chief economist of the World Bank from 1997 to 1999, he was forced to leave his post for having publicly expressed his dissent. «Whatever its original content and intent, the term Washington Consensus […] has come to refer to development strategies that focus on privatization, liberalization, and macro stability (meaning, mostly, price stability). The policies are often referred to as neoliberal policies, because of the emphasis on liberalization, and because, like nineteenth century liberalism, they emphasized the importance of a minimal role of the state» (Stiglitz 2008, 41).

In fact, the original content was more complex when, in 1990, John Williamson published his essay summarizing the doctrine (on which various US government and academic environments in the late 1980s expressed their consensus) in ten actions that were «desirable in just about all the Latin American countries»: (1) Budget deficits should be small enough to be sustained without inflation. (2) Public expenditure should be redirect toward fields with high economic returns and to improve income distribution (primary education and health, infrastructure). (3) Tax reform to broaden the tax base and cut marginal tax rates. (4) Financial liberalization to market-determined interest rates. (5) Exchange rate at a level sufficiently competitive to support nontraditional exports. (6) Quantitative trade restrictions should be replaced by tariffs, progressively reduced to a rate in the range of 10–20 %. (7) Abolition of barriers impeding FDI (foreign direct investment). (8) Privatization of state enterprises. (9) Abolition of regulations that prevent new firms birth and free competition. (10) Secure property rights (Williamson 2005, 196).

This list, inspired by a moderate neoliberalism, included some proposals that could well have been drawn from a social-democratic program: to reduce inequalities in income distribution, make effective use of public spending, maintain some control over foreign capital (liberalizing only direct investments), and maintain an intermediate regime in the exchange rate—neither fixed nor floating. The three Washington institutions later went even further. All concerns with distribution inequality disappeared, and indiscriminate and severe spending cuts on public finance were prescribed. As for the exchange rate, «the Bretton Woods Institutions increasingly came to espouse the so-called bipolar doctrine […] according to which countries should either float their exchange rate "cleanly" or else fix it firmly» (Williamson 2008, 21). Finally, Williamson's formulation demanded the free entry of foreign direct investment only, although not for all foreign capitals, while the International Monetary Fund, the U.S. Treasury, and the World Bank urged several countries in the developing world to embrace full liberalization in the movement of capital, with negative effects on the stability of their economies.

Williamson distanced himself from this version of the rules: «Those deviations from the original version were in my opinion terrible, with the [latter] one bearing the major responsibility for causing the Asian crisis of 1997» (Ibidem). The affirmation of these drastic rules that scarred a full decade, «associated with market fundamentalism» (Serra and Stiglitz 2008, 3), and referred to as the *Washington Consensus 2*, was determined by ideological and bureaucratic[1] reasons, but especially by a wide range of forces interested more in liberalization and globalization than in equitable growth and sustainable development (Serra and Stiglitz 2008, 6). As a matter of fact, while the years of the Washington Consensus were not a season of growth in the fortunes of the poor and the middle classes, the richest part of the population achieved far better results, both in developed and in developing countries (Krugman 2008).

When the outcomes came to be assessed, the Washington institutions were forced to conclude that a vast majority of people had not benefitted from the promised development results after more than a decade that the recipe had been applied. Where the rules were precisely followed, especially in Latin America and in the former Soviet area countries, development took very few steps forward, while where the recipes were blandly or not applied at all development was substantial. In Latin America, several years of recession followed some years of growth, so that growth under the Washington Consensus was far less marked than in the period between the 1950s and 1970s when countries followed import substitution strategies (Krugman 2008, 4). Berr and Comarnous (2007) calculated an indicator of compliance with the Washington Consensus's rules for 23 countries

[1] «The fact that countries that followed the Washington Consensus policies grew more slowly than those that did not should, by itself, have been enough to lead countries to abandon these strategies. But the International Monetary Fund (IMF) urged patience developing countries were told that growth was just around the corner» (Stiglitz 2008, 44).

in Latin America and the Caribbean and distinguished 12 countries with high and 11 with low indices. The 12 countries that diligently applied the prescriptions, (in the 1990–2003 period) recorded lower income growth, a significant increase in the debt service ratio to GDP and a marked increase in income distribution inequality. The results would be even more blatant, if we considered China and India where the Washington Consensus was not observed and development was outstanding, and if we included the former socialist countries where, by contrast, the doctrine was widely applied, with very poor results.

The World Bank itself recognized its failure. In March 2005, Gobind Nankani, World Bank's Vice President for Africa, wrote a sensational page in the presentation of the Report of the same World Bank: *Learning from a Decade of Reform.*

> "Washington Consensus" […] guided much of the advice by the World Bank and was reflected in the conditionality associated with adjustment loans. […]. The results of these reforms were unexpected. […]. Some countries managed to sustain rapid growth with just modest reforms, and others could not grow even after implementing a wide range of reforms. […]. We need to get away from formulae and the search for elusive "best practices" and rely on deeper economic analysis. […]. The new perspectives also have implications for behavior - in particular the need for more humility. (Nankani 2005, XI, XII, XIII).

The economic crisis in Western countries contributed to condemning the Washington Consensus, boosted by both financial de-regulation and the inequality of income distribution fostered by policies stemming from the same ideology that supported the Washington Consensus 2 (Pressacco and Seravalli 2009; Stiglitz 2010).

Reaching a consensus on development policies is impossible: «If there is a consensus today about what strategies are most likely to promote the development […] it is this: there is no consensus except that the Washington Consensus did not provide the answer» (Stiglitz 2008, 41). «The debate now is not over whether the Washington Consensus is dead or alive, but over what will replace it» (Rodrik 2006, 972). One line of thinking emphasizes humility, policy diversity, selective modest reforms, and experimentation.[2]

If we accept this line of thinking and adopt a case-by-case approach, the *territorial dimension* assumes new importance. A general prescription justified inattention to the territorial specificities within economic systems in order to achieve full employment of resources. Once the full utilization of all resources was secured, it was thought, it did not matter what they were and where they were located. However, what if full employment is no longer guaranteed? Is it not important to know what and where the disposable resources are? Don't different places within national systems require and deserve a specific development strategy?

It is undeniable that regional imbalances are more severe than country imbalances, and they are no longer accepted as inevitable now that a general recipe is no longer prescribed. In Europe, for example, the differences between

[2] «But there are other competing perspectives as well. One (trumpeted elsewhere in Washington) puts faith on extensive institutional reform, and another (exemplified by the U.N. Millennium Report) puts faith on foreign aid» (Rodrik 2006, 973).

regions in terms of gross domestic product per capita increased significantly from 1995 to 2009, while the differences between countries decreased. The Theil index calculated at EU-27 NUTS2 regions level remained almost constant until 2000 and then decreased significantly. Its decomposition to capture the trend of inequality between countries and within countries, however, shows that this reduction is due to a reduction in country difference, while differences between regions increased (Barca 2009, 83).[3]

1.2 Regional Development Strategies

Dealing with development policies, therefore, involves dealing with regional policies, where the debate is similarly unresolved.[4] Is it better to invest in people regardless of where they live, or should we support the development of places to help people more effectively? Should all regions grow simultaneously or could just a few drag the others? Is the goal of developing backward regions unnecessary or unattainable? In just two years, 2009 and 2010, five major reports were published on this and related issues. «Two quite different schools of thought […] have emerged, namely, the space-neutral [*spatially-blind* policies] and the *place-based* approaches» (Barca et al. 2012, 135). The influential World Bank (2009) report supports and adopts spatially blind policies, while place based approached are endorsed by the other documents: the Barca (2009) independent report prepared on behalf of the European Commission, the OECD (2009a, b) reports, the CAF (2010), a report by a Latin American Development Bank.

1.2.1 Spatially Blind Policies

The World Bank supports spatially-blind policies. «In countries where labor and capital are mobile, economic distance between lagging and leading areas should be addressed mainly with spatially blind or universal policies» (World Bank 2009, 230).

According to the authors of the Report, the only case in which spatially targeted place-based policies are justified is when there are linguistic,

[3] The Theil index is $T = \frac{1}{n}\sum_{i=1}^{n} \frac{y_i}{\bar{y}} \lg \frac{y_i}{\bar{y}}$, n = number of regions; y_i = income per capita in each i region; $\bar{y}$ = arithmetic average of per capita all regions' income. The Theil index is zero for a 50:50 distribution (the first half of regions has the 50 % of the total GDP, and the second the 50 %), is 1 for a 82:18 distribution, is 4 for a 98:2 distribution. The Theil index is decomposable (while the Gini index is not) allowing to calculate how much of the index is determined by the inequality of distribution between groups of regions (countries) and within groups.

[4] «[…] the debate [regarding regional policies] is far from being settled and requires consideration of a range of fundamental and interrelated issues» (Barca et al. 2012, 135).

political, religious, or ethnic particularities. In all other areas (regions as well as cities), the main way to reduce the gap between major and minor prosperity conditions is for people to move from one place to another. «People seek opportunities» (World Bank 2009, 231). A proper development policy, they claim, should support the generation of these «opportunities» where the process of growth is already strong; facilitate people's influx to these areas so that they can earn better wages and national rates of growth can increase; redistribute the income thus produced in favor of less fortunate people unable to find well-paid work. «Should countries invest in people or in places? The answer is to invest in activities that produce the highest economic and social returns nationally. In leading areas, emphasize investment in places—durable investments that increase national economic growth. In lagging areas, emphasize investment in people—portable investments that stimulate mobility and accelerate poverty reduction» (World Bank 2009, 231).

It is worth noting that the expression *accelerated* poverty reduction and the Report's repeated recommendation in favor of redistributive people-based policies, clearly indicate that its philosophy is not really neo-liberal.

The polices in support of mobility consist in improved infrastructures linking different areas of the country, diffusion of the same *basic* public services and utilities[5] everywhere, and where possible a progressive tax system.[6] This strategy is conceived with the goal of reducing people's mobility costs. Communication and transport infrastructures make exploring and exploiting opportunities easier, no matter where people are. Basic public services and progressive taxation provide support for people living in lagging regions, by allowing them to deal with the cost of relocating to regions that are growing. You can also say that these policies are aimed at increasing *access* to *motility*, using the concepts of motility[7] and access to it[8] proposed by Kaufmann et al. (2004). The result would be fewer people unemployed or employed at low productivity rates in backward areas, and

[5] «Regardless of where people live, they should have affordable access to basic services such as primary health care, education, sanitation and security» (World Bank 2009, 231).

[6] «A progressive federal income tax in the United States has reduced income inequalities among people. An unintended effect has been to reduce income inequalities across states, showing that a spatially blind policy can be a sharp instrument for reducing spatial inequalities» (World Bank 2009, 239). In developing countries and regions, however, it is generally difficult to have an effective progressive taxation, because of the strong opposition it encounters as well as the remarkable capacity of the public administration required, that in general does not really exist.

[7] «Motility as the link between spatial and social mobility […] can be defined as the capacity of […] persons to be mobile in social and geographic space» (Kaufmann et al. 2004, 750).

[8] «Access refers to […] mobilities […] constrained by options and conditions. The options refer to the entire range of means of transportation and communication available, and the entire range of services and equipment accessible at a given time. The conditions refer to the accessibility of the options in terms of location-specific cost, logistics and other constraints» (Kaufmann et al. 2004, 750).

employment growth with higher productivity in advanced areas. Inequalities in people's income would thus be reduced, while inequality between regions would increase.

A way of thinking inspired by NEG (New Economic Geography) models was behind the spatially-blind strategy. NEG considers territorially unevenness, agglomeration of economic activities, and benefits from cumulative process in the densest and richest regions, essential features of economic development. It follows, in this mindset, that if you want to avoid these imbalances, there are only two possible scenarios: either these attempts will be ineffective, or—if they are effective—general development would slow down.[9]

This raises three issues. The first concerns the diagnosis that economic development is a territorially uneven process. The second is whether policies aimed at developing specific areas are as useless or even harmful as they claim. The third regards the assertion that a spatially-blind policy is the only possible strategy.

Andrés Rodriguez-Pose, addressing the first issue, recognizes that the World Bank (2009) report presents an accurate diagnosis of development patterns, with economic activities agglomerated in some regions and urban areas, which have better economic results compared to sparsely populated ones. «Of 42 countries […] only Brazil represents a genuine case of reduction of territorial disparities. In all other cases, the tendency is either toward stability or increasing divergence, with emerging countries in Central and Eastern Europe, Latin America, and parts of Asia—led by China and India—witnessing the steepest rises in territorial polarization» (Rodríguez-Pose 2010, 365). For this reason, the merit of the 2009 Report, also recognized by "proper" otherwise very critical geographers,[10] is to have forcibly placed space at the core of their reflection on development for the first time in fifty years at least (Peck and Sheppard 2010).

The second issue concerns the almost total lack of confidence in measures intended to bring development initiatives to disadvantaged places. Reported examples of failure and waste of resources, both in developing and in developed

[9] «Many countries have offered incentives to create economic mass in lagging areas. […]. Most European countries now focus more on "soft" interventions, such as investing in innovation and supporting research institutes, science and technology parks. […]. The US federal government is also involved in smaller "economic development" programs. […]. No independent evaluation of these programs is available. Area incentives, popular in developing countries, have produced mixed results at best. […]. The evidence […] shows that many such policies have led to waste» (World Bank 2009, 255–257). «The WDR (World Development Report 2009) […] urges policymakers to recognize that economic growth will be spatially unbalanced, and to try to spread out economic activity—too much, too far, or too soon—is to discourage it» (Gill 2011, 29).

[10] Criticisms were especially: «the WDR 2009 ignores the work of economic geographers, […] [it suffers from] simplicity [that] reflects economists' fondness of parsimony, […] [it maintains] a blatant ignorance of the political, social, and environmental dimensions of development, […] it would have been more inclusive (of neglected issues including financial ones)» (Rodriguez-Pose 2010, 364).

countries, while adopting these policies abound. In particular, the World Bank Report highlights two European examples: German reunification, and the Italian Mezzogiorno.

> Despite a vast flow of funds to Eastern Germany - estimated at more than € 1.3 trillion - privately produced GDP per capita is still only 65 percent of Western Germany's. And a lot of this catch-up is not because eastern GDP went up but because more than 1.7 million East Germans left for a better life in the west. […]. Italy's experience in trying to develop the Mezzogiorno - the lagging regions in the south - shows the futility of relying on targeted incentives to integrate lagging regions into the national economy. […]. Indeed, the fall in unemployment between 1950 and 1970 was achieved mainly due to emigration from the South to northern Italy. (Gill 2011, 27 and 29).

These two examples, however, deserve broader analysis. As you can see in the next chapter, Gill's claim does not seem fully justified in the German case. In the case of the Italian Mezzogiorno, the diagnosis should be more cautious, as the Appendix of this chapter shows. In general, it is worth noting that the Report is right to point out that the effects of place-based policies are insufficiently evaluated. However, this cannot be seen as evidence of their general lack of effectiveness. Since until recently impact evaluation of these policies has been lacking there is also no firm evidence to the contrary. For example, available research does not authorize European regional policy to be considered ineffective (Checherita et al. 2009). Conversely, there is some research that shows that this policy may have significantly contributed to economic growth of lagging regions when they are linked to local openness, institutional quality, and good governance (Ederveen et al. 2006). If European Funds had been distributed according to actual need and ability to use them effectively these results would have been even better (Becker et al. 2012). Other research has found the results of cohesion policy more effective in the medium and long term than in the short term. «The analysis has shown there are […] benefits from EU Cohesion Policy spending in the less developed regions of the EU. […]. In the medium term the productivity enhancing effects of infrastructure investment, R&D promoting policies, and human capital investments become gradually stronger and even when the programme is terminated and spending discontinued there are permanent positive output gains» (Varga and in't Veld 2011, 658).

The third issue concerns the World Bank's advice, according to which local targeted policies need to be replaced[11] by national spatially blind people-based policies, aimed at facilitating connection and mobility between backward and

[11] «Prosperity does not come to every place at once, and to some places it does not come at all. This is difficult for caring people to accept, because it is more natural to think that if a place is not prospering, the policy remedies must be incorrect or inadequate» (Gill 2011, 27). «Many countries have offered incentives to create economic mass in lagging areas. The idea is that to attract firms, lagging areas need to offset higher transport and logistics costs, weaker infrastructure, higher factor prices, and lower levels of public services» (World Bank 2009, 255).

advanced regions. This is the most criticized aspect of the Report.[12] One criticism is that the human and social costs of mobility are underestimated. «There are echoes here of former UK Conservative minister, Norman Tebbit, who, during the 1980s recession, famously told unemployed people in the lagging regions of the UK to "get on yer bike" and head off to regions with greater economic activity. Tebbit's speech was infamous because it reflected a complete erasure of histories and injustices, a deprecation of regional cultures and a call for markets to resolve problems of regional politics» (Rigg et al. 2009, 130). It should be noted, however, that the force of this objection depends very much on context. People's willingness and capacity for mobility, and the human and social costs related to the possible need to go elsewhere to find better life conditions depend on several factors (Clark and Withers 2007, 614). Some of them are related to access: infrastructure, public services, private pecuniary costs in relation to income. Others are personal (age, gender, education level). Still others are the result of historical conditions that influence ways of thinking and institutions, while yet others depend on the type of family and social relations, which, in their turn, partially depend on history, culture, and institutions (Lück and Schneider 2010). Although rigorous comparisons are difficult to make, it is widely recognized that spatial mobility is greater in the US than in Europe,[13] and this can be attributed to deep-seated historical reasons (Gill and Raiser 2012, 97). It should be stressed, however, that over the last twenty years spatial mobility has been increasing in Europe.[14] We could thus claim that the spatial mobility lever to reduce income distribution imbalances (as the World Bank Report recommends) is widely considered less forceful and unfair in the U.S., than in today's Europe (though this is destined to change in the future).

A further criticism concerns the fact that spatially-blind policies often turn into non-blind ones, especially benefitting core regions. «Spatially blind policies are rarely spatially neutral, because they typically end up as capital-city promotion policies. Ostensibly, this reflects the economics of agglomeration, but to a great extent it is a product of the national rent-capturing influence of capital-city elites in all areas of public life» (McCann, Rodríguez-Pose 2011, 203). In fact, according to the World Bank Report, concentration of development processes is unavoidable and appropriate. In this logic, it is not so bad if blind policies actually exacerbate this concentration.

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[12] «My main concern with the WDR 2009 lies […] not in its assumptions or in its treatment of agglomeration and distance but in its handling of institutions. This, in turn, leads to what, in my view, is its greatest weakness: the recommendation of spatially blind policies» (Rodriguez-Pose 2010, 367).

[13] «Between 2000 and 2005, about 1 % of the working age population had changed residence each year from one region to another within the EU15 countries, compared to an overall interstate mobility rate of 2.8–3.4 % in the US during the same period of time» (Ester and Krieger 2008, 95). See also Gáková and Dijkstra (2010).

[14] «After decades of being interpreted as the core driving force in transformation processes by sociological theories, mobility recently has become a popular object for empirical research […]. Results confirm at least one assumption of the theories of late modernity: People in Europe have become more mobile over the course of the last two decades» (Lück and Schneider 2010, 135).

Finally, the strongest objection to the spatially-blind strategy concerns the *waste of opportunities*. Specific locations may have untapped resources, which can be discovered and exploited only through an intentional place-based action of internal-external agents. These not yet exploited resources exist because the market and the local elites are unable to overcome discontinuities and thresholds of development processes (traps). «[…] traps that limit and inhibit the growth potential of regions or perpetuate social exclusion […] can only be tackled by new knowledge and ideas: the purpose of development policy is to promote them through the interaction of […] local groups and the external elites involved in the policy» (Barca et al. 2012, 139).

1.2.2 Place-Based Interventions

«Addressing these questions[15] requires a full research programme» (Garcilazo and Oliveira Martins 2013, 3). A good starting point is offered by Paul Krugman author of the NEG founding "Geography and Trade".

> Rereading *Geography and Trade*, I realize that it has something of retro – one might almost say steampunk – feel. […]. Regional specialization peaked sometime around the Wilson administration [1913-1921], and […] it has been downhill since the end of World War II. […]. The word I guess I'd use for regional specialization in the contemporary United States (and, to a somewhat lesser extent, in Europe) is "subtle". There is still extensive specialization […]. But the specialization seems to involve relatively fine distinctions. (Krugman 2010, 11–13).

These «subtler» forms of agglomeration economies spread out growth chances so that they are no longer concentrated in a few areas. Between 1995 and 2005, for example, in the economic growth of 22 large OECD countries, the contribution of TL2 regions with a 1995 GDP per capita below the national average was significant in half of cases. It is true that in Japan, Germany, Italy, Canada, and Finland, the contribution of these regions was lower than that of the rich regions. However, in several other cases, it was higher or similar, as in Australia, the United States, France, Netherlands, Sweden, and Norway. By increasing the level of disaggregation with TL3 regions data, and considering a slightly longer time span (1995–2007), Garcilazo and Oliveira Martins (2013) conclude that: «[…] the possibilities for growth seem to exist in many different types of regions».

Place-based interventions are, therefore, proposed specifically for places, and designed for specific local opportunities. Their purposes do not necessarily include economic convergence, but untapped resources—when they are available—can

[15] «Should economic development policies be space-blind and let market forces alone determine the location of economic activities, or should policies contain 'place-based' elements because regional growth factors can only be fully mobilized in this way?» (Garcilazo and Oliveira Martins 2013, 3).

be discovered and exploited locally. Without place-based interventions those potentialities are wasted.

The debate on the merits of these two paradigms has stated clearly that, if there were no issue of wasted potential, the redistributive people-based policy would be preferable. In 1966, Louis Winnick introduced the term "place-based" for the first time, thus highlighting the dichotomy between policies for places and policies aimed at helping individuals. As Edward Glaeser (2005, 2007) later popularized, place-based policies are flawed where targeting[16] and coverage[17] are concerned. A trade-off appears between static and dynamic efficiency. Adopting a redistribution policy in favor of people makes it possible to help many (coverage) who really need it (targeting). However, it does not usually make them self-reliant. A place-based policy runs the risk, in the short term, of favoring those who do not strictly need it, but, over time, it can allow the whole area—as well as of all its inhabitants—to improve their lot. In essence, place-based policies should be implemented in such a way that really teaches people to fish rather than give them a fish. Of course there must be fish in the river.

Without special care (in ensuring that there are fish in the river), such policies may have perverse effects. There are certain conditions that lead exactly in this direction, such as "pork-barrel politics".[18] Actively involved local authorities are tempted by a direct exchange between votes and favors. Others seek consensus by providing so-called development policies in order to keep up with the neighbors. As a result of these behaviors, there has even been a certain amount of perplexity concerning institutional decentralization. Azfar et al. (1999) and Jütting et al. (2004) argue that empirical research reveals at best highly-variegated outcomes of decentralizing reforms implemented in different countries in terms of efficiency and development. These authors underline that decentralization increases efficiency in allocating resources, as well as the responsibility of institutions

[16] «Targeting refers to the success (or failure) of identifying and truly helping intended beneficiaries. While place-oriented strategies invest resources into distressed places, there is no guarantee that the resources actually reach distressed people. […]. When tax dollars from wealthy areas flow to poorer areas, invariably some poorer people in richer areas pay to help some richer people in poorer areas» (Crane and Manville 2008, 4).

[17] «Coverage is […] referring to the share of the intended beneficiary base reached. […]. A place-based policy that dedicates housing assistance to one poor neighborhood may ignore many individuals in other neighborhoods […] who also cannot afford housing» (Crane and Manville 2008, 4).

[18] «On the southern plantations in slavery days, there was a custom of periodically distributing rations of salt pork among the slaves. As the pork was usually packed in large barrels, the method of distribution was to knock the head out of the barrel and require each slave to come to the barrel and receive his portion. Oftentimes the eagerness of the slaves would result in a rush upon the pork barrel in which each would strive to grab as much as possible for himself. Members of congress in the stampede to get their local appropriation items into the omnibus river and harbor bills behaved so much like negro slaves rushing the pork barrel, that these bills were facetiously styled "pork-barrel" bills, and the system which originated with them has thus become known as the pork-barrel system» (Chester Collins 1919, 693).

(reducing corruption), and the capacity for initiative, but only if rather demanding conditions are satisfied. Looking at these conditions, you might get the feeling that decentralization is a good idea in rich and advanced areas, but not in lagging ones. This objection, however, can be attenuated. Shah (1998), for example, complains that the debate has been too schematic; while Seddon (1999) points out that the requisite conditions have different impacts, and that what counts is the overall design of decentralization. However, the literature on the subject does not allay concerns.

It would appear that the crucial problem to be solved for place-based policies to be effective concerns its *complex design.* It must be able to achieve *integration* between internal and external forces. In fact, the serious limits of the two opposite approaches, top-down or bottom-up—both of which have given poor results—are underlined. Interventions dropped from above have failed to grasp the *real potential* of places and to raise the necessary mobilization of local forces (Barca 2011, 218). However, bottom-up initiatives entirely implemented on the basis of local knowledge and preferences, have also proved ineffective: «local elites being incapable (capacity being path-dependent), unwilling (their aim being to maximize their own share of a given output) or insufficient (centripetal flows of capital and labor occurring due to agglomeration effects) to deliver the appropriate institutions and investments» (Ibidem).

The most successful interventions (Juarez & Associates and Harder+Company 2011), were those that managed to integrate resources and knowledge from above and below. Ultimately, discovery and exploitation of existing distinctive, as-yet untapped resources requires two conditions. First, external assets and capabilities should overcome the backward equilibria of local forces dominated by those who cannot or do not want to change. Second, local forces should be capable and willing to mobilize and accept external challenges. These two conditions are difficult to fulfill. «Implementation of cross-sector, multi-partner place-based initiatives is extraordinarily difficult. The range of issues, actors, relationships, and processes involved are many and complex. They are embedded in historical relations, contexts of inequality and shifting circumstance, and structural constraints that defy pre-planned linear progress and require a combination of strategic opportunism, alliance building, negotiation, flexibility, and significant resources (including money, time, knowledge, leadership, organizational capacity, and political leverage)» (Chaskin 2000). «It is not surprising, then, that weak implementation capacity and ineffective management have been found to undermine many otherwise promising initiatives whose community-level activities may have been well-theorized, well-designed, and well-planned» (Auspos et al. 2009). The position of the World Bank may seem reasonable in this context. If political and administrative capacities are both lacking, they claim, it is better to avoid complicated place-based policies.

However, debate and experience has taught us that, though arduous, the challenge may be successful, provided that the difficulties and the need to learn are fully recognized. To prepare the prerequisites for «*internal and external*

alignment», an indispensable tool for the implementation of effective place-based development policies that are especially demanding, its agents must first understand the nature of the problems they are dealing with.

Before beginning this analysis, however, some comments on European cohesion policy, which has been given a new framework of rules since the end of 2013, are necessary. It is worth examining the nature of the reforms implemented and the reasons for a not entirely satisfactory setup.

1.3 European Cohesion Policy

The rationale (and the history) of European cohesion policy are so complicated that many interpretations have been offered, all stressing several features, including substantial differences between what has been said and what has remained unsaid. For example, some interpretations stated that while this policy's formal mission is to reduce regional disparities, its origins were driven by "pork-barrel" politics. In this vein, subsequent reforms appeared as "side-payments" to lubricate EU integration, with the main goal of building direct relationships between European and local institutions to reduce the weight of national governments (Hooghe 1996).

1.3.1 Two Opposite Visions

What is certain is that the cohesion policy budget more than doubled at the end of the 1980s, due to Jacques Delors's reform (Table 1.1).

After this turning point, when the policy occupied one third of the entire budget, the origin of its funding became crucial. In fact, the logic of cohesion policy entails a transfer of resources from some countries to others. The "voice" of those who pay more than they receive has some impact on the functioning of the policy, depending on how individual countries are to negotiate the terms of their contributions. In the EU, the financing frame of the budget gives countries a strong voice.

Table 1.1 EU budget and cohesion policy appropriations

	1975	1980	1985	1988	1993	2000	2007	2014	2014–2020
Cohesion policy % of budget	6.2	11	12.8	17.2	32.3	34.8	36.7	33.2	33.9
UE budget % of GNI	0.53	0.8	0.92	1.12	1.2	1.07	1.04	1	1

Source Table obtained by processing data from Polverari (2013, 16) and from European Commission (2013, 9)

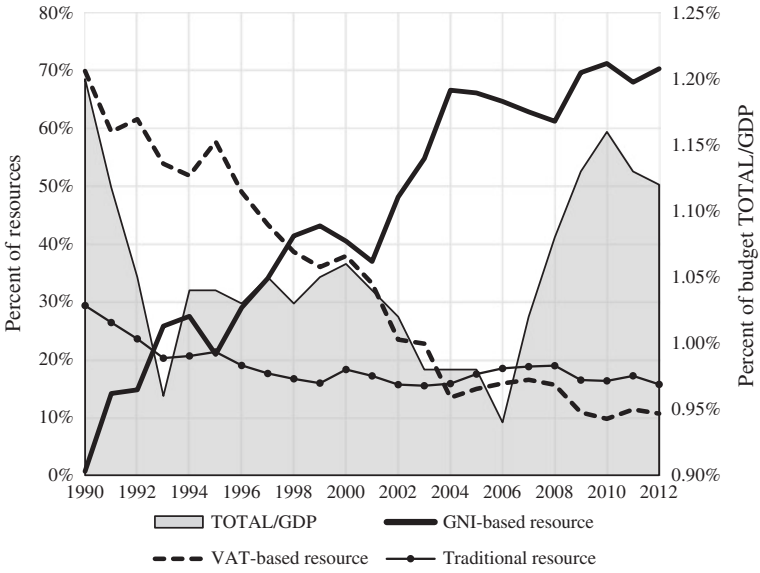

Fig. 1.1 European Union's budget and resources. *Source* Figure obtained by processing data from European Court of Auditors, various reports

The revenue of the EU budget is not genuinely "owned". Despite repeated reports of this anomaly, it still depends entirely on the individual States' contribution. Moreover, the three major categories of revenue (traditional, VAT-based and GNI-based resources) have different psychological and symbolic degrees of autonomy from a States' deliberations. Traditional resources are the most autonomous as they come from customs, agricultural duties, and sugar levies established in a quasi-automatic way. GNI-based resources are the least autonomous, because they are the result of States' deliberations even if established in relation to the per-capita income of the country. VAT-based resources are in-between, being a share (with complicated clauses and calculations) of the value added tax not directly paid by taxpayers but by States.

When cohesion policy doubled, between the end of the 1980s and the 1990s, a long, ongoing process of growth of the GNI-based resources related to the Union budget financing, also took place (Fig. 1.1).

This rise accounts for significant negative consequences. «The greater the share of the GNI contribution is, the more Member States conceive of it as a transfer from their national treasury to Brussels […] and the more importance they attach to what they get in return» (Haug et al. 2011, 2). The *opposition* between net contributors and net receivers as well as the increasing emphasis on the *fair return* concept deserve special attention. The underlying logic «is based on the erroneous assumption that European integration generally, as well as, more specifically, common policies financed by the European budget, are "zero sum games" in

which gains on one side necessarily mean losses on the other» (Le Cacheux 2005, 28). This logic poses obstacles to territorial development policies. If those who pay more than they receive immediately in return are convinced that the game is zero-sum, certainly they will try to do everything in their means to pay as little as possible, although in the long-run it is also in their interest to pay more. Without considering important political aspects (domestic and international), even from a strictly financial point of view, Germany and other northern European countries should have a vested interest in the economic growth of lagging regions, so that they become able to pay more. In order to increase the resources available for development policies, while reducing the harsh ongoing debates on their funding, as well as the risk of de-legitimization, it would be necessary for European policy makers to dispose of their own funds, mandatorily provided by citizens. This, however, would require a truly sovereign European Parliament entitled to impose taxes on its citizens, while European institutions and policies are still largely ruled by Member States.

The problems of financing the budget are not the only reasons for opposition—even in Europe—between place-based and people-based policies. Place-based policy is conceived as decentralized and generalist, while people-based policy is seen as state centralistic and sectorial. European cohesion policy has opted for a place-based orientation, but the EU milieu has only acknowledged this paradigm gradually. This is another probable reason why the policy has always been under threat.[19] However, it is not only a matter of path dependency. The indictment that regional policy was not sincerely in favor of regions in need of support has created an opposition between the place-based approach and the redistributive approach. In fact, the pre-final data on 1994–99 and 2000–06 programming periods, indicate that cohesion policy funds grew in favor of rich countries (Wostner and Šlander 2009, 10). Successive stages of EU enlargement increasingly called for an allocation of funds by means of a simple and transparent transfer of resources from rich to poor countries, without all the complicated planning system regional policies.

1.3.2 The 2014 Reform

For the first time since 1988, EU cohesion policy and its legal provisions were profoundly reformed in view of the need to implement regional programs in the 28 Member States during the 2014–2020 programming period. The new rules were

[19] In fact, academics, analysts, practitioners, and European governments continue to be uncertain about its rationale, organization and effectiveness (Manzella and Mendez 2009, 3).

formally endorsed by the Council of the European Union and came into force when the Official Journal of the EU, L 347, published them on December 20, 2013. The Partnership Agreements were adopted in the early months of 2014 as the final stage of a process that had begun five years before.

Between 2008 and 2009, the European Commission's Directorate-General for Regional Policy initiated a far-reaching debate involving academics, international and national institutions concerning cohesion policy's rationale, priorities, and administrative framework. At the same time, however, the European Council called on the European Commission to «undertake a full, wide ranging review covering all aspects of EU spending». Initially planned to be delivered in 2008, the review was finally presented in October 2010. Before this date, several public events, in addition to official and unofficial publications, made it clear that the direction of the reform that was recommended opposed the approach endorsed by the Barca Report. For example, at the Conference on Public Finance in the EU, on 3–4 April, 2008, only two presentations on regional policy were made. The first was introduced by Johannes Becker and Clemens Fuest and dealt with infrastructure, the other by Marisela Montoliu Munoz of the World Bank, who presented an anticipation of the main points contained in the World Bank Report which recommended the spatially-blind approach. The conference proceedings do not report critical comments on the clearly redistributive and sectorial approach of these two contributions.

Another significant event was the approval by the European Parliament of the resolution of March 29, 2009 "On the Mid-Term Review of the 2007–2013 Financial Framework", shortly before the Barca Report was presented (May 14th, 2009). This resolution mentioned cohesion policy only once: «simplify the procedures notably of the Management Control Systems (MCS) in order to accelerate payments». Moreover, its entire approach was sectorial and redistributive and called for a postponement in the start of the new programming period to 2016/2017.[20] The most important obstacle to the cohesion policy revival, was a draft Commission Communication issued in November 2009. Its key proposals on the future EU budget presented a serious threat to cohesion policy by suggesting that funding should focus on the less-developed Member States, instead of regions, with more "flexibility", clearly in a logic of redistribution (COM 2009, 11). In short, it is true that the Commission supported the revival of cohesion policy with the Barca Report and subsequent consultations along with several

[20] Shortly after, the European Parliament asked to switch to a structurally programming five years period, which would have severely damaged the entire cohesion policy's setup. Due to the most recent stances, the European Parliament is considered in favor of cohesion policy as place-based development policy (Mendez et al. 2011). A conversion therefore occurred, or maybe the European Parliament may afford such undulations because it still counts little.

Table 1.2 UE budget for cohesion policy

	2007–2013	2014–2020	2007–2013	2014–2020
	Million € constant prices		Percent	
Convergence and cohesion fund[a]	273,962	232,792	78	71
Transition[b]	24,738	31,972	7	10
Sum	298,700	264,764	85	81
More developed[c] and territorial coop	53,010	60,385	15	19
Total	351,710	325,149	100	100
UE budget total	994,175	959,988		

Source Table obtained by processing data from: http://ec.europa.eu/budget/mff/index_en.cfm, and from Bachtler (2013, 6)
[a]Less developed regions: GDP <75 % of EU-27 average
[b]Transition regions: GDP 75–90 % of EU-27 average
[c]More developed regions: GDP >90 % of EU-27 average

other documents.[21] At the same time, however, the Commission itself impoverished the policy's re-launch with its budget review aimed at downsizing regional policy in order to make room for purely redistributive actions in favor of the new Member States and sectorial actions (Mendez 2013, 651–652).

In terms of figures, despite the attribution of substantial funds to transition regions, the approach supporting redistributive policy did not win. There was, however, some negative impact on cohesion policy (Table 1.2). The cohesion policy budget, in fact, was reduced by 9 %, while the overall budget decreased only 3.5 %. This decrease took place even though the more developed regions increased

[21] June 22, 2009: Seminar on Reform of EU Cohesion Policy in Brussels, organized by the Commission and the Czech EU Presidency. June 25, 2009: The European Commission publishes the 6th Progress Report on economic and Social Cohesion, which includes the results of the public consultation launched in October 2008. April 15, 2010: The Committee of the Regions adopts the text on future Cohesion policy after 2013, drafted by Michael Schneider. 4–7 October 2010: 8th European Week of Regions and Cities (Open Days) on the theme "Europe 2020: Competitiveness, co-operation and cohesion for all regions". October 7, 2010: The European Parliament adopts a resolution on EU Cohesion and regional policy after 2013 proposed by Danuta Hübner, head of the Committee for Regional Development. November 10, 2010: The European Commission publishes the 5th Report on Economic, Social and Territorial Cohesion and launches a public consultation. December 7, 2010: Conference on "Cohesion in Europe: Regions Take up the Challenge" organized by the Assembly of European Regions (AER) in Brussels. January 31, 2011: 5th Cohesion Forum organized by the European Commission in Brussels "Investing in Europe's future: The contribution of Cohesion policy to Europe 2020". April 2011: The European Commission publishes the results of the public consultation on the conclusions of the 5th Report on Cohesion Policy. May 2011: informal meeting of ministers responsible for regional development, organized by the Hungarian Presidency of the EU Council. June 2011: The European Commission presents proposals on the size and shape of the EU budget after 2013 (Multi -annual Financial Framework). July 2011: the European Commission publishes proposals on the structure and rules relating to EU cohesion funds after 2013. 10–13 October 2011: 9th European Week of Regions and Cities (Open Days) in Brussels. Fall 2011: The European Commission presents the new legislative package for cohesion policy.

their share from 15 % in 2007–2013 to 19 % in 2014–2020. The share allocated to the less developed regions is 71 % for the 2014–2020 period against 78 % in the 2007–2013 phase. This "victory" of major contributor countries was duly accompanied by rule changes creating greater severity in the selection and implementation of programs and projects, which were definitely more geared to the priority objectives set by the European Union.

This condition was also accompanied by the symbolic success (but with practical consequences) of the "smart specialization" formula. The idea is natural in a place-based approach, i.e. oriented to avoid the "me too" syndrome. The fear that a policy available to more regions than previously would not be legitimized justifies the attempt to assure, by means of at least a conceptual construct, that funds should not be allocated without good reason.

Unfortunately, despite European rhetoric, there is a significant distance from the recommendations and guidelines set out in the Barca Report, not so much on regulatory issues, but regarding perhaps more important organizational and political aspects.[22] These recommendations called for a much improved, high-level political debate, fuelled by the new information on performance produced by the previous changes. A renewed system of checks and balances among the Commission, the European Parliament and the Council, was to be strengthened by creating a formal Council for cohesion policy, assessing decisions and results and issuing recommendations. The Report also suggested increasing administrative and technical capacities to design, monitor and evaluate programs, both in Member States and in the Commission. These recommendations were not implemented. «While the proposals on *ex-ante* conditionality seek to improve institutional capacity, the main focus is on program implementation issues (e.g. project planning and procurement) rather than strategic capacity» (Mendez et al. 2011, 135). By contrast, the Barca Report guidelines for cohesion policy rules were accepted and even strengthened. For example, the "performance reserve",[23] proposed at 3 %, and established at 5 % (after a first 7 % hypothesis).

[22] Pillar 6: Promoting experimentalism and mobilizing local actors. Pillar 8: Refocusing and strengthening the role of the Commission as a center of competence. Pillar 10: Reinforcing the high-level political system of checks and balances.

[23] «Countries and regions will have to announce upfront what objectives they intend to achieve with the available resources and identify precisely how they will measure progress towards those goals. This will allow regular monitoring and debate on how financial resources are used. It will mean additional funds can be made available to well-performing programmes (through a so called performance reserve of 5 %) towards the end of the period. Ex post conditionality will strengthen the focus on performance and the attainment of Europe 2020 goals. It will be based on the achievement of milestones related to targets linked to Europe 2020, set for programs covered by the Partnership Contract. A total of 5 % of the national allocation of each fund will be set aside and allocated, during a mid-term review, to the Member States for the programs that have fully met their milestones. In addition to the performance reserve, failure to achieve milestones may lead to the suspension of funds, and a serious underachievement in meeting the targets of a programme may lead to cancellation of funds» (European Commission 2013).

It would appear that higher provision for more developed regions have made cohesion policy less easy to sustain. This was offset by stricter rules and a requirement for more specific objectives. The stricter rules and more specific objectives, however, did little to create sympathy for the policy. Indeed, as we have seen, place-based policies are very difficult to design, implement, and evaluate. It is hoped that the 2013 cohesion policy reform will influence the planning of interventions by making the objectives and tools required clearer. This reform deserved a great deal better at the level of organizational resources.

Appendix: The Italian Mezzogiorno

The reduction of unemployment in Southern Italy in the 1960s and 1970s was certainly a consequence of emigration, i.e. the reduction in labor supply, as outlined by the 2009 World Bank's Report. In 1951 the southern population was 24.9 % of the entire national population; in 1971 it decreased to 22.9 %. According to a survey conducted in 1978 by the Center for Economic and Agricultural Research for the South of Portici, between 1951 and 1971, 4,200,000 people, out of a total population of 17,500,000 emigrated from Southern Italy.

At the same time, there was a significant increase both in production and labor demand, which Indermit Gill ignored. Figure 1.2 shows the course of the South/

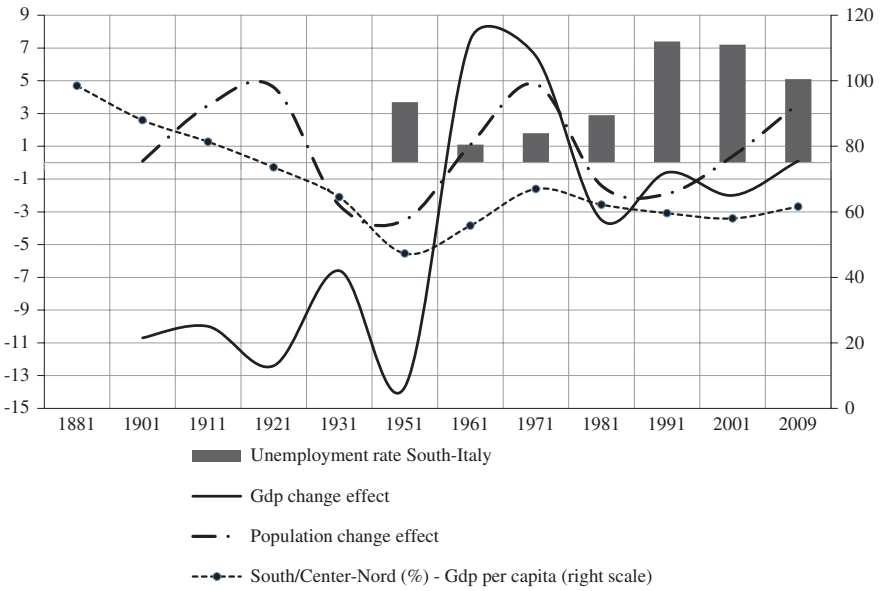

Fig. 1.2 Some figures about the North-South divide in Italy. *Source* Figure obtained by processing data from Iuzzolino et al. (2011, 64–74)

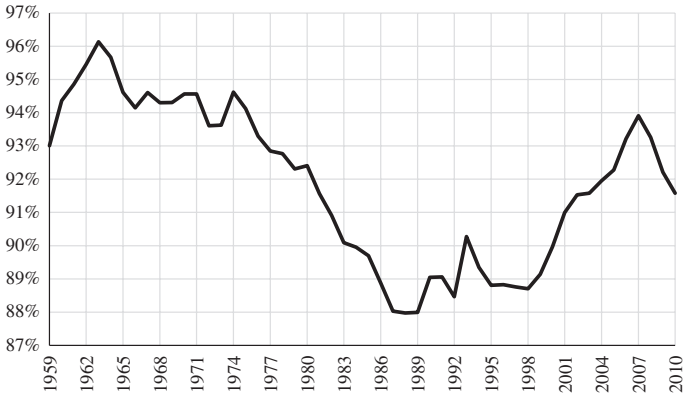

Fig. 1.3 Italian rate of employment (on the labor force). *Source* Figure obtained by processing data from Istat (2011, 474)

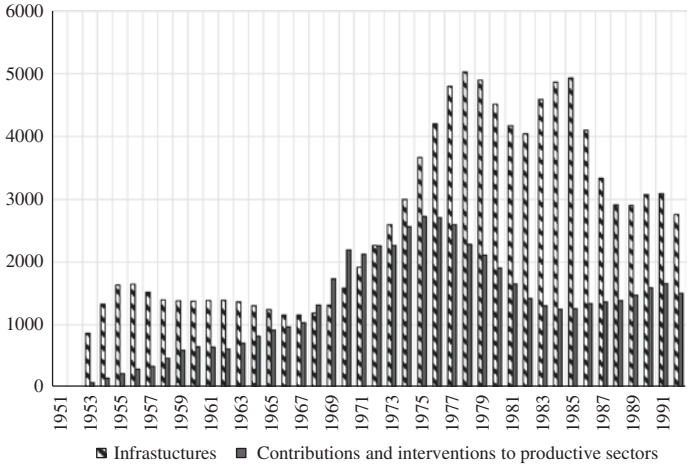

Fig. 1.4 Cassa per il Mezzogiorno, expenses in million euro in constant prices (2008), moving three year averages. *Source* Adapted from Lepore (2012, 101)

Centre-North share of GDP per capita and of its two components, population and GDP change. The share of per capita income in the South decreased constantly from 1881 to 1951. In 1881, twenty years after the Country's unification, there was no gap recorded between North and South because the North-East was very backward. While this gap within the North gradually closed, the North-South gap opened and continued to grow. The 1960s and 1970s were the only period when a significant reduction in the North-South division was achieved. This was the time of the "Italian economic miracle" (1959–1974), as shown in Fig. 1.3, and also the time of a particularly effective development policy implementation in favor of the South, as shown by Lepore (2012).

The Cassa per il Mezzogiorno's intervention in favor of the productive sectors through grants, loans, direct investments (which could be considered in the logic of a place-based paradigm) were particularly relevant in the 1960s and 1970s. The most significant expenditure on infrastructure (sectorial top-down interventions), on the other hand, occurred in the 1970s and 1980s (Fig. 1.4).

The period featuring the most notable place-based action is when there was the greatest growth in the GDP share per capita in the South compared to the Centre-North due to the component of local growth and not to that of emigration. In comparison, the following years witnessed higher expenditure in infrastructures and lower economic growth. In general, although these interventions in favor of the South did not cancel the gap with the Center-North, they are correlated with the interruption of its historical upward trend. Moreover, in their period of greatest intensity, these policies produced a remarkable reduction of the gap, which later stabilized at a significantly lower level compared to the 1950s when the South-oriented policy began.

The Italian Mezzogiorno, therefore, does not demonstrate that regional development policies are inevitably destined to fail. Although the South has not reached the development levels of the Center-North, it is also true that when the policy for the South was very active, significant results were successfully achieved.

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Chapter 2
The Spatial Perspective

Abstract In this chapter, we start showing that development processes are spatially uneven. In advanced regions there are factors that lead to increasing returns: economies of specialization, economies of scale, and external economies. Opening markets might thus bring about regional divergence as a result of a cumulative inflow of mobile resources to the more advanced regions. We then observe that in lagging regions there may be, however, untapped immobile resources, and their valorization justifies place-based policies. Current profitability may be in favor of a certain spatial distribution of activities, but potential profitability may be in favor of a different distribution. The possible movements that may arise will depend on the formation of ex ante expectations. It is therefore reasonable to think that intentional actions such as place-base policies—supporting the best exploitation of untapped, immobile resources where they exist—are justified and may produce significant results. We will lastly examine whether and how realistic it is to assume that these resources are untapped, taking into account a strong objection: if resources are available, they will be spontaneously exploited in a market capitalism system.

2.1 Regional Imbalances

In Chap. 1 we saw that place-based policies are appropriate if they are designed to effectively exploit existing, untapped local resources. Otherwise they are less efficient than real people-based ones. Place-based policies, therefore, require special organizational tools and detailed impact evaluation to learn from experience. We then saw that since the 1990s European cohesion policy has aimed to be a place-based policy, especially with the reform approved in December 2013. We also saw that this reform did not entirely succeed in strengthening its organizational and evaluative system. These considerations could lead to a certain pessimism regarding the chances of success of a place-based policy. We will now consider what objectives and challenges place-based interventions require. We will start

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this survey using the NEG models that inspired the 2009 World Bank report. NEG models can lead also to place-based policies. In fact, the mechanism shaping the spatial location of production activities also depends on local, immobile resources. In order better to understand the significance of immobile resources, however, we must first examine the issue of mobile resources, and why they do not go in the "right" direction.

Over the last 40 years, capital has become more mobile worldwide. Such mobility has been even more marked in the Euro zone. Kaminsky and Schmukler (2002) constructed an index of capital flows liberalization ranging from one (no liberalization) to three (maximum liberalization), and found that from 1973 to 2001 in G-7 countries the index has grown continuously from 2 to 3 while in other European countries it has increased from 1.5 to 3 and in South-East Asian countries it has grown from 1 to 2.7. Even in Latin America the index has grown almost to the same extent, recovering the serious fall that came with the 1983–1988 financial crisis. Considering Quinn et al. (2011), these trends continued between 2001 and 2007, while other indicators showed different results in terms of liberalization levels, but similar trends.

These openings in capital markets should have reduced regional and country disparities in Europe and around the world. That is, income gaps lead to much greater gaps in the rate of returns on capital, dictating—in free capital markets—that large flows of capital should be transferred from more advanced to backward areas, thus reducing these disparities. In Europe, however, while disparities between countries first increased and then (in the last 15 years) decreased, disparities between regions, which are much larger, showed no reduction at all. (In 2010, the GDP per capita of the richest country, Luxembourg, was 7 fold higher than the poorest, Bulgaria; but the richest region, Inner London, had a GDP per capita 12.4 times higher than the poorest region, Severozapaden—Bulgaria). We can add that, between 1995 and 2009, in terms of indicators of well-being such as life expectancy and mortality (normally more converging than the per capita income), a recent research did not find any sigma convergence between European regions as a whole (Maynou et al. 2014).

In the rest of world, according to 2012 World Bank data, the per capita income ratio in purchasing power parities between the 20 % of richest countries and the 20 % of the poorest, in a sample of 184 countries, is 30. The largest country among the 20 % of the richest is U.S., and the largest among the 20 % of the poorest is Bangladesh. The ratio between U.S. and Bangladesh per capita income is 20. However, considering the leading area in U.S. (New Jersey) and the most lagging area in Bangladesh (Rajshahi), the ratio of New Jersey's per capita income and Raishahi's is 117.[1] The proportional income gap between Mayer-Foulkes's (2002)

[1] Calculation is based on data from page 338 and 339 of the World Bank's 2009 report. Leading area is defined as the area with the highest measure of welfare per capita (income or consumption or GDP) as percentage of country's average welfare measure. Lagging area is defined as the area with le lowest measure of welfare as percentage of country's average welfare measure.

richest and poorest groups of countries (a total of five groups) grew by a factor of 2.6 between 1960 and 1995. International inequality continued to rise after 1995 among world countries (excluding China) until about 2000. It then began to decrease, this time including China. However, «income disparities among global citizens seem to have remained unchanged, despite a reduction in international (between countries) inequality. Most important, this widening gap between international and global inequality appears to have resulted from increased income disparities *within* countries—notably in large emerging Asian economies such as China, India and Indonesia, as well as many OECD countries» (Olinto and Saavedra 2012). «Disparities in economic performance across OECD countries are often smaller than those prevailing among regions of the same country. Further, these regional disparities have persisted over time, even when economic disparities among countries were falling» (OECD 2010). In sum, world globalization and the integration process in Europe seem to be accompanied by a significant economic divergence among regions. This is difficult to understand if you consider that convergence was favored by an increase in capital mobility. Mobility of capital, of course, is greater between regions than between countries.

This demonstrates that there is something else to deal with, beyond the availability of capital and free markets. Recent growth economics has taken human capital into account, seen as a complement of material capital. In principle, this could explain the persistence of the gap. Material capital does not move in the right direction owing to a lack of human capital in lagging economies, which makes material capital less productive and less profitable than it should be if we consider its scarcity. However, it has been shown that only half of the gap between rich and poor countries depends on both material and human capital (Caselli 2005). A calculation breaks down the value of 24 (existing ratio between the 20 % richest and 20 % poorest countries' GDP per capita based on 2005 Penn World Tables, on a sample of 84 countries) into the *product* of two components: 4.8 points relate to the endowment of labor, material and human capital, while 5 points are a *residual*, called total factor productivity (*tfp*).[2] At macro and sectorial level, countless empirical works, for countries and regions, essentially confirm the same results, i.e. that a significant part of per capita income differences cannot be explained by different endowments of labor, material and human capital.

Many studies have tried to identify factors affecting the residual *tfp*.[3] They have shown that: (i) these factors are significantly different and country-, region-, and sector-specific; (ii) some regularities emerge suggesting five major influences: initial conditions, cumulative processes due to complementarities (giving increasing returns) between material, human capital and economic organization, technological change, specific resources, factor and product mobility; (iii) there are

[2] Klenow (2006) divides the same ratio (24) into four multiplicative components: the employment rate of the population (1 point), physical capital per output unit (2 points), human capital (from 2 to 4), and residual *tfp* (from 3 to 6).

[3] For valuable reviews see: APO (2004), Isaksson (2007), Danquah et al. (2011).

interrelationships among these five factors, and it is very difficult to identify which of them prevails.

As it is difficult to distinguish empirically what the prevailing factors are, two different positions could be justified. The first claims that resources and mobility of factors and products are what count most. It also claims that initial conditions, complementarities and cumulative mechanisms (history and geography) may affect development processes, although to a lesser extent in the long-term (when eventually diminishing returns overbear) or are offset in the whole economic system. The second position claims that "long term" and the "whole economic system" do not provide a useful perspective. «The purpose of the exercise in comparative dynamics is not to show how some hypothetical economy can expand indefinitely over time given certain underlying conditions. It is rather to explain why, as the historical record bears such strong witness, the expansion path of a free enterprise economy is likely to be so erratic» (Eichner and Kregel 1975, 1296).

From a territorial point of view, the most evident phenomenon linked to history and geography is the persistent spatial concentration of economic activities in some places and not in others. Spatial economics, interested in studying these agglomerations, believes it is useful to explain the different («erratic») growth of different places, considering the growth of the country as a whole as a result of these different growth patterns. In fact, spatial economics and economic geography have managed for a long time to explain the permanent gaps between regions that depend on the geographical advantages of some places (natural resources, historical concentrations of populations, favorable geographic positions), and on concentration forces such as *economies of specialization* (Smith 1776; Babbage 1832), *economies of scale* (Smith 1776; Young 1928) and *external economies* (Marshall 1890) even if they are contrasted by a number of divergent forces leading to dispersion, such as transportation and congestion costs. Economies of specialization, economies of scale and, in part, even externalities are linked to *indivisibilities* that are at the root of increasing returns and significant parts of *tfp*, which in turn imply imperfectly competitive markets[4] and cumulative processes of development by means of agglomeration.

[4] Increasing returns are conceived at the firm level or at the level of linked firms complex, as pointed out by Leijonhufvud (1986). It follows that the perfect competition is excluded, since firms or systems of firms with increasing returns undergo strong incentives to increase their size and consequently their market power. This, on the other hand, is what you need to have a definite geographical distribution of productive activities, which, according to the Starret's theorem (Starrett 1978), is not possible under perfect competition if there are indivisibilities and non-zero transportation costs.

2.1.1 Economies of Specialization

As Edwards and Starr (1987, 192) pointed out, Adam Smith's famous phrase «division of labor is limited by the extent of the market» would be false if labor were not "indivisible", because of "nonconvexity".[5] This term means that «the elasticity of output with respect to inputs is greater than 1 and the [production] function is not concave» (Romer 1990b, 4). This happens when increasing production also increases the division of labor and consequently requires skilled workers, who—through learning—execute a task better and in less time than unskilled workers. By doubling, for example, the work input, production is more than doubled. With division of labor, the addition of one unit of work gives rise, for example, to three product units, while without division of labor, each work unit corresponds to one product unit. This is the meaning of indivisibility, which is related to nonconvexity and economies of specialization. By employing specialized labor, you cannot gain an additional unit of production by employing one additional unit of labor; you gain necessarily a minimum of three product units. By contrast, unskilled labor is divisible, giving one product unit for each unit of work.

As Mill (1848) claimed, there are several causes of economies of specialization and «by Adam Smith they are reduced to three. First, the increase of dexterity in every particular workman; secondly, the saving of the time which is commonly lost in passing from one species of work to another; and lastly, the invention of a great number of machines which facilitate and abridge labor, and enable one man to do the work of many» (Mill 1848, I.8.15). Leaving aside for now mechanization, the two factors (dexterity and time loss reduction) do not include what Mill considered the most important source of economies of specialization, i.e. the assignment of different tasks to workers based on their different skills, as emphasized by Babbage (1832). «The greatest advantage (next to the dexterity of the workmen) derived from the minute division of labor which takes place in modern manufacturing industry, is one not mentioned by Adam Smith, but to which attention has been drawn by Mr. Babbage; the more economical distribution of labor, by classing the work-people according to their capacity» (Mill 1848, I.8.21). Babbage and Mill, therefore, assume that workers acquire different skills, and this has central importance in the process of division of labor and increasing returns. As we will show, this consideration implies the possibility of involuntary structural unemployment. It also allows interesting developments in our analysis, providing insight into the underlying causes of these different acquisitions of skill.

[5] «Indivisibilities typically imply local nonconvexities» (Romer 1990b, 3).

2.1.2 Economies of Scale

The division of labor, however, requires a costly, purpose-built organization. Thus, the division of labor is useful only if the size of the market is such that the entire production is sold to sustain organizational costs. If the market is not able to absorb the whole production, operators should avoid division of labor. Productivity will be lower, but they will not have to support organizational costs. This principle was pointed out by Charles Babbage, taken up by John Stuart Mill[6] and then by Nicholas Kaldor.

> It is to be remembered that it was under the assumption of "perfect divisibility" where all economies of scale are absent that the conception of equilibrium of the Lausanne School was elaborated. […] in a world where the scale of operations offers no technical advantages, economies could be gained by reducing that scale further and further until the need for co-ordination (i.e. the need for a specialized function of control, of decision-making) was completely eliminated. […]. In such a world, therefore, there would be no organization of production into firms, or anything comparable to it. (Kaldor 1934, 72-73, note 2).

We can now see that these concepts are applied in a numerical example in the spirit of Alex Leijonhufvud (1986) and using Miura's (2005) contribution on Babbage. There are drastic simplifications that nonetheless do not betray its logic and results. Let us assume, as in Smith's example, the production of pins requiring several activities, which Babbage schematized in seven processing stages[7]: (1) drawing wire, (2) straightening wire, (3) pointing, (4) twisting and cutting

[6] «[…] "it will have been found necessary to establish an accountant's department, with clerks to pay the workmen, and to see that they arrive at their stated times; and this department must be in communication with the agents who purchase the raw produce, and with those who sell the manufactured article" (Babbage). It will cost these clerks and accountants little more time and trouble to pay a large number of workmen than a small number; to check the accounts of large transactions, than of small. If the business doubled itself, it would probably be necessary to increase, but certainly not to double, the number either of accountants, or of buying and selling agents. […]. If an increased quantity of the particular article is not required, and part of the labourers in consequence lose their employment, the capital which maintained and employed them is also set at liberty» (Mill 1848, I.9.5, I.9.7).

[7] The stages were many more in Smith's example, so the seven indicated by Babbage were probably a result of its clustering. «To take an example, […] one in which the division of labor has been very often taken notice of, the trade of the pin-maker; a workman not educated to this business […] make one pin in a day, and certainly could not make twenty. But in the way in which this business is now carried on […] it is divided into a number of branches, of which the greater part are likewise peculiar trades. One man draws out the wire, another straightens it, a third cuts it, a fourth points it, a fifth grinds it at the top for receiving the head; to make the head requires two or three distinct operations; to put it on, is a peculiar business, to whiten the pins is another; it is even a trade by itself to put them into the paper; and the important business of making a pin is, in this manner, divided into about eighteen distinct operations, which, in some manufactories, are all performed by distinct hands. The business of making a pin is divided into about eighteen distinct operations» (Smith 1776, 3).

Table 2.1 Working hours of workers (A, B, C) in three production phases (I, II, III) for making one lb. of pins

Workers	Phases		
	I (wire processing)	II (heading)	III (finishing)
A	2	3	3
B	3	1	4
C	3	3	2

Table 2.2 Production in parallel

Products (lb. of pins)	Working hours							
	First	Second	Third	Fourth	Fifth	Sixth	Seven	Eighth
	Workers and phases							
1	AI		AII			AIII		
2	BI			BII	BIII			
3	CI			CII			CIII	

heads, (5) heading, (6) tinning, or whitening, (7) papering (Babbage 1832, 184). To simplify, let us assume that the production process can be further clustered into three phases: wire processing, heading, and finishing. In fact, as pointed out by Miura (2005, 10), heading and finishing should be considered relevant stages (bottlenecks). Thus the division into three stages of production represents a strong but rational simplification.

Let us assume that three workers A, B, C are equally capable of producing one lb. of pins in each hour of eight hours of work,[8] but differently capable in the individual stages of production, as shown, for example, in the Table 2.1.[9]

Consequently, in isolation and working in *parallel*, each of them produces their lb. of pins every eight hours of work, implementing the three stages of processing and sells them on the market at the same price. The production arrangement is as follows (Table 2.2).

Worker A attends phase I in the first two hours, goes onto phase II in the following 3 h, and finally moves to phase III during the last 3 h. Worker B attends phase I in the first 2 h, then goes onto phase II in the 4th h, and so on.

These workers, however, understand that there is a way to reorganize their work among themselves to obtain greater efficiency. This is to assign to each

[8] In Babbage's Table, the time for making one lb. of pins was 7.6892 h. One lb. was the weight of 5,546 pins.

[9] In Babbage's Table, the time for making the individual stages of production for one lb. of pins was 1.3436 h for drawing wire, straightening wire, pointing, twisting and cutting heads; 4 h for heading, 0.1071 h for tinning or whitening, 2.3456 h for papering. In order to make simpler the representation, we assume a narrower definition of heading so that the three production stages can appear more similar in average time of execution.

Table 2.3 Series (lame) production

Products (lb. of pins)	Working hours							
	First	Second	Third	Fourth	Fifth	Sixth	Seven	Eighth
	Workers and phases							
1;2	AI		BII		CIII		AI	
2;3	BII		CIII		AI		BII	
3;4	CIII		AI		BII		CIII	

Note We assume that this is the generic working pattern. The production has already begun before the 8 h work represented here. At the beginning there are ready: one lb. Of pins that lacks the Phase II and III, another lb. that lacks only the phase III. The same two semi-finished lb. of pins can also be found at the end of the 8 h, in addition to the four finished. *Dark* areas indicate hours of inactivity/unemployment

Table 2.4 Series production

Products (lb. of pins)	Working hours							
	First	Second	Third	Fourth	Fifth	Sixth	Seven	Eighth
	Workers and phases							
2;4	2(AI)		BII	BII	2(CIII)		2(AI)	
4;6	BII	BII	2(CIII)		2(AI)		BII	BII
6;8	2(CIII)		2(AI)		BII	BII	2(CIII)	

worker the production phase in which he/she is more efficient. The new arrangement may look like a *lame series* production. Each worker is now dedicated to the phase in which he/she is more efficient. The A worker implements only phase I, the B worker phase II, the C worker phase III, respectively. As shown in the next table, this production system involves a waste of time which would become unemployment in a larger scale of production. Three men are now making 4 lbs. of pins working a total of 20 h with 4 h of inactivity. This means that 12 lbs. of pins require 60 h of work with 12 h of inactivity, i.e. one worker/day of unemployment.[10] This is the reason why we used the term "lame". The same waste of time/labor, can be seen as a saving of time/labor if the production system is organized by an employer (Table 2.3). And it is from this viewpoint that Babbage defines the principle of division of labor, according to the different skills he introduced. «That the master manufacturer, by dividing the work to be executed into different processes, each requiring different degrees of skill or force, can purchase exactly that precise quantity of both which is necessary for each process».[11]

While Babbage's principle of the division of labor has generally been considered only from this labor-saving point of view, most likely because this is the way

[10] The working time was 12 h a day, as reported by Babbage.

[11] Babbage (1832, 175), as quoted by Miura (2005, 3).

Marshall used it, Babbage also formulated a second distinct principle. «Babbage himself implicitly indicated another principle of the division of labor that the number of employees must be based on the synchronization among processes» (Miura 2005, 1). In fact, as we can see in the next table, the example we have given shows that a third system of working is possible, i.e. the most efficient in terms of productivity. It requires, however, two more workers (one type A, and one type C) and a broader market of the final product (8 lbs. of pins sold every 8 h instead of 4). We will see later that this condition assumes considerable importance for the possible development of our analysis.

Let us assume for now that these workers are available, so that the productive framework may be a *series* production (Table 2.4). The waste of time and unemployment disappear by adding new skilled labor resources, which are *complementary* to the existing ones, the very lack of which gave rise to lame series production and unemployment. In this way the hourly productivity of the overall workforce increases.

We now have 8 lbs. of pins produced by 5 workers. Productivity has increased. In the parallel system, without division of labor, the productivity was 3 lbs. of products divided by 3 workers, equal to 1. In the lame series production, the productivity was 1.3. In complete series production productivity was 1.6. We thus have *increasing returns due to economies of scale* at a system level.

Furthermore, the number of exchanges also increased. Not considering the purchase of raw materials, in the parallel system there were 3 products which reached the final market. In the lame series system, we find 4 products in the final market, and 6 from one worker to another with a total of 10 exchanges. In the series system, the exchanges are 8 in the final market and 12 from one worker to another, i.e. equal to 20. The exchanges entail organization: to establish and continuously monitor the quantity and quality of deliveries and to ensure appropriate timing (if a phase slows, the whole process of production is delayed). Moreover, in the parallel system each worker had his own contact with the end customer. In the series production system this contact is held only by one worker (C), who bears greater responsibility because he is holding the economic fortunes of all the others in the balance. These series system complications imply substantial costs to be borne by each worker since they are not specialized in these functions. It is less costly to introduce division of labor into productive and organizational tasks. This means arranging production within a *firm*, where a specialized coordination function that is able to deal with all the exchanges can be made available, as Kaldor (1934) stressed.

Let us imagine, for simplicity's sake, that without a firm, workers would be forced to spend all the productivity gains made through the division of labor on organization costs. In this case, parallel and series systems would be economically the same. It is the firm that can implement the division of labor, since it is able to obtain a consequent *surplus* if the final market is large enough. Introducing a firm also brings about positive feed-back between division of labor and the size of the market. «The division of labor depends upon the extent of the market, but the extent of the market also depends upon the division of labor» (Young 1928, 539). The reason for this reverse causation is that the firm, with the surplus that it gets,

has the means to increase its production scale (with additional 5, 10, 15 workers and so on) in order to introduce powerful *production tools*. «It would be wasteful to make a hammer to drive a single nail; it would be better to use whatever awkward implement lies conveniently at hand […]; the principal advantage of large-scale operation […] is that it […] make methods [the hammer] economical which would be uneconomical if their benefits could not be diffused over a large final product» (Young 1928, 530).

The fact that these methods are «uneconomical if their benefits could not be diffused over a large final product» indicates the existence of *economies of scale at firm level*, alongside economies of scale at production system level. The resulting productivity gains can be sufficient to support an adequate expansion of demand (market size) in an open partially export-driven economy, as in the Beckerman (1962) model. As to domestic demand, we can add that the same increasing returns logic may be applied to both firms producing tools and firms using pins to make clothes. This logic entails economies of scale also at the *economy level*, i.e. a process of general income growth. The pin internal market will also grow.

2.1.3 External Economies

So far, nothing has been said about the spatial dimension. We will now see that *external economies*, which are also linked to the division of labor, constitute important factors of agglomeration because they give rise to increasing returns of productive activities located *close* to one another.

Dedicated tools and machines, brought into use in production processes with division of labor and large economies of scale, need to be invented, produced, and continually updated. They require specific activities, which cannot usually be conducted by the same firm that uses the equipment, whose production requires different knowledge and organization. In fact, the experience of countless industrial districts would indicate that industries of final goods grow side by side with industries that produce machinery and equipment for the same final goods industries. The reason is that there are reciprocal know-how *spillovers* coming from a close interplay between dedicated equipment producers and users, which have a significant role in supporting the continuous improvement in production processes. We may say that this kind of productivity gains are due to *external economies*: one firm's benefits created externally by the very existence of other firms.

However, it is important to specify that the supply and purchase of dedicated, customized equipment require mutual exchange of relevant information concerning customer's special needs as well as supplier's technical and economic capabilities and constraints. This exchange of information is normally included in the contract. The buyer and the supplier mutually benefit from information exchange, but this is fully accounted for in the price-fixing. Information exchange does not constitute an *externality*, to the extent that buyer and seller could find themselves far apart and exchange information through means of distance communication. Knowledge

spillovers as positive externalities refer to another mechanism. If buyer and supplier may closely interact, they can directly learn what the other's technical and cultural operating environment, where its *tacit* knowledge is embodied, is (Rosemberg 1982; Nelson and Winter 1982; Von Hippel 1994).

This discovery of the other party's *tacit* knowledge may suggest possible improvements in their reciprocal "languages", which can, in its turn, lead to possible improvements in reciprocal products and processes. Still, there is no contract for this learning. The reciprocal benefits are often involuntary, always uncertain, and never quantifiable. In fact, it is possible that this learning precedes and makes feasible a *subsequent* contract between firms that develop explicit, durable, and collaborative relationships. Thus, knowledge spillovers of this kind can be considered externalities. This is the third type of positive (local) externalities indicated by the «Marshall's trinity: specialized providers of industry inputs, thick markets for specialized labor skills, and information spill overs» (Krugman 2010, 1). Knowledge spillovers between producers and users of dedicated equipment thus join information spillovers between nearby firms producing the same or similar goods (Feldman 2000), which can adopt the technical and manufacturing solutions introduced by others.

Holding together these two forms of spillover seems to be the best interpretation of the famous passage from Marshall, usually interpreted as including only the second form.

> When an industry has thus chosen a locality for itself, it is likely to stay there long: so great are the advantages, which people following the same skilled trade get from near neighborhood to one another. The mysteries of the trade become no mysteries; but are as it were in the air, and children learn many of them unconsciously. Good work is rightly appreciated, inventions and improvements in machinery, in processes and the general organization of the business have their merits promptly discussed: if one man starts a new idea, it is taken up by others and combined with suggestions of their own; and thus it becomes the source of further new ideas. And presently subsidiary trades grow up in the neighborhood, supplying it with implements and materials, organizing its traffic, and in many ways conducing to the economy of its material. Again, the economic use of expensive machinery can sometimes be attained in a very high degree […]. For subsidiary industries devoting themselves each to one small branch of the process of production, and working it for a great many of their neighbours, are able to keep in constant use machinery of the most highly specialized character, and to make it pay its expenses, though its original cost may have been high, and its rate of depreciation very rapid. (Marshall 1890, IV.X.7 and IV.X.8).

In order to see how the first two types of externalities (inputs' specialized providers, thick labor market for specialized skills) have their root in division of labor and, consequently, in increasing returns of scale, we have to consider that there are limits to the expansion of the firm size. The fact that organizational advantages turn into disadvantages over a certain threshold (a principle that is usually referred to Williamson 1975) was already clear in a passage from Stuart Mill. «Whether or not the advantages obtained by operating on a large scale preponderate in any particular case over the more watchful attention, and greater regard to minor gains and losses, usually found in small establishments, can be ascertained, in a state of free competition, by an unfailing test» (Mill 1848, I.9.7).

The market cannot be dominated by one large firm even if there are economies of scale at firm level. The result of the feedback between division of labor and the extent of the market will lead to the birth of *many* new firms. More firms entail more differently skilled workers. Going back to the previous numerical example, the possibility of finding workers "of type A" especially able in phase I (wire processing), and of "type C" especially able in phase III (finishing), depends on the existence of a broad pool of differently specialized workers. The existence of many firms nearby is *one of the two* conditions that makes this differentiation possible.

If we consider the series production as a firm, we may say that this firm's "core" activity is phase II (heading) in which it is particularly efficient thanks to the specialized worker B. Other firms may have different peculiar capacities. This can happen in part, as the example shows, in the production of pins. We have seen that the most critical production phases are heading (phase II) and finishing (phase III). It is therefore reasonable to imagine that besides the firm specialized in phase 2, there will be another firm, or other firms, specialized in phase III. These firms will therefore provide skilled workers of type B and type C to the local labor market. In order to obtain the availability of workers of type A, however, another condition must be true.

As mentioned before, the specialization in stages two and three is because these are crucial phases in pin making, owing to the technology of the production process. Thus, the meaning of the term 'crucial' is 'particularly difficult from a technical point of view'. For example, producing the pin head requires extreme precision in size and movement. Finishing requires sharpening and polishing with exact pressure and timing in the application of friction materials, otherwise the pin breaks. Consequently, only "experts" can perform these activities without too many mistakes in an appropriately short time, namely those, which have undergone specific learning curve. Phase one (wire processing) is less technically difficult and therefore there is no need to develop specific skills.

In order to have skilled workers in phase I, the firm has to invest in its learning process purposely. It will therefore be probable that firms forced to invest in learning processes in phase I, will ensure such investment against economic fluctuations. They implement this strategy by diversifying the final production, starting, for example, with needles, wherein phase I (wire processing) is crucial from a technical point of view, while raw materials are the same as for pins, and the end markets are similar or related. Needles do not have heads but eyes. If heading (with finishing) is central in the pin production cycle, in needle production wire processing is crucial because the eyelets can break the stem of the needle if the wire processing is not accurate.

We can therefore assume that, in general, a variety of firms implies a variety of forms of division of labor, as well as a diversification of final products. We can imagine that each firm uses and reproduces specifically differentiated specialized workers, through learning. The result is a diversified labor market of specialized skills, as workers move from one company to another in search of better earnings and working conditions.

It is essential to find out whether *all* specializations are actually available. In our example, the point is to know whether skilled workers of type A and of type C

are actually available on the labor market as a result of existing firms with a "core" activity in phase I (wire processing) and others with a "core" activity in phase III (finishing). This availability can be said to exist if the firms are maximizing actors and respond to *all the opportunities* available. As we will see later, a more realistic assumption sees firms as actors with a narrower set of available options. In this way, it is realistic to consider that the specializations available could be incomplete. In this case, the feasible production system will not be optimal. It will become an intermediate form between a lame series and an in series. There will also be involuntary structural unemployment due to the lack of *complementary skills* required for full employment.

Let us assume for now the simplest hypothesis that all specializations are actually available. In *every* firm it is possible to complete the in series production systems by hiring the needed complementary skilled workers, hiring them from the local thick labor market. By doing this, we may also have a second form of system in series completion. The firm, instead of hiring one more worker of type A and (one more) of type C, may purchase phase products (of phase I and of phase II) from other specialized firms to complete their production cycle. This is the second type of external economy, i.e. «specialized providers of inputs».

In conclusion, the existence of indivisibility—and hence economies of specialization—is linked to economies of scale and external economies which, taken together, can be considered strong factors of agglomeration. Therefore, persistence and expansion of economic gaps between regions despite the mobility of factors and products ultimately depends on the indivisibility.

Of course, all this takes place in industrial production that are able to agglomerate (because they are not tied to the land) and have productive processes divisible in elementary tasks in which learning and specialization can be carried out. John Stuart Mill observed this.

> The division of labor is also limited, in many cases, by the nature of the employment. Agriculture, for example, is not susceptible of so great a division of occupations as many branches of manufactures. […]. To execute a great agricultural improvement, it is often necessary that many laborers should work together; but in general, except the few whose business is superintendence, they all work in the same manner. A canal or a railway embankment cannot be made without a combination of many laborers; but they are all excavators, except the engineers and a few clerks. (Mill 1848, I.8.24).

2.2 New Economic Geography

2.2.1 Purpose

Increasing returns and external economies (that give rise to spatial industry agglomeration) were discovered, as we have seen, as far back as the end of the eighteenth century. Subsequently, they were not entirely neglected, although the marginalism that was becoming dominant built its models without taking them

into account. Immediately after World War II, the agglomeration processes returned to the fore, especially with François Perroux, Gunnar Myrdal, and a considerable literature of spatial economics inspired by their contributions. Perroux was especially known for his contribution on asymmetric influences between firms[12] depending on their dimension, industrial sector, and local context. He claimed that some of them, in some places, may be "propulsive", that is, able to drive a "pole" of growth. Myrdal, on the other hand, was a sociologist and economist engaged in high-level direct political responsibilities (Twice Member of U.S. Chamber of Representatives from 1933 to 1947, he served as Trade Minister in Tage Erlander's government, and was Executive Secretary of the United Nations Economic Commission for Europe in 1947). He received the Nobel Prize in Economic Sciences with Friedrich Von Hayek in 1974 for «Research on the interrelations between economic, social, and political processes». In his famous essay "An American Dilemma: The Negro Problem and Modern Democracy", published in 1944, the "cumulative causation" mechanism was applied. He had already encountered this kind of circular process in Knut Wicksell's theories of endogenous money, and then he proposed other applications, also to explain spatial agglomeration processes. With "Economic Theory and Under-Developed Regions" (1957), "Asian Drama" (1968) and "The Challenge of World Poverty" (1970), «Myrdal showed how cumulative causation was fundamental in explaining international and interregional disparities of income. As such disparities are reflections of agglomeration of production and wealth in geographical space, […] it can be fairly said that he developed a theory of spatial agglomeration even if he did not use the term» (Meardon 2001, 45).

Poles of growth and cumulative causation concepts were conceived from the outset as part of an analysis taking history, society, culture, and institutions explicitly into account. It was widely used in a vast literature of spatial economics, which for 30 years stood in opposition to orthodox economics where space had no scope. The approach also gained considerable practical importance having inspired a season of "policies for the development poles" throughout the world (Meardon 2001, 38 and 40). The fact remains that several scholars justified Mark Blaug's severe judgment on Perroux's methodological weakness: «Unfortunately, the theory is unsatisfactory […] being in principle non-falsifiable: it is simply a slogan masquerading as a theory» (Blaug 1964, 563, cit. in Meardon 2001, 42).

In the mid and late 1970s, these theories became much less popular. At the same time, there was widespread disappointment for the failures of development that poles policies had brought about. According to Parr (1999a, b), these failures

[12] Perroux clearly makes use of the concept of external economies: «[…] la situation où le profit d'une firme est fonction de son débit, de ses achats de services, du débit d'une autre firme, des achats de services d'une autre firme. Dans cette situation, les deux firmes ne sont plus reliées entre elles par le seul prix; elles le sont aussi par le débit et par les achats de services, c'est-à-dire, puisque ces éléments dépendent de la technique et de ses changements, par la technique pratiquée par les firmes et par leurs changements» (Perroux 1955, 309).

were the result of «[…] insufficient attention […] paid to the question of whether planned poles were equivalent to poles that had evolved independent of planning, or for that matter whether poles could be planned successfully in the first place» Parr (1999a, b, 1198, cit. in Meardon 2001, 40). Planning the poles meant providing an answer to the question "what if?"[13] Is it true, and depending on what further conditions, that a process of localized development can be self-sustained by cumulative causations? The answer could only be given with a model in which the main currently *operable* variables and mechanisms are well identified. Furthermore, in order to be truly operable, these variables must normally be quite distant from the effects which they give rise to. It is not enough to say that the firm must be of a "propulsive"-type and that, after its propulsion, growth will continue supported by a circular causation process. This does not guarantee that the requirements have a framework that help answer the question "what if?"

In this regard, we can recall Krugman's list of requirements for a model suitable for this purpose: (1) Microfoundation (we must understand how everything in set in motion by agents, their actions and reactions); (2) No dormitive properties («the reference is to Moliere's doctor, who triumphantly explains that opium puts people to sleep because of its dormitive properties»). (3) Distance between assumptions and conclusions («you're learning more from a model if the rabbit isn't stuffed too visibly into the hat just before the theorist pulls it out»). (4) More than one possible outcome. (5) The model must be tractable («something you could analyze with pencil and paper and understand what was going on») (Krugman 2010, 9).

However, you may argue (against all this) that it might be a too high price to pay for a rigorous and formalized model fulfilling these five requirements. In fact, without and before formal models fulfilling Krugman's prescriptions, «there is a long geographical tradition of using externalities, increasing returns and cumulative causation in urban and regional analysis», able to explore «industrial agglomeration, […] uneven regional development, […] "industrial districts", […] inertia effects in the rise and decline of urban and regional economies, […] and the importance of labor and technology in regional development» (Martin 1999, 70–71). To be designed according to Krugman's list, the models would require highly unrealistic exclusions or oversimplifications concerning geography, culture, society, and institutions, all of which have a considerable impact in the real world.

Finally, a model that answers the question "What if?", but with the wrong answer, is not much use. We could say, then, that a tension between two opposing

[13] «When the Depression struck, there was a desperate need for answers—and the answers wanted were to the question, "What do we do?" not "How did we get here?". Faced with that question, the institutional economists couldn't deliver; all they could offer was, well, persuasive discourse on the complex historical roots of the problem. […] what mainstream economists want is the ability to answer "what if" questions: if something were different, how would that change the economic outcomes? That's a kind of question that's almost by definition impossible to answer if your approach emphasizes the uniqueness of each individual case and the specifics of history» (Krugman 2010, 5–6).

and irreconcilable methodological poles takes place. The first accuses the second of proposing interesting historical reconstructions that are useless from a policy point of view, while the second accuses the first of proposing models so abstract as to be misleading. The result is that mainstream economics completely ignored spatial economics and economic geography for a long time.

> What you have to understand is that in the late 1980s mainstream economists were almost literally oblivious to the fact that economies aren't dimensionless points in space – and to what the spatial dimension of the economy had to say about the nature of economic forces. (Krugman 2010, 1).

> This neglect is surprising. The facts of economic geography are surely among the most striking features of real-world economies, at least to laymen. For example, one of the most remarkable things about the United States is that in a generally sparsely populated country, much of whose land is fertile, the bulk of the population resides in a few clusters of metropolitan areas; a quarter of the inhabitants are crowded into a not especially inviting section of the East Coast. (Krugman 1991, 483).

New Economic Geography (NEG) aimed to convince mainstream economists to consider space as a decisive dimension of economic analysis. «I have no problem with people investigating local specificity and engaging in discursive persuasion. But the new economic geography was designed to attract the attention of mainstream economists. And mainstream economics decided long ago that devising abstract models is an essential part of being a useful profession» (Krugman 2010, 5).

NEG assumed that spatial distance is always surmountable, but that you have to pay to do so. Selling products in a different place from where they were produced leads to packaging, preserving and transport costs, as well as to documentation and administration fees. These fees are especially high when the buyer has no direct control over the quality and quantity of the product, and the seller does not receive the money immediately. This situation is highly probable when trade occurs between distant places. As a whole, "transport costs" imply that, from a firm's point of view, different locations represent different markets, leading the firm to provide the same goods at different prices. From a consumer's point of view, therefore, buying a product far from the production site would be more expensive. Increasing returns and non-competitive markets give rise to different spatial patterns of agglomeration depending on the results of contrasting forces: concentration due to increasing returns and dispersion due to transport costs.

2.2.2 First Empirical Evidence

It is thus expected that when transport costs are reduced in relation to production costs, a spatial concentration of producers, compared to an existing dispersion of consumers, may occur. We can observe that industrial spatial concentration, for 11 EU Members by sector (17 manufacturing sectors), tended to increase in the 1980s while transport costs certainly decreased thanks to the process of integration. In Fig. 2.1, in fact, the majority of the points are located above the bisector.

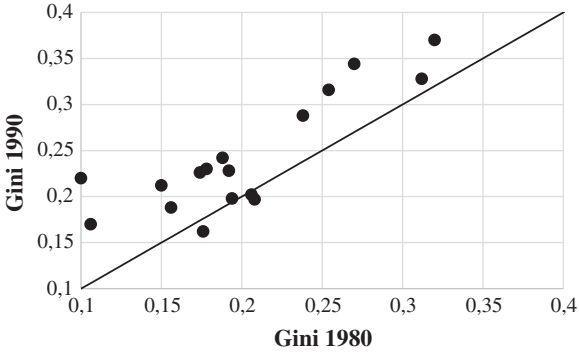

Fig. 2.1 Spatial concentration of 17 manufacturing sectors, Gini index 1990 and 1980, EU-11. *Source* Figure obtained by processing data from Brülhart (1998)

The European integration process started in March 1979 when European Monetary System (EMS) was created to stabilize exchange rates between members of the European Community. At the same time a common currency (not coined), the ECU European Currency Unit, was introduced. This was a basket of currencies that prevented movements above 2.25 % around parity in bilateral exchange rates, by reducing the exchange rate risk, which is at the basis of significant transaction costs. The common market was then enlarged. On January 1981, Greece joined the common market. In January 1986, Spain and Portugal joined (EU-12). In February 1986, the SEA (Single European Act) introduced the first major revision of the Treaty of Rome to harmonize laws and resolve discrepancies, allowing the free movement of goods, labor, services, and capital. In December 1991 the Maastricht Treaty was signed, which had three main objectives: to develop a single market with economic and monetary union through the creation of a single currency by 1999, define and consolidate cooperation in foreign policy and security, find modalities of collaboration between police and the judiciary power.[14] This example, and others related to other countries (Desmet and Fafchamps 2005), could help us define a rule whereby the concentration of productive activities is greater where transport costs are lower.

However, if we compare 11 Southern African with 11 European countries, this rule does not apply. It can be safely assumed that in industrialized countries, such as in Europe, transport costs are significantly lower than in Africa because infrastructures are more developed. We could therefore expect industry in less developed countries, such as in Southern Africa, to be more dispersed than in Europe. However, this is not the case as Fig. 2.2 shows.

[14] In December 1995 the third phase was launched with the Euro definition, which would enter in circulation on January 1, 2002. On January 1997, Austria, Finland and Sweden joined (EU-15). In May 1998, the European Central Bank was established. In March 2002, national currencies were no longer legal tender.

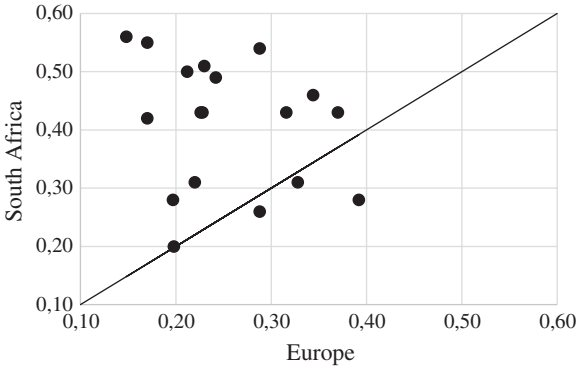

Fig. 2.2 Comparison between Gini indices (Southern Africa and Europe) for territorial concentration of manufacturing industry in the early 1990s. *Source* Figure obtained by processing data from Petersson (2000) and from Brülhart (1998)

The graph compares the Gini indices for the concentration of manufacturing industries[15] and shows that nearly all sectors are more territorially concentrated in Southern Africa than in Europe: 14 points out of 17 representing pairs of Gini values are located above the bisector.

This puzzle may be solved by observing that the number of cities is far lower in Southern Africa than in Europe, as is population density. Since urban areas are also industrial areas, there are very few cities in Africa that show greater industrial concentration than in Europe, where the number of urban areas and industrial centers is higher. This observation shows that many variables must be taken into consideration when analyzing the location of production activities. NEG models, in which history and geography are taken into account in a very limited, stylized way, often neglects to take these variables into account.

Nevertheless, NEG models have something to contribute. While «empirical tests have […] tended to be of an indirect kind» (Martin 1999, 70), NEG models have been confirmed empirically. «These studies may provide some support for the role of increasing returns and externalities in spatial agglomeration» (Ibidem), even if they «neglect […] important forces that also influence the geographical distribution of industry and economic activity (such as the role of local infrastructure, local institutions, state spending and intervention, regulatory arrangements, foreign investment and disinvestment, and global competition)» (Ibidem).

[15] The eleven Southern African countries are: Tanzania, Namibia, Zambia, Malawi, Zimbabwe, Mozambique, Botswana, Lesotho, Mauritius, Swaziland and South-Africa (Petersson 2000). The eleven European are: Belgium, Denmark, France, Germany, Greece, Ireland, Italy, Netherlands, Portugal, Spain and United Kingdom. In this case, the Gini index is based on the Lorenz curve, which plots the proportion of the total manufacturing workers (y axis) that is cumulatively placed in the x % of the regions. The line placed at 45° thus represents perfect equality distribution of workers among regions. The Gini index can then be thought of as the ratio of the area that lies between the line of equality and the Lorenz curve A over the total area under the line of equality (A and B); i.e., $G = A/(A + B)$, and $G = 2A$ being $A + B = 0{,}5$. The Gini index can theoretically range from 0, when all the regions have the same proportion of manufacturing workers, to 1 when all the workers are in only one region.

NEG models prove, in particular, that even if firms and consumers are rational maximizing agents, a Pareto efficient state[16] of distribution of economic activities and, consequently, of income (Ottaviano and Thisse 2002), does not necessarily follow, as would be expected in neoclassical models—at least in the long run. The value of this demonstration cannot be underestimated. It legitimates intentional interventions designed to affect the distribution of income and opportunities among different ways of thinking and ideological positions.

A second contribution of the NEG models concerns the concrete possibility of success of these policies. As we will show, they illustrate an important potential role of local *immobile untapped* resources, coupled with different expectations. This implies that policies are not only justified but should also be considered able to give valuable results at reasonable costs. They can in fact produce remarkable outcomes with a limited effort *affecting expectations* when local immobile resources are present. It remains true, however, that NEG models similarly justify spatially-blind policies, as we saw in the first chapter. These policies assume that, if there are local resources, they will have already been used, or will be used spontaneously. This is why, after having highlighted the contribution NEG models can give to our subject, we are forced to consider other more useful approaches to explain the existence and persistence of local *untapped* resources.

In order to illustrate these issues, and to move on to other approaches we will now examine the simplest NEG set-up.

2.2.3 Basic Model: The Distance and Location Effects

The objectives of NEG's basic analysis can be summarized as follows: (1) to identify the effects of distance between production sites and buyers and examine the consequences of location choices; (2) to identify the forces that lead to agglomeration of firms in certain areas rather than others, as well as the forces that work against this concentration; (3) to identify the factors underlying these forces.

In order to examine the effects of distance between a production site and its markets, let us consider two economies (A and B) that produce two products: one "traditional" x, and one "modern" y.

We will begin by examining a case in which *distance is irrelevant* and NEG models *do not apply*. As we have already seen, the distance between production and markets is not relevant with zero transport costs and perfect competition. In this case, the following assumptions hold.

Both traditional and modern goods are produced with different technologies but with *constant* returns of scale. Simplifying, we may imagine a production function

[16] A Pareto non efficient distribution means that a strategy exist by which it is possible to improve one party's situation without making another party' situation worse. We will examine again this issue later.

with labor as its only input. With only one input, the hypothesis of constant returns of scale implies that the ratio between output and input is constant. In this case, the production functions of traditional (x) and modern (y) goods, with l_x e l_y representing the labor used to produce each good, are as follows:

$$x = \alpha l_x \quad \alpha > 0 \tag{2.1}$$

$$y = \beta l_y \quad \beta > 0 \tag{2.2}$$

Each of the two economies produces each of the two goods and firms make their choices based on a given market price. In this case, production takes place in perfect competition.

The optimal choice for each consumer is based on personal utility.

$$U = U(x, y) = x^s y^{1-s} \quad 0 < s < 1 \tag{2.3}$$

This formula describes the degree of utility associated with each basket of goods x and y consumed. Let us also assume that all consumers are identical and that consumers perceive as identical the units produced by different companies. In this scenario, the quantity of industrial good y produced is simply the sum of the quantities produced by each company, so that, if the total number of companies is N:

$$y = \sum_{i=1}^{N} y_i \tag{2.4}$$

y_i = the quantity produced by the ith company.

The goods produced in economy A can be consumed by economy B, and vice versa, without incurring costs other than production costs (zero transport costs).

The consequence of all this is that if a given quantity of goods is produced by economy A rather than by economy B has no effect on production costs, on the firm's profits, and on sales prices. Economies A and B represent a single market in which the distance between producers and buyers, as well as the location of production companies, are irrelevant. It is as if all companies and consumers were concentrated in a single point.

The analysis conducted by NEG erases this picture.

First eliminated assumption: the hypothesis that goods produced in one economy can be consumed in the same economy or in a different one with the same costs. NEG stresses that goods produced in one place can be consumed in another place only if they are transported and this entails costs, such as packaging, preservation, and transport services (fuel, vehicle amortization, labor costs for transporters, information and contracts, enforcement of contracts). In this view, every area represents, a different market with different sales costs including transport costs. In our two economies model, this implies that for each firm there are two markets: an internal market, where sales prices are the same as production costs (including profit), and an external market, where sales prices are

equal to the sum of production and transport costs. This approach makes it possible to take into account a change in transportation costs over time. Economic historians have always underlined the importance of technology progress in this field. Conservation has improved drastically, vehicles have grown in size allowing for scale economies and a more efficient transfer of goods; communications have improved to an unexpected extent. All these facts have greatly reduced the cost per unit of goods transported.

Second eliminated assumption: the hypothesis that both x and y are produced with constant returns of scale on the basis of production functions (2.1) and (2.2). In NEG models, this assumption is maintained as far as traditional goods are concerned, but it is assumed that the technology used to produce modern goods is:

$$y = \beta l_y - \gamma \quad \gamma > 0 \tag{2.5}$$

According to this hypothesis, the relationship between output and input is:

$$\frac{y}{l_y} = \beta - \frac{\gamma}{l_y} \tag{2.6}$$

Modern production thus has increasing returns of scale. This difference between traditional and modern production functions establishes the simplest way to study improvement in technologies as a change in the sectorial composition of the regional production system. Increasing the weight of the modern sector entails increasing productivity, given the number of production factors employed, by means of an organization that can spread the division of labor and consequently the use of more productive technologies.

Third eliminated assumption: the hypothesis that the location of firms is irrelevant and that consumers perceive goods produced by different companies as identical. NEG analysis assumes that consumers perceive goods produced by different companies as different varieties of modern good y (though the traditional good is still assumed to be homogeneous). It also takes into account the possibility that, if total quantities are equal, consumers prefer to consume goods of different varieties. This hypothesis can be summarized by assuming that:

$$y = \sum_{j=1}^{M} \left(y_j^r \right)^{\frac{1}{r}} \quad 0 < r < 1 \tag{2.7}$$

$M =$ the number of varieties[17];
$y_j =$ the quantity produced by the jth variety

The parameter r measures the intensity of preferences for variety. This intensity would be zero if r were equal to 1 [in which case (2.7) would be the same

[17] With increasing returns of scale, the optimal choice for a company would be specializing in the production of a single variety of manufactured good. The number of varieties of goods produced thus coincides with the number of companies N.

as (2.3)], and infinite if r was equal to 0, these two cases being excluded, while it is assumed that preference for variety would decrease if r increases. Where there is preference for variety, the market for modern good y is segmented into many different markets for each variety. For each of these segments, the producer's market power is limited by the fact that consumers may choose another variety if the one they have previously chosen becomes too expensive. It is assumed, therefore, that each company chooses the unit price of the variety of goods it produces. This hypothesis, along with the previous ones, means that the modern products market is no longer perfectly competitive; it is rather characterized by 'monopolistic competition'. It is possible to demonstrate (Dixit and Stiglitz 1977) that, in this case, the optimal behavior for a company is to fix sale prices by imposing a mark-up on production costs. This assumption on the preference for variety allows demand drive to be introduced into this simple model. The increase of the weight of the modern sector feeds itself because it increases productivity, owing to the hypothesis on the economies of scale, while increasing demand owing to the hypothesis on the preference for the variety.

Fourth eliminated assumption: the hypothesis that both goods are produced using homogeneous labor in both sectors. NEG assumes that workers employed to produce modern goods have different skills compared to those employed for traditional goods and that workers in the modern sector are completely mobile, in the sense that they are perfectly willing to move from one economy to another if they are paid more. Workers in the traditional sector, on the other hand, are assumed to be immobile.[18] It also supposes, for simplicity's sake, that each worker has a given set of skills, belonging therefore either to the modern or to the traditional sector.

There is a fifth assumption to eliminate, that we will examine shortly.

Let us now consider the results of this fourfold elimination of assumptions, which provides the necessary conditions stated by Starret's theorem. That is, to have an equilibrium in the spatial distribution of productive activities with indivisibilities, i.e. imperfect competition in the final market. In this scenario, profit levels in each of the two regional economies A and B depend on the number of firms that have located production there. As a result, a firm that shifts from one location to another modifies the location's profit condition.

This modification takes place with *three* different ways.

First, a new firm's arrival in a location changes the competitive context of the firms working there, which have to face more competition. Greater competition alters the market condition, lowering the price of goods produced and reducing profit levels. This is called "price effect" (*PE*) and tends to make the market *less* profitable for other firms seeking to enter.

Second, if a firm decides to move (for example from region A to region B), there will also be a shift of workers between the two regions with an increase in

[18] The assumption introduces typical features of the production of goods that depends on immobile factors in a simplified context as exemplified by the agricultural production, which uses immobile land as one of its productive factors.

employment and income in region B. Since part of this income is necessarily spent inside that economy, this will increase demand and generate greater profits in B. This phenomenon is called "market effect" (*ME*), and tends to make the market *more* profitable for other firms seeking to enter.

Taking into account these two effects (we will soon see a third effect), the decision of a firm to locate its production in one area rather than another generates an overall effect on profits:

$$\Delta\pi = PE + ME \quad PE < 0 \;\; ME > 0 \tag{2.8}$$

The overall effect $\Delta\pi$ is positive if market effect $ME > 0$ prevails over price effect $PE < 0$ and negative if the opposite occurs. If price effect prevails over market effect, a new entry will discourage other firms to do the same. If, however, market effect prevails over price effect, a new entry will increase the profitability of the area, persuading other firms to make the same move. When either price or market effects prevail, therefore, two different models of development tend to evolve. In the first one ($PE > ME$), the modern sector expands in parallel in both regions. In the second, the modern sector agglomerates in one of the two regions. This agglomeration becomes the "center" where goods are produced for its own market and for the other region, which becomes "peripheral".

A *third effect,* which depends on the elimination of a fifth simplification of the model of perfect competition and space irrelevant, is a useful addition to the *tfp-underlying* mechanisms.

Fifth eliminated assumption. So far it has been assumed that labor is the only input used in production. In order to make the hypothesis more realistic, two inputs should be taken into consideration: labor and goods produced by other firms. As we have seen considering the organizational consequences of indivisibilities, this hypothesis—that there are firms producing phase goods for other firms—follows from the same division of labor. For simplicity's sake, let us assume that goods used as input to produce other goods, and those bought by consumers, coincide. In this case, the demand for goods of each firm would derive in part from consumers, and in part from other firms. Firms are thus mutually connected through input-output links. Consequently, a new entry in an economy generates a third effect since a decrease of sales price (price effect) reduces the expenses of firms that use the goods as input. The effect on production costs caused by the arrival of a new firm in a marketplace is called "cost effect" (*CE*) (Venables 1996).

The overall effect of a new entry, thus, becomes:

$$\Delta\pi = PE + ME + CE \quad PE < 0; \;\; ME > 0; \;\; CE > 0 \tag{2.9}$$

The overall effect $\Delta\pi$ is still unclear. A new entry increases the profitability only if market and cost effects are greater than the price effect.

Note that this result, already complex enough, derives from a model that has been drastically simplified. On the grounds of geography, only two regions are assumed (as we will see, the results thus obtained cannot be applied directly to a case of multiple regions). Moreover, they have no size (they are points in space).

Furthermore, they are structurally homogeneous, except for the proportion of modern activities, which may be different.

2.2.4 Basic Model: Dynamics

A general analysis is complex even though it uses the basic model we have outlined (two punctiform homogeneous economies, two sectors, elementary production functions and preferences). It implies examining the consequences on market, price and cost effects of the whole range of possibilities opened up by the different parameter values. These are: α (productivity of traditional labor), β (productivity of modern labor), s (a parameter that regulates the utility of consumers according to the combination of modern and of traditional goods), γ (a parameter that regulates scale economies in modern sector), r (consumer preference for a variety), as well as other parameters indicating transport costs and the importance of input-output links among firms.

It is therefore preferable to perform a qualitative analysis of some results and a few main trends. The dynamics we examine are not the only economic development paths outlined by NEG; they represent some possible trends of particular interest. It can be shown that: (1) greater preference for variety in modern products tends to reinforce the market effect and cost effect rather than the price effect and tends to *favor* agglomeration; (2) given the total workforce, a higher proportion of modern workers tends to reinforce both the market and cost effect rather than the price effect, and tends to *favor* agglomeration; (3) stronger scale economies reinforce the market effect but weaken the cost effect against the price effect, with nonlinear consequences, *normally in favor* of agglomeration; (4) lower transport costs tend to reinforce both the market and cost effect rather than the price effect and tend to *favor* agglomeration. NEG is thus in a position to explain industrial agglomeration as the result of strong attracting forces (*high preference for variety, greater proportion of workers in modern sectors, scale economies*), and weak resisting forces (*lower transport costs*), both of which are significant in developed countries.

Before considering in more detail the dynamics of possible agglomeration, it may be useful to report some preliminary data confirming this conjecture.

Table 2.5 shows that the Gini index has increased in relation to the concentration of locations in manufacturing industry in Europe at country level. The same is true for unemployment at regional level in the 1980s and in the early 1990s (rows 1 and 2). In the same period, reduction in transport costs was significant, explaining a regular 1 % increase in the international trade share. This occurred in the 1970s, as well as in the 1980s and early 1990s (row 4). On the other hand, reduced tariffs and quotas explain 2 % of international trade increase in the 1970s, 4 % in the 1980s and 0 % in the early 1990s (row 5). The residual (4 % in the 1970s, 9 % in the 1980s and 3 % in the early 1990s) is therefore considerable. It relates to the effects of a country's economic growth, and to the vertical

Table 2.5 Spatial concentration of industry and of unemployment rates in Europe and causes

		1970s–1960s	1980s–1970s	1995–1980s
1	Spatial concentration of manufacturing industry by country (EU-11), Gini indices	(a)	0.156	0.188
2	Regional concentration of unemployment rates (168 European regions) Gini indices	(a)	0.284	0.302
3	International exchange of goods in % of industrial value added	+7	+14	+4
4	As in row 3 dependent only on reduced transport costs	+1	+1	+1
5	As in row 3 dependent on reduced tariffs and quotas	+2	+4	0
6	As in row 3, residual (dependent on growth and the dis-integration of productive processes)	+4	+9	+3

Note (a) Unavailable. *Sources* Table obtained by processing data from Feenstra (1998), Baier and Bergstrand (2001), Brülhart (1998), Eurostat data-base

disintegration of productive processes that could be associated with the increasing proportion of the modern sector and an increasing preference for variety. It is possible to state, as NEG indicated, that in Europe the forces of attraction towards central areas were particularly strong and accompanied by increasingly weak resistance factors.

Let us now complete our analysis on agglomeration dynamics. The link between transport costs and the location of firms is shown in the following figure referring to one region (for example A), assuming that forces of agglomeration prevail, *net of transport costs*.

Let us define: $T =$ transport costs, in a broad sense, as a percentage of the value of traded goods ($0 \leq T \leq 1$); $\psi =$ degree of integration (linked to transport costs in the opposite direction) ($0 \leq \psi \leq 1$; $\psi = 1$ if $T = 0$); $\sigma =$ share of the A region's modern employment ($0 \leq \sigma \leq 1$).

In Fig. 2.3, a point along one of the continuous or dotted bold lines represents a possible equilibrium of a stationary state in which the system can come to a halt. A point along the continuous lines represents a *stable* stationary state, towards which the system tends to move in a disequilibrium situation. A point along the curved dotted line, on the other hand, represents a state of *instable* equilibrium, from which the system tends to move away in case of disequilibrium. Let us start with a situation in which half the modern workers are active in economy A and half in economy B ($\sigma = 0.5$) and transport costs are high (low integration). If integration rises to ψ_1 (transport costs reduce to T_1) the system turns into a state of possible instability. However, a block of firms would need to re-locate in order to create effects of increased profitability sufficient to compensate high transport costs. In fact, at that level (T_1 and ψ_1), re-location would be sustainable only if *all* the firms in one region moved. If integration continues to increase, the dimension

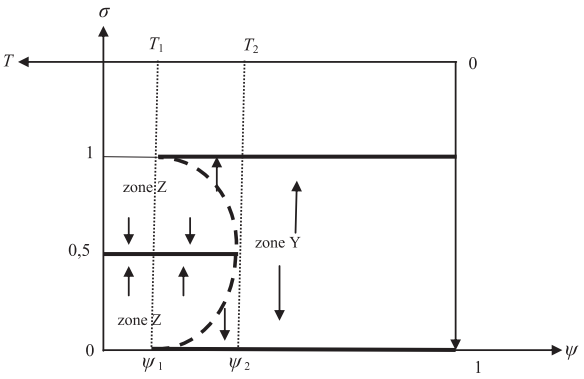

Fig. 2.3 Relation between integration (transport costs) and location, region A

of the necessary block reduces along the dotted line, which separates zone Y from zone Z. At degree of integration ψ_2 and transport costs T_2, only one firm would need to move, and all the others would follow, moving production and modern workers to either region A or B (the top and bottom continuous horizontal lines). This minimal shift is enough to determine an increase in demand and a significant reduction in production costs. If we assume that the probability of movement is inversely proportional to the dimension of a requisite block of firms, concentration will proceed quickly or slowly depending on the integration (and transport cost) level. Moreover, if at the start there are *more* firms in region A than in region B, a reduction in transport costs towards T_2 would cause a gradual, parallel shift of firms towards region A, until region B would become completely emptied. The opposite shift would take place if initially there had been more firms in region B than in region A.

In summary, if transport costs are high, the forces that prevent firms from relocating tend to prevail, and production is distributed over different regions. If transport costs are reduced, the forces that persuade firms to re-locate prevail, and production tends to agglomerate. In the latter case, the fact that production will concentrate in region A or B depends, in the simplified model structure, on one element: the initial distribution of firms. On the other hand, the speed of the agglomeration process will depend on the level of integration (transport costs).

The long lasting agglomeration process of Italian industry after Unification in 1860 is a suggestive example.

The initial concentration process of Italian industry lasted 60 years, from 1861 to 1921 (Fig. 2.4); its slowness can be explained with the slow pace of the increase in rail and motorway national networks. There is, indeed, a close correlation between the share of industrial employment in the Center-North and the number of kilometers of the country's railways and highways (Fig. 2.5).

Given the extent of this 60 year process, of course, a different explanation could be offered. The increase in the share of the North's industrial employment is normally considered the effect of the birth of modern industry in those regions, while in the South the traditional craftsmanship that was especially important in large cities, such as Naples and Palermo, declined. According to this

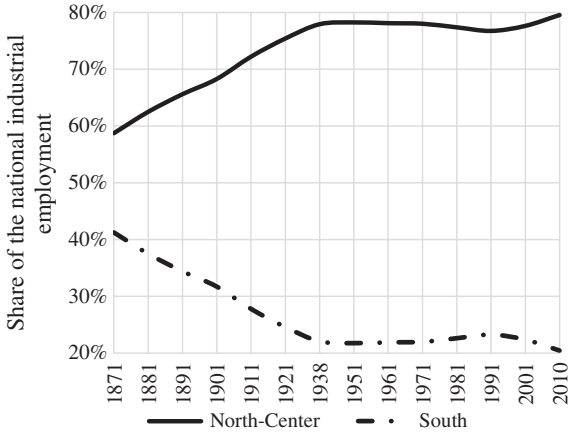

Fig. 2.4 Regional distribution of industrial employment in Italy 1871–2010. *Source* Figure obtained by processing data from: Felice (2009, Table 8, 14) for total workforce as a share of the population 1871–1971; Istat (2012) for the population 1871–1971, for share of workforce in the industrial sector 1871–1971, and for industrial share of employment 1981–2010

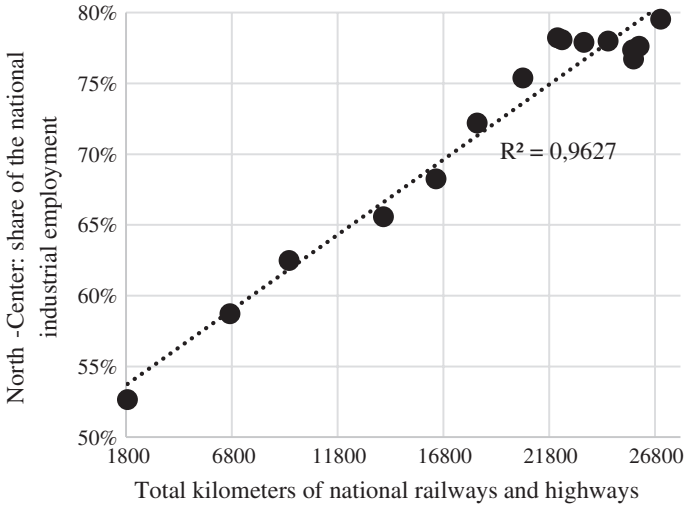

Fig. 2.5 Correlation between industrial employment spatial concentration and railway-highway network. *Source* Figure obtained by processing data from Istat (2012)

interpretation, the transfer of mobile resources (labor and capital) from the South to the North was not significant before the end of World War 1, and infrastructures for transportation grew as an effect (not as a cause) of this uneven development process. Until the eve of World War 1, the development process was uneven, but the growth of the industrial North did not damage the South. It was claimed that no significant transfers of capital and people occurred and the State did not

interfere. Between the two wars a further process of industrial concentration took place, now supported by the State, which favored the North in the distribution of resources to the detriment of the South (Iuzzolino et al. 2011).

Historians and politicians from southern Italy complained at the time about the role of the State, even in the first industrialization stage.

> The Italian unification has been and will be - I have indomitable faith - our moral redemption. But it was, unfortunately, our economic ruin. We were, in 1860, in a flourishing condition for an healthy and profitable economic revival. The unity has condemned us. And as if that were not enough, there is evidence, contrary to the opinion of all, that the Italian Government lavishes its financial benefits in the northern provinces to a greater extent than in the southern. (Fortunato 1899, 65).[19]

Given the lack of data for the period before World War 1 it is impossible to exclude one or the other of these interpretations. In any case, a sixty-year time lapse is so long that circular effects may very well have occurred, implying that the causes became effects and vice versa.

2.2.5 The Bell-Shaped Model

We have seen the implications of the NEG's model dynamics assuming only two regional economies and simple price, market, and cost effects (a *core-periphery* model). «In these core-periphery models, agglomeration of economic activity is generally catastrophic [cumulative causation], complete and permanent. […]. Models with bell-shaped agglomeration patterns overcome the extreme and arguably unrealistic implication of catastrophic, complete, and permanent agglomeration of the core-periphery models. In a nutshell, these models add additional dispersion forces to a core-periphery model that break the dominance of the linkage effects at lower trade costs or higher levels of agglomeration» (Bickenbach and Bode 2013, 126).

Adding agglomeration costs such as, for instance, increasing housing costs (congestion) we easily obtain the *bell shaped* model shown in Fig. 2.6, where (in region A) we have again:

$t =$ time,
$\psi =$ degree of integration (linked to transport costs in the opposite direction),
$\sigma =$ share of the region A modern employment ($0 \leq \sigma \leq 1$).

[19] L'unità d'Italia è stata e sarà—ne ho fede invitta—la nostra redenzione morale. Ma è stata, purtroppo, la nostra rovina economica. Noi eravamo, nel 1860, in floridissime condizioni per un risveglio economico sano e profittevole. L'unità ci ha perduti. E come se questo non bastasse, è provato, contrariamente all'opinione di tutti, che lo Stato italiano profonde i suoi benefici finanziari nelle province settentrionali in misura ben maggiore che nelle meridionali (Fortunato 1899, 65).

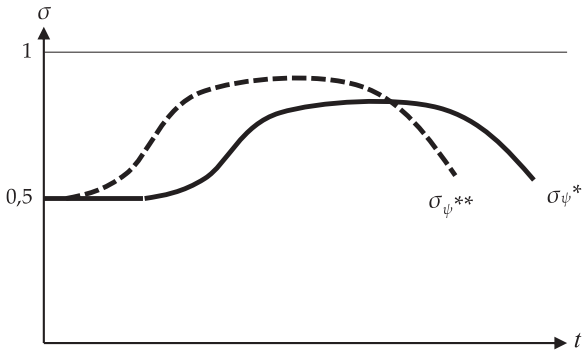

Fig. 2.6 The bell-shaped model

Starting with an equal share of modern workers in regions A and B ($\sigma = 0.5$), the concentration process in A may be of type σ_ψ** with high degree of integration (low transport costs) or of type σ_ψ* with a low degree of integration (higher transport costs). In this model, however, there is no longer a single situation towards which the agglomeration process tends ($\sigma = 1$). The integration pace affects the speed of a process that reaches a maximum concentration level and then enters a new dispersion phase. This phase of dispersion is caused by the congestion that takes place in the area where the concentration of productive activities takes place. This is essentially a new (*fourth*) effect that reduces the profitability of the area in which firms and workers concentrate. The most frequently analyzed factor is the increase in the price of housing, which leads to higher wage demands and therefore the gradual convenience of re-locating production activities to peripheral areas where wages are lower.

An example of the bell-shaped model application refers to German reunification after 1990.

> [NEG] offers a plausible story for why the blooming landscapes in East Germany have not appeared, and may not appear in the near future. At the same time, it offers a plausible story for why the catastrophic scenario of East Germany being depopulated has not, and likely will not, become reality either. In our view, the most plausible NEG view of German integration suggests that Germany may currently be somewhere close to the peak of the bell curve that describes the equilibrium relationship between integration and agglomeration in NEG. (Bickenbach and Bode 2013, 150).

If we take into consideration Fig. 2.7, we will realize that Germany has already gone beyond the peak of the bell curve. In the former East Germany the share of employment in industry and advanced services[20] decreased very soon after reunification and recovery soon followed, supported by the State. When this support ended, the share of employment went down again, reaching its minimum around 2005. In recent years, however, with very little public support, there have been

[20] Industry, not including construction, plus business, finance, insurance, communication and information services.

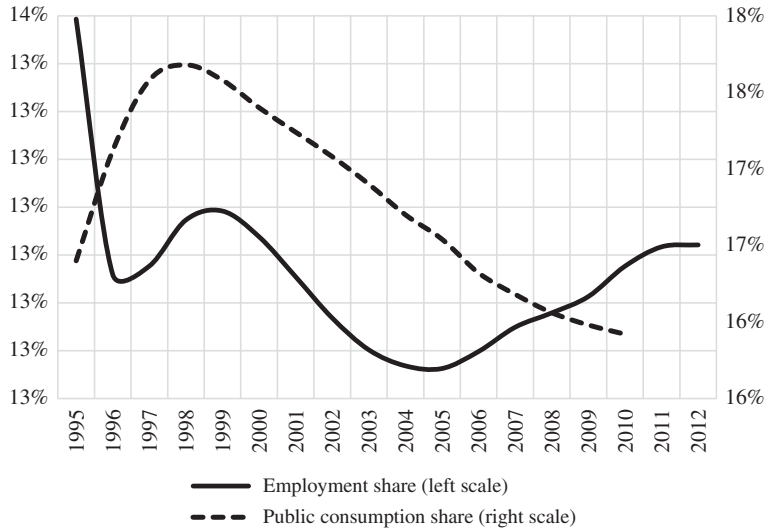

Fig. 2.7 Former DDR Germany: industry and advanced services employment share and public consumption share on the country's total, moving average five-membered. *Source* Figure obtained by processing data from Statistische Ämter des Bundes und der Länder: R1B1. http://www.vgrdl.de/VGRdL/tbls/R0B0.asp?rev=RV2005&tbl=R1B1

significant signs of recovery. As pointed out by Bickenbach and Bode (2013, 150), this may be considered evidence in favor of the bell-shaped model, even though other facts—both political and cultural—have intervened, and the long lasting consequences of the active support to former DDR regions, even when reduced, have left a positive mark.

We will now go on to analyze some framework improvements introduced to overcome the simplistic assumption that only two structurally homogeneous regions, with no dimensions were to be taken into consideration. The structural homogeneity assumption may be eliminated in different ways, but one of the most significant is related to the different endowment of immobile resources, as we will see in the next section. We will then consider some of the consequences of the two-or-more-region assumption. Finally, we will examine, especially in the case of metropolitan regions and cities, the significance of the size of the economies considered.

2.2.6 Immobile Resources

One particularly interesting form of heterogeneity is related to the number of immobile workers, which also represents one share of demand for modern goods. Since the other share of demand is mobile with mobile workers, the fact

that one region has more immobile workers than another means that this region has a greater potential demand for modern goods. In the basic model, immobile workers are employed in the traditional sector. However, the same holds for any other resource that is useful for production and can be considered immobile. For example, if we use a more complex production function that includes skills linked to a territory (such as those resulting from a long history of collective, localized, specific know-how, or existing in local universities or research centers) natural resources (such as climate, landscape or cultural heritage), or socially and institutionally molded organizational frames, these resources work in the same way as for traditional workers. When exploited, they give an income that can be spent locally and sustains the demand for modern goods.

Let us imagine that transport costs are low enough to guarantee agglomeration. Modern firms tend to concentrate in one of two areas, and if the two economies are homogeneous, firms will always locate where modern firms are already settled. But where heterogeneity is related to immobile workers' stock (or immobile resources), the results are quite different. Let us assume that there is a higher number of immobile workers in region B than in region A. The simplest situation is where the initial number of modern firms is only slightly higher in region A, so that the total number of workers, mobile and immobile, is greater in B. In this case, the incentive for a modern firm to re-locate from B to A will be less pressing than the incentive to stay put. Incentive is significant, indeed, for firms in region A to move to region B where there is a greater number of immobile workers. In region B, in fact, both present and potential demands for modern goods are probably higher. We can thus say that agglomeration will normally take place in regions with a higher number of workers (including immobile workers) even if this region initially presented fewer modern firms.

The result would be different if there were a greater difference in the initial number of firms within the two economies. If, for historical reasons, there were far more modern firms operating in region A, it would be possible that the *present* demand for their products could be greater in region A than in region B, even though there were fewer immobile workers in region A. On the other hand, the *potential* demand for modern goods would be greater in region B where most of the immobile workers live. Thus, if the effect of higher *present* demand prevails in determining location, then agglomeration will tend towards region A. If, on the contrary, *potential* demand prevails, then agglomeration will tend towards region B. The result depends both on the conjectures made by each firm and on the behavior of others. If firms were able to coordinate their decisions and come to an agreement on where to locate production, they would clearly decide to concentrate in economy B. If all firms moved there, economy B would effectively become the region with a higher number of workers, given that more traditional workers are available there. Nevertheless, this kind of collaboration is not spontaneously possible and each firm would only decide to locate production in economy B if it thought that most firms in economy A were going to move toward B. The same, however, would be true in relation to the move toward A. Briefly, where there is homogeneous conjecture, firms tend to concentrate either in A or

B and there is equilibrium in their distribution. Where, on the other hand, there is heterogeneous conjecture, firms tend to localize in many different ways and there is no equilibrium in their distribution. Therefore, there is a way to shape expectations intentionally, i.e. increasing the potential demand for modern goods. If we have immobile unemployed or employed resources at low productivity, a deliberate place-based policy may play an incisive role.

2.2.7 More Regions and Convergence Clubs

We can eliminate the two economies hypothesis where firms can locate production, as they do in some NEG models, by considering *more than two* regions. In this case, however, the analysis becomes highly complex. Nevertheless, some of its conclusions are easy to summarize. One of the main conclusions states that, when transport costs are sufficiently low, agglomeration usually occurs in a *subset of regions* rather than in a single region alone.

> [In a multiregional asymmetric model] we find, on the basis of […] extensive simulations […], that […] at a certain level of integration, agglomeration starts, with a number of core regions attracting activity from nearby regions […] until […] industrial activity only takes place in the centrally located core regions. A further falling of trade costs eventually reverses this process, with industrial activity gradually spreading from the core, at first to nearby regions (not to the peripheral ones!) […]. (Bosker et al. 2010, 811).

Let us take the Italian case again, distinguishing North-West, North-East-Center and Southern areas, and considering the share of workforce. See Fig. 2.8.

The two phases, before and after the 1911 break, are clearly different. In 1871 the South had more industry and more workforce than the North-West. In the following decades, industrial concentration should have occurred in Southern regions while it actually took place in the North-West. Either NEG models do not apply to nascent industries, or Giustino Fortunato might have been right to stress the role of central government that supported the North against the South in order to subvert forces that should have favored a spontaneous industrialization in the South.

In 1911 the situation changed (see Fig. 2.9). The share of workforce was the same in the three areas and the industrial concentration process took place in the North-West where the share of industrial employment was, at that point, the highest. In this case, the model's predictions are fulfilled. Moreover, the industry agglomeration process extended also to the North-East-Center, as the more-then-two-regions model predicts. World War II represented a new turning point. The concentration process in the North-West reached its peak and dispersion forces started to work in favor of the North-East-Center area, rather than in favor of the South. Intuitively, by using the bell-shaped model, we may conjecture that this took place because congestion costs in the North-West generated location opportunities in the North-East-Center where a higher share of the workforce was located, while the share of industry was lower in the North-East-Center than in the North-West, but not as low as in the South.

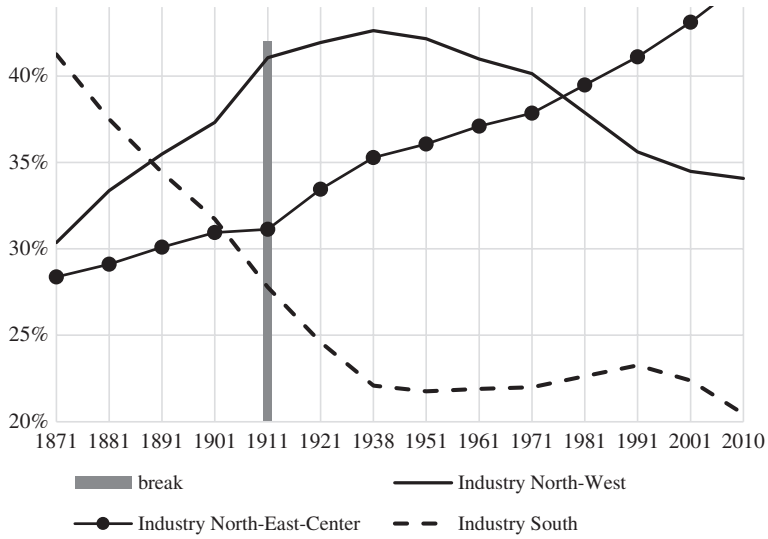

Fig. 2.8 Regional distribution of industrial employment in Italy (1871–2010) in three areas. *Source* Figure obtained by processing data from: Felice (2009, Table 8, 14) for total workforce as a share of the population 1871–1971; Istat (2012) for the population 1871–1971, for share of workforce in the industrial sector 1871–1971, and for industrial share of employment 1981–2010

We can also consider, as another example, the regional scenario of European construction. In recent years, the effects of integration in Europe have been extensively examined. We have already said that research has unequivocally shown convergence among countries and divergence among regions within countries (Geppert and Stephan 2008, 208; Doran and Jordan 2013, 29–30) (Fig. 2.10).

The reason underlying this complex dynamic of growth processes in progressively integrated areas lies in the formation of "convergence clubs". European Nuts 2 regions form six different convergence clubs[21] based on the 1990–2002 data analyzed by Bartkowska and Riedl (2012) by means of the Phillips and Sul's (2007) clustering algorithm. A country effect is only apparent in Switzerland, Austria and Finland: in these countries some regions within the country tend to cluster together. Convergence clubs generally spread among different countries, explaining the overall convergence between countries. Difference between clubs are very high (in club 6, GVA per worker is four times that of club 1). This explains the within-country divergence of regions. As the theory predicts, initial conditions determine the probability that will converge into clubs. Regions with

[21] The GVA per worker in 2002 was: club 1 €65,450; club 2 €48,180; club 3 €39,030; club 4 €31,520; club 5 €25,620; club 6 €15,590 (Bartkowska and Riedl 2012, 24).

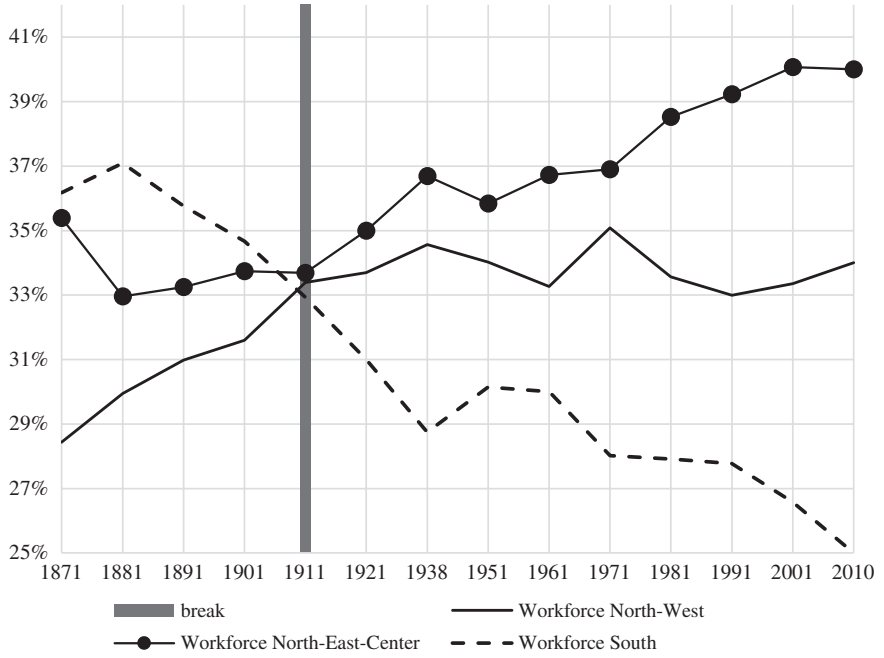

Fig. 2.9 Regional distribution of total workforce in Italy (1871–2010) in three areas. *Source* Figure obtained by processing data from: Felice (2009, Table 8, 14) for total workforce as a share of the population 1871–1971; Istat (2012) for the population 1871–1971, for share of workforce in the industrial sector 1871–1971, and for industrial share of employment 1981–2010

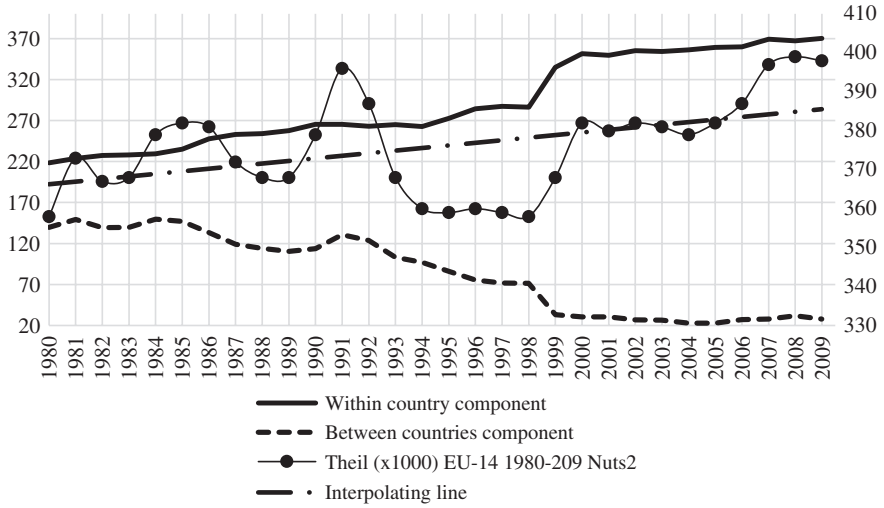

Fig. 2.10 Inequality in GVA per capita constant prices and PPP Nuts 2 European (E-14) regions, components within and between countries 1980–2009. *Source* Figure obtained by processing data from Doran and Jordan (2013, 34)

an initial high endowment of human capital, experience a higher probability of belonging to a high-income club compared to regions with a low initial endowment of human capital.

2.2.8 Size and Density

One remarkable phenomenon is that regions including the country's capital city, appear to belong to a higher club than the neighboring regions. Examples of this are Île de France (including Paris), Inner London, Lisbon, Madrid and Vienna. The special prominence of metropolitan areas in the polarization processes has often been stressed. Geppert and Stephan (2008) showed initial and Markov-chain limiting distributions on the 1980–2000 regional income per capita in EU-15. They classified regional per-capita income (EU = 1) into 8 classes, calculated transition probability matrices and the limiting distribution, distinguishing non metropolitan and metropolitan regions.[22] Non metropolitan regions show a convergence process across Europe. Metropolitan areas are, by contrast, clearly subject to a polarization process. They tend to concentrate (according to the limiting distribution taking 1980, 1990, 2000 data into account) in the highest per capita income category, while in 1980 two poles existed, concerning high and lower income, respectively (Figs. 2.11 and 2.12).

Simple NEG models are unsuited to explain this growing gap between metropolitan areas and other European regions. The high congestion costs in metropolitan areas (high housing costs and consequent high wages and labor costs) should work as a factor of dispersion, reducing their growth rates. If, however, the opposite is taking place, it means that in metropolitan areas there are powerful factors of agglomeration that may overcome congestion costs. Indeed, a burgeoning literature stresses that these factors are linked to a new role of cities as a favorable context for innovation due to knowledge spillovers and other external economies encouraged by dimension and density. Feldman and Audretsch (1999), for example, pointed out that the majority of innovative products were located in cities: innovation is, therefore, an urban activity. More precisely, they showed that the number of innovations was correlated to the dimension of the cities. This is also the result of Duranton's (2006) model built on Romer's (1990a) endogenous growth model, as pointed out by Duranton and Puga (2013, 51). The number of innovations is linked to the research activity favored by a high variety of local products that, in turn, is proportionate to the population. This observation,

[22] «We apply a four-level typology. The top group (type 1) is formed by 'large agglomerations', i.e., regions with an urban core of more than half a million inhabitants (in the year 2000). At the second level (type 2), we have 'urbanised regions' with a population in the core between 300,000 and 500,000. […]. We use the term 'metropolitan regions' to denote large agglomerations (type 1) and urbanized regions (type 2) as a group, and the term 'non-metropolitan regions' to denote intermediate regions (type 3) and rural regions (type 4) as a group» (Geppert and Stephan 2008, 199–200).

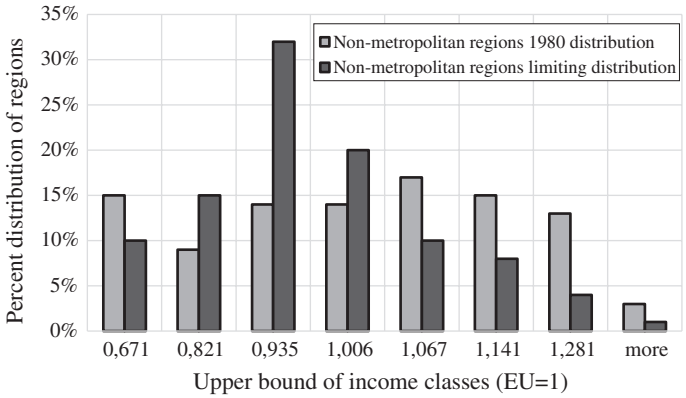

Fig. 2.11 Distributions of non-metropolitan regions EU-15. *Source* Adapted from Geppert and Stephan (2008, 205)

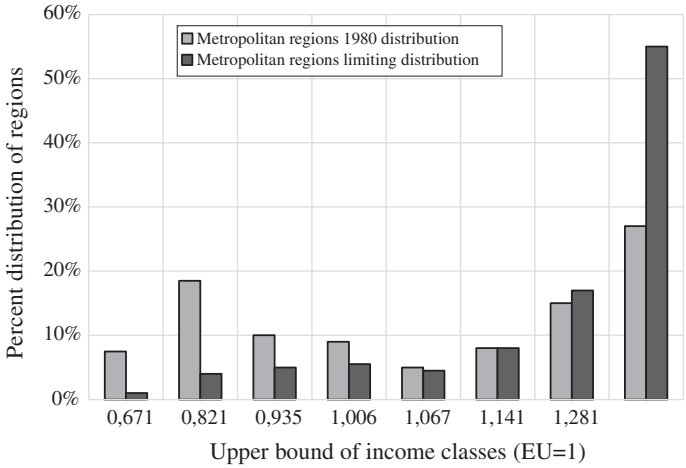

Fig. 2.12 Distributions of metropolitan regions EU-15. *Source* Adapted from Geppert and Stephan (2008, 205)

however, is a first approximation. As the appendix on the relationship between growth and size of cities in Europe highlights, this relationship appears nonlinear and requires a more complex model.

2.3 Summary

NEG's most significant results, shedding light on the forces behind the location of firms, the possible dynamics and the elements that influence firms' choices, suggest that forces fostering agglomeration, and leading to dispersion, work

together. Nevertheless, all other things being equal, it is probable that improvements on infrastructure and transport services (both important for general development) widen the gap between regions, because these improvements support the spatial concentration of modern productive activities by reducing transport costs. On the other hand, concentration in one area rather than another, may entirely depend on the initial spatial distribution of modern firms, thus indicating that local development could indeed be exclusively history-dependent and proceed in a cumulative way. However, this is not the end of the story. A «catastrophic, complete and permanent» agglomeration will probably not take place and we may expect that congestion costs entail strong dispersion forces with more complex results, when considering groups of regions and convergence clubs. The initial distribution of firms is not the only significant factor. The endowment of immobile resources is also relevant. A local economy with few modern activities can attract other modern firms if there are valuable immobile resources. In fact, even if the actual demand for modern goods is scanty, the potential demand is much larger. This suggests that policies may have an important role to play.

In this regard, what has emerged from our analysis may sound puzzling. The bell-shaped model and its applications could deny the importance of public intervention. In backward regions, it seems, you should just sit and wait for the beneficial effects of dispersion due to the cost of congestion in advanced regions to rain down on you. The German and Italian cases would lead us to believe that these effects tend to be significant. Yet, apart from the social costs of this wait—and nobody knows how long for—we have also found completely different results. The processes of agglomeration and dispersion have timing, direction and intensity that may also be attributed to initial movements, given the role of expectations in conditions of unstable equilibria. Current profitability may be in favor of a certain spatial distribution of activities, but potential profitability may be in favor of a different distribution. The possible movements that may arise will depend on the formation of *ex ante* expectations. It is therefore reasonable to think that in situations like this, intentional actions such as place-base policies are justified and may lead to significant effects by supporting the best exploitation of untapped, immobile resources where they exist.

It is therefore necessary to examine whether and how realistic it is to assume that there are untapped immobile resources, taking into account the strong objection that comes from most of the literature on economic growth which assumes full employment. If, they say, resources are available, sooner or later they will be spontaneously exploited in a market capitalism system.

This subject will be discussed in Chap. 3, which starts by considering an interesting alternative to policies supporting the employment of untapped resources. This consists in policies for turning resources which are normally *mobile* into *immobile* ones.

Appendix: Size and Growth of European Cities

Introduction

> The number of cities in a given territory is always in an inverse geometrical progression of their size (for instance, there are about 23,000 urban agglomerations larger than 10,000 inhabitants in the world, 2,000 are larger than 100,000 inhabitants and about 200 above 1 million, after Moriconi-Ebrard 1993). This persistent scaling behaviour has been questioned for more than one century, giving rise to a large variety of interpretations. (Pumain 2004, 1).

The essay by the German physicist, Felix Auerbach (*Das Gesetz der Bevölkerungskonzentration*), published a century ago, is always cited. He observed that the probability of finding a city larger than x was inversely proportional to x. This kind of distribution is found in many natural and social processes, but Auerbach was the first to apply it to the urban concentration of population. The American linguist George Kingsley Zipf, who discovered the same distribution in word frequency, evidenced this: «The first person to my knowledge to note the rectilinear distribution of communities in a country was Felix Auerbach in 1913» (Zipf 1949–2012, 374). The term rectilinear refers to the fact that, taking cities in order of decreasing size, the second city tends to have half of the population compared to the first, the third one-third, the fourth one-fourth and so on. In this way, the logarithms of rank as a function of the logarithms of size, follow a straight line with an angular coefficient equal to minus one.

The studies on this subject have never ceased, and thanks to the wider availability of new statistics, they have become numerous in the late 1990s. There are many tests today that show the applicability of this distribution, or its variants. There are also different interpretative proposals concerning the mechanisms that may lie behind it, as shown in the Berry and Okulicz-Kozaryn (2012) review.

As to Zipf's distribution applicability to different contexts and different samples of cities, a specific problem has always hindered the easiest exercise, which could be the regression of the rank logarithm to the size logarithm, in order to verify whether the estimated coefficient is significantly different from -1. The reason is fairly obvious, underlined a long time ago (Quandt 1964; Rapoport 1978) and mentioned on several occasions (Gabaix and Ioannides 2004; Gan et al. 2006). The variable rank is not the result of independent observations but it is obtained by ordering variable size. It is endogenous. Estimates are therefore biased and inconsistent. This was tested by using Monte Carlo simulations. With generated random numbers and applied econometric rank-size estimates, there are significant results in favor of Zipf-type distribution, while this should not happen for construction (Ganet al. 2006, 259, 262). The problem is serious and the different solutions offered (including the remarkable one Gabaix and Ibragimov (2011) proposed), confirmed Urzua's judgment (2000, p. 260): «strictly speaking, Zipf's law cannot hold except for a certain sample size». Generally, after a great deal of theoretical-methodological and empirical work, a substantial consensus emerges (Malevergne et al. 2009) on expected distributions. For large samples of cities, we can expect

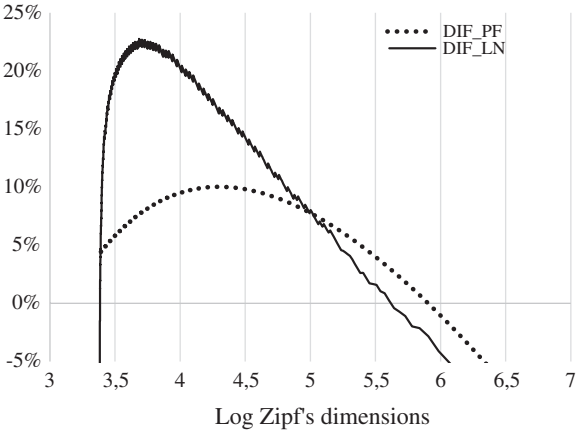

Fig. 2.13 Percentage deviations, respect Zipf's log of cities' size, of that corresponding to lognormal (DIF_LN) and parabolic fractal (DIP_PF) distributions. Artificial simulation 2,000 cases

(even in different contexts like the U.S., Europe, and emerging countries) a lognormal distribution in the range of medium-small cities. A Zipf distribution should prevail among large cities. A parabolic fractal[23] distribution is expected in the middle (see also Giesen and Suedekum 2012; Rybski et al. 2013). To illustrate the distinctive features of these distributions, Figure 2.13 (based on an artificial sample of 2,000 cases) shows the percentage deviations, with respect to the linear Zipf, of the logarithms of the lognormal and parabolic fractal distribution size.

The lognormal distribution presents deviations from Zipf's, which take the shape of a heightened bell displaced to the left, while the deviations of the parabolic fractal are lower.

A second problematic aspect concerns the definition of a city. It seems now undisputed (Rozenfeld et al. 2011; Veneri 2013) that the results of the analysis concerning the shapes of the distributions also depend on the criteria adopted to identify what a city is. It often emerges that the indicated rank-size rule is best applied to urban realities defined by substantive criteria rather than administrative boundaries. It is therefore appropriate to consider temporal data over not too long periods relying on statistical data based on administrative boundaries. In this way, it is at least possible to conjecture a constant error.

[23] This term indicates the discrete probability distribution in which the logarithm of the frequency of a dimension of an entity is a quadratic polynomial of the logarithm of the rank. It is said fractal with reference to the fact that the distribution of "fractal objects" (Benoit Mandelbrot) takes this form. Fractal objects have forms that repeat similar at different scales (self-similarity). Note that the Zipf distribution is also indicated as fractal linear and that the lognormal distribution is approximated by a polynomial of third degree in the logarithms of the size and rank. You could then say that the sequence for the city of decreasing size is of fractal distributions of first then of second then of third degree.

Finally, concerning the mechanisms that can lead to these distributions, Gabaix (1999) and Malevergne et al. (2009) showed that they may be the result of the long term growth rates, independent of size (Gibrat law).

In the following section, we will introduce an exercise on data concerning 352 European cities. We will see that the conjecture concerning distribution forms is verified, indicating that in the past city growth rates were independent of size. We will then see that in recent times the growth rates, by contrast, appear to increase—in a nonlinear manner—in relation to size. This requires a specific interpretation which we will attempt to provide.

Data

The explanations for city growth usually evoke mechanisms that affect productivity (and hence the degree of utilization of resources, in an open economy): economies and diseconomies of scale, human capital, innovation, public goods. It seems therefore appropriate to consider employment, rather than population. Employment size and growth are more immediately linked to productivity and its effects on the use of resources. Eurostat (with additions[24]) provides, for a total of 352 European cities,[25] the average employment levels for the periods 1999–2002, 2003–2006, 2010–2012. The city sample (determined by the availability of data but fairly representative also of medium-small size cities) appears as shown in Table 2.6. From the same source, we have data on area size and population, and we can calculate the population density relative to 2012. Finally, with Google Maps, we have, obtained distances (in minutes of travel by car) between the towns of various countries and their capitals. Size, growth, density, distances are, in fact, considered essential in the recent debate on the analysis of urban area evolution.

[24] Some data not available from Eurostat were obtained from the National Institutes of Statistics as in the case of Bulgaria and Latvia (1999–2002), Spain, Latvia, the United Kingdom (2010–2012). All data concerning the Italian cities are derived from Istat. Those for the 1999–2002 period are taken from the 2001 Census of Population. As to the following periods, they are calculated using 2001 data, rates of change in employment in the local labor systems (SSL), considering cities in the center of SSL with more than 100 thousand inhabitants in 2001, a sample of 74 Italian cities comparable to those of other countries.

[25] The cities in the Urban Audit database are more than 900, but for many the data for this exercise are missing.

Table 2.6 European cities in the sample

Country	Number of cities in the sample	Percentage of employment in the sample on national employment 1999_2002	Percentage of employment in the sample on national employment 2010_2012	Smallest city (thousand employed 2012)	Larges city (thousand employed 2012)
Belgium	7	30.5	34.2	63.4 (Namur)	675.3 (Brussels)
Bulgaria	8	43.0	53.0	14.4 (Vidin)	832.0 (Sofia)
Germany	88	41.0	41.3	30.7 (Weimar)	1,636.1 (Berlin)
Spain	26	29.7	29.0	51.4 (Badajoz)	1,956.2 (Madrid)
France	31	19.6	21.1	28.2 (Creil)	1,797.7 (Paris)
Latvia	2	52.7	52.0	30.9 (Liepaja)	392.9 (Riga)
Italy	74	26.8	27.1	14.0 (Nocera Inf.)	1,196.2 (Roma)
Lithuania	3	31.5	36.7	39.9 (Panevezys)	256.3 (Vilnius)
Hungary	7	34.2	26.0	32.7 (Nyíregyháza)	719.0 (Budapest)
Netherlands	15	29.0	31.7	57.8 (Heerlen)	542.0 (Amsterdam)
Poland	28	39.0	38.0	11.4 (Zory)	820.0 (Warszawa)
Slovenia	2	29.9	32.9	57.5 (Maribor)	204.9 (Ljubljana)
Slovakia	8	35.2	36.0	39.0 (Trencin)	358.1 (Bratislava)
Sweden	9	49.5	52.2	59.8 (Umeå)	912.1 (Stockholm)
United Kingdom	28	25.4	27.6	26.7 (Gravesham)	3,432.1 (London)
Norge	6	33.9	34.1	39.7 (Tromsø)	435.9 (Oslo)
Switzerland	10	28.2	27.2	33.8 (Biel)	359.9 (Zurich)
Totale	352	35.5	36.4	11.4 (Zory)	3,432.1 (London)

Source Table obtained by processing data as indicated in note 50

The Exercise

Let us consider first (Fig. 2.14) the differences between the logarithms of the actual city size and those that would occur applying a Zipf distribution (taking Gabaix-Ibragimov's correction).

As expected, the distribution is lognormal with transition to the parabolic fractal starting at about 100,000 employees, while the tail of large cities drops rapidly to zero indicating that, in this range, size distribution becomes Zipf-type. From 1999–2002 to 2010–2012, the shift of distribution to the right and down is evident. This displacement will be in part a statistical result, owing to the fact that the sample of 352 cities is constant. New cities do not enter in this sample in the period considered, producing an increase in average size. We cannot exclude, however, that this may also depend on a change of the relative weight structure, regardless of this statistic effect. In fact, there is evidence for this when we consider frequency by size groups. The percentage frequency of the cities with less than 40,000 employed people decreases (from 18 to 15 %). However, the percentage frequency of the cities between 40,000 and 250,000 employees does not increase and stays at 69 %, while the share of the largest cities increases from 13 to 16 %. There is confirmation and explanation for this change considering ratios between 2010–2012 and 1999–2002 cumulative employment (Fig. 2.15).

Figure 2.15 shows that cities in the size class 40–250,000 employed (logarithms from 4.6 to 5.4) had the lowest gains comparing the actual data with a linear interpolation. Smaller cities had higher increases and large cities even more so.

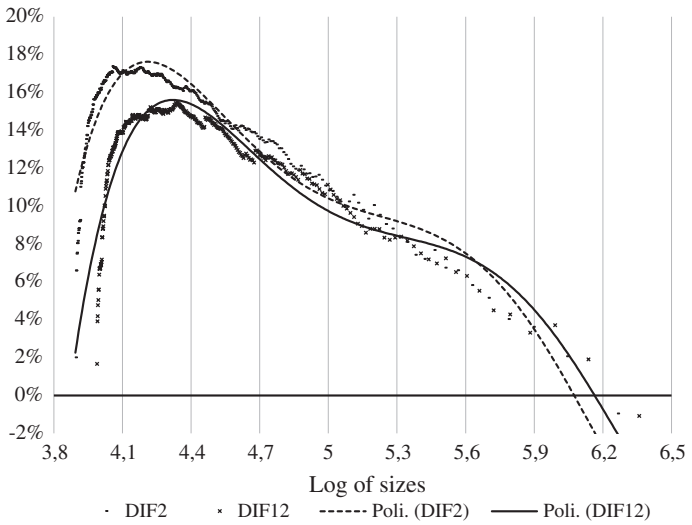

Fig. 2.14 Percentage deviations, respect Zipf's log of cities' size, of actual log sizes: DIF2 = 1999_2002, DIF12 = 2010_2012. *Source* Figure obtained by processing data as indicated in note 50

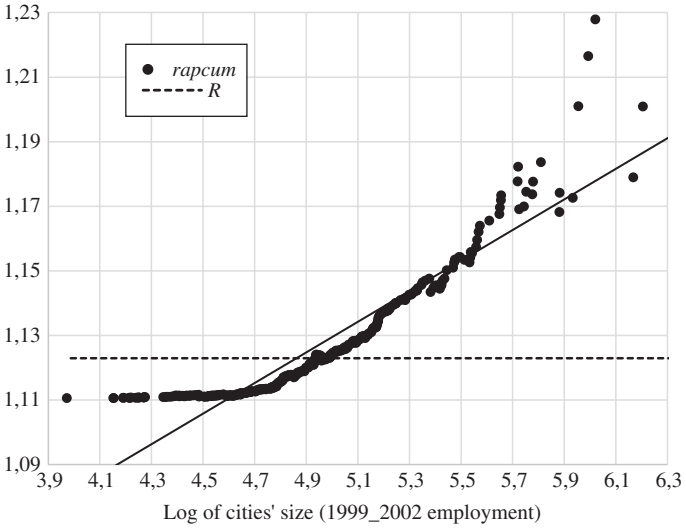

Fig. 2.15 Ratios between cumulative employment 2010_2012 on 1999_2002: *rapcum* actual figures; *R* simulation assuming proportional growth (Gibrat's law). *Source* Figure obtained by processing data as indicated in note 50

The interpolating line indicates employment growth of individual cities regularly increasing with the size-related logarithm. If we make a comparison considering constant growth rates independent of size (R line), however, the transition between the upper and lower growth is around the city size of 100,000 employees.

Summing up: (1) The relationship between growth and size in the ten-year period considered deviates from Gibrat's law, which probably operated in the long run in the past. (2) One part of the cities grows less and one part more than a constant growth rate; the dividing threshold is around the size of 100,000 employed. (3) A recent positive correlation between growth and size is not linear and the cities that are growing relatively less are those between 40 and 250,000 employed.

These results, however, may arise from a spurious correlation between size and growth. Employment could have increased more, independently of city size, in countries where the sample share of small and large cities is greater. While we cannot completely exclude this possible distortion using the available data, we can limit it considering the growth rates of cities net of countries' growth rate and other possible effects. An equation is therefore estimated and the results are shown in Table 2.7.

Some country dummies were significant, indicating city employment growth rates larger than the overall nationwide growth (in Belgium, France and Italy), and smaller instead in Hungary and Spain. Distance from the capital and population density (in logarithms) are significantly negative, while positive distance divided by the maximum distance is not very significant. The negative effect of population density probably depends on congestion costs, intended in the broadest sense, which detract from the benefits of agglomeration. The negative effects of distance from the capital, while positive in terms of relative distance, are more difficult to

Table 2.7 Regression results

Dependent variable: yearly cities' rate of growth of employment 1999_2002 to 2010_2012 net of corresponding national growth			
Independent variables	Estimated coefficient	*t*	Standard error
Constant	3.3	3.9	0.8
30–40 thousand employed	0.7	2.5	0.3
40–250 thousand employed	0.4	1.8	0.2
250–400 thousand employed	0.9	2.8	0.3
More than 400 thousand employed	1.0	2.7	0.3
Belgium	1.2	2.6	0.5
Spain	−1.3	−5.4	0.2
France	0.8	3.5	0.2
Hungary	−3.9	−8.5	0.5
Italy	0.4	2.0	0.2
Log(DIST)	−0.6	−3.8	0.1
Log(DEN)	−0.2	−3.0	0.1
DR	0.6	1.9	0.3
Adj. R2	0.33		
SE regression	1.1		
SD dependent	1.4		

DEN Population density 2012, inhabitants for square Km; *DIST* Distance from the city capital, minutes by car; *DR* DIST divided the maximum of it

interpret. Distance probably captures an adverse effect, related to the physical size of the country, as the cities grow more in small countries. Relative distance, however, captures a positive effect as the net result of conflicting mechanisms, with the prevalence of dispersion over concentration. The non-linear trend of the relative rates of growth of employment in relation to the size of the city seems to be confirmed. The estimated value of dimensional dummy coefficients, in the range of 40–250,000 employed, is the smallest. The coefficient is greater in the range of 30–40,000, and over 250,000. The standard estimate errors, however, are high enough to make these differences not very significant. Nevertheless, the significance of the non-linear trend is clear considering the residuals. We computed, for size ranges, averages of residue growth rates after removing effects of variables not related to the size: country dummies, population density, and distance. We obtained the following residues which measure cities' annual relative growth rates. These residues depend on the size of the cities, on other unknown variables, and on a random component. They are: 1.6 % (30–40,000 employed), 1.5 % (from 40 to 250,000), 2.0 % (from 250 to 400,000), 2.3 % (over 400,000). Finally, we compared actual data and simulated data by means of these residues as ratios of cumulative employment in 2010–2012 and 1999–2002. The non-linearity in the relation between growth and size is now less strong but not canceled. The growth of large cities is also reduced. An increasing relationship between growth and size of cities remains however (Fig. 2.16).

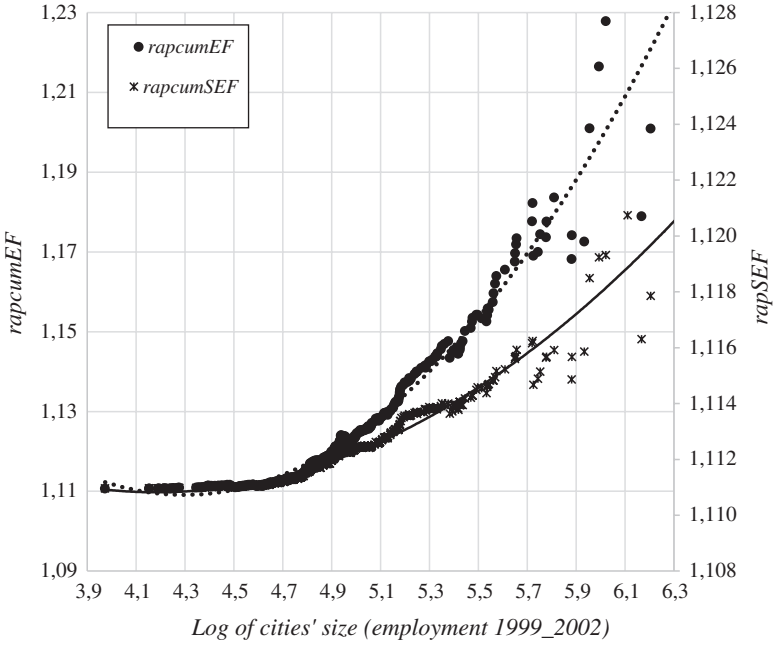

Fig. 2.16 Ratio 2010_2012 to 1999_2002 cumulative employment: *rapcumEF* actual data; *rapcumSEF* simulated data depending on cities' sizes. *Source* Figure obtained by processing data as indicated in note 50

Suggested Interpretation

The exercise shows that, during the last 10 years in Europe, medium-sized cities appear to have grown less than in the past, while larger and, to a lesser extent, smaller cities have grown relatively more. It is not easy to give an interpretation for this intervened non-linear relation between size and growth.

The Acemoglu and Zilibotti's growth model (1997) suggests considering it a possible result of an increase in uncertainty, which in fact appears to have taken place, fueled by intensified international competition. In Fig. 2.17, we represent unemployment rates as moving averages of three four-month terms from 1970 to 2013. Since the beginning of the 1990s unemployment has not only remained high (having progressively increased since the 1970s), but it has also become more unstable.

The Acemoglu and Zilibotti model seems suitable to explain how this increased instability and uncertainty might have penalized growth in medium-sized cities. The microfounded model contains several assumptions, the most important of which are the following three: (1) Savings are used by agents to make investments, which are classified into two types: risky investments with greater expected earnings, and safe investments with lower returns. (2) Different projects madepossible by risky investments are imperfectly correlated so that agents have the possibility of reducing the

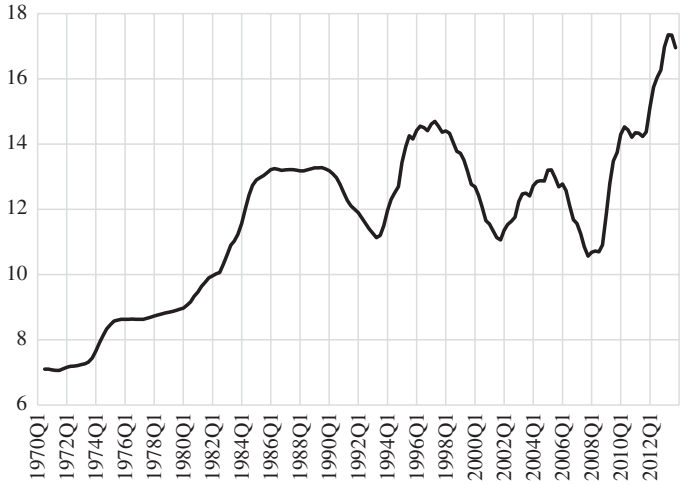

Fig. 2.17 Moving three terms averages of unemployment percentages on work force (Europe 12). *Source* Figure obtained by processing data from Drèze e Bean (1990) and from Eurostat data base

risk through portfolio diversification. (3) The allocation problem is not trivial (it would be so if all agents could invest in all projects by diversifying most of the risks) as there is a minimum investment threshold for each project which gives rise to a trade-off between expected returns and risk insurance.

The authors suggest applying the model to national economies. The reason is that the considered economic system must have boundaries. However, the model can also be applied to a city if it is admitted that the city constitutes a system with limits. This does not exclude the city having large external relations. It implies that the *considered* possibilities for agents to act for potential projects are internal. An external wider system of relations may exist, but we assume that the system is constant while internal activities change.

Figure 2.18 shows the dynamics of accumulation of productive capital in the city under uncertainty conditions (standardized variables).

G(Kt + 1) and B(K + 1) indicate the stock of capital at time t + 1 in the case of "good news" and "bad news", respectively. At initial accumulation level (small town) the ease of finding small-scale, not too risky projects allows growth in every case, with both good and bad luck. The two curves are both, in fact, to the left of the bisector. However, as the process goes on, in the case of bad news, growth stops (in the figure to the level Kt = Kt + 1 = 0.11). It remains positive in the case of good news. Therefore, the system may remain, for the initial phase of its growth at least, subject to a condition oscillating between stop and go. Such a condition would be overcome and growth could restart without interruption over a certain threshold (in the figure above Kt = Kt +1 = 0.23), when the curve indicates that the effect of bad luck goes to zero and when the G curve is always to the left of the bisector.

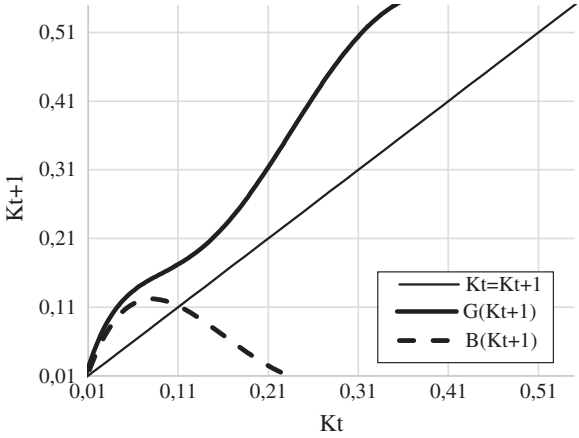

Fig. 2.18 Economic growth under condition of uncertainty

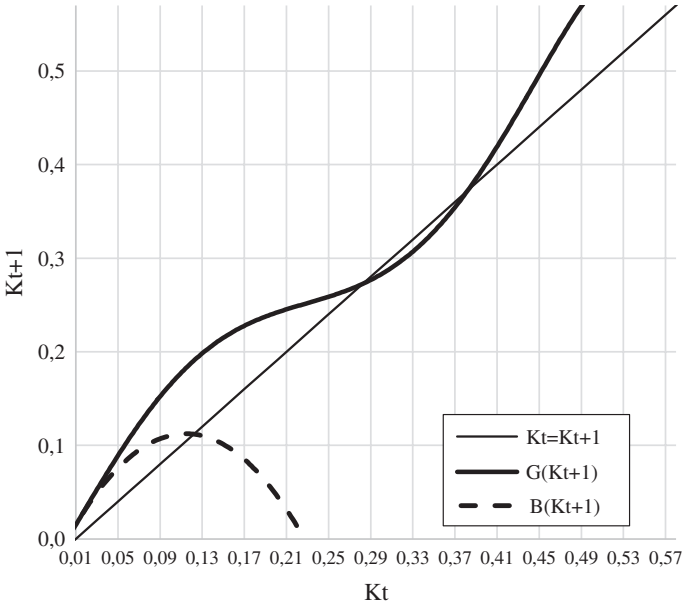

Fig. 2.19 Economic growth with uncertainty and reduced difference between risky and safe projects' returns

This result, for a given risk aversion [which determines the saddle shape of the curve G(Kt +1)] depends on the *difference* between the returns on risky projects and safe projects. Reducing this parameter by half, we obtain Fig. 2.19, where circumstances are very different.

Now a condition exists (Kt between 0.29 and 0.37) in which there is no growth, as the curve G(Kt + 1) is not on the left of the bisector. Here the city is fairly big and

take-off difficulties have already been surmounted. These difficulties of medium-size cities are born because of a low yield spread between safe and risky assets owing to an increase of all risks resulting from the increased instability and uncertainty. In a medium-size city, this lower return differential does not find a balance in risk distribution, while in larger cities it is guaranteed by a broad diversification of assets. In a medium-size city, furthermore, lower return differential is not offset by the lower cost of the projects as in the case of small cities.

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Chapter 3
Institutions, Agency and Path Dependency

Abstract Taking cues from the most recent debate in the field of economic geography, we will see in this chapter that local resources can remain untapped because of the consolidation of routines and narratives that are against change even when it improves everyone's situation. We will also see that changing narratives and changing private actors' routines in order to use local untapped resources is possible if identified obstacles—mainly the lack of mutual experience between actors of innovation—are overcome. The experience of change, which would support both a change of routines and a change of narratives, is apparently possible only as a result of previous experience. This is a trap. The chapter starts, however, by discussing an apparently powerful way of avoiding any trap: if mobile resources tend to abandon lagging regions, building industrial districts and/or cluster could be as making immobile local resources that are normally mobile.

3.1 Industrial Districts and Clusters

If mobile resources tend to abandon lagging regions, by widening the gap with more developed regions, the engine of growth must lie in development strategies that start a process of productive employment *rooted* in the local context. At first sight, it would seem that the Italian experience of industrial districts, on which there is a vast literature reconstructing their history and dynamics, might serve as a guide to build these strategies to make mobile resources immobile. Industrial districts, characterized by a coherent whole of local labor and capital, turn these mobile resources into immobile resources because of their coherence and complementarity. And they have experienced notable success.

3.1.1 Building Industrial Districts?

After years of research which started in the 1970s, Becattini (1978, 1979) defined industrial districts as three level-systems: «the productive apparatus in the

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strictest sense; the institutions linking the productive apparatus […] to the district's community; the formation and transmission of values that are at the foundation of district-type behavior» (Maccabelli and Sforzi 1997, 259–262). Each of these three levels (interacting with one another), are characterized by specific elements. These are the distinctive resources used effectively only in that district, and the fact that they are immobile and defend the industrial district from agglomeration processes that may be taking place in other areas. These resources include teams of firms that maintain links among districts and with external demand, local organizations. These represent interest groups that mediate between social consensus and the competitiveness of the district, contributing to a price system regulated between a minimum and a maximum, to guarantee both the social reproducibility of the district, and its external competitiveness. Other resources include tacit or contextual knowledge of a productive or professional nature, and the capacity to renew it constantly through interaction with codified knowledge. Finally, a set of basic or elementary institutions, such as family, parish, infant schools, is required, as well as a political and cultural context that can transmit values such as entrepreneurial spirit, a healthy desire to make money, an aptitude for competition but also for cooperation, and a keen appreciation of technical and professional improvement.

The literature on the different definitions of industrial districts has sometimes stressed the centrality of one or another of these resources. The *Handbook of Industrial Districts* outlined one definition (Becattini et al. 2009, xvii and xviii). In this definition, the main features of an industrial district, is an «interpenetration of a community of people and a production apparatus» able to produce for «markets progressively and largely external to the locality of industry, based on the systematic and professional activity of competent producers». A district also implies an accomplished organization for the most efficient use of local resources. In other words, we can conceive the industrial district as a localized, social and economic machine, complete with all its elements and rooted in a specific place. Consequently, you might think that the best place-based policy would be to *create* industrial districts. Is this possible?

The question needs to be divided into three parts. First, are industrial districts replicable as such? Second, have deliberate policies effectively supported the growth of historical districts? Third, could/should those possible policies be implemented today? From the literature on industrial districts some points emerge: (1) It is very unrealistic to think that districts can be created intentionally; (2) the majority of the literature has not researched policies, stating that they had no effect without a solid empirical basis; (3) national and local policies have played a crucial role in the development of historical industrial districts in Italy; (4) it could be argued that while you cannot *create* districts without very particular historical conditions, policies in the past had probably intentionally and effectively supported them; (5) past policies are impractical today.

Experts have always been skeptical about the replicability of districts (Brusco 1989). This skepticism clearly emerges because the cultural and social identity of districts is the result of a long history and tradition. During an interview in 1997, however, Giacomo Becattini claimed that the debate over whether industrial

districts could come about even today was still open, and listed what, in his opinion, would make it possible. Becattini claimed that incomes would continue to grow with globalization, creating a greater and more differentiated global demand for personal and domestic durables, as well as the technologies to produce them. He also claimed that social integration would become a more important issue, maybe as a reaction to a growing perception of fear and insecurity, and that this increased integration would enhance the value of the industrial district method of producing and living, coupling competition and cooperation. In the interview Becattini said that the proliferation of industrial districts in the post-war period in Italy and elsewhere was a first wave, and that a second wave, stimulated by a global «demand for industrial districts», was underway. This kind of optimism is troublesome, even taking into account that the end of 1990s, when the author made his predictions, is a long time ago. The global crisis had not struck and was not anticipated. The real collapse of employment in small firms in Italy was perhaps impossible to predict.[1]

The problem is that Becattini's approach excludes a priori the meaningful influence of intentional policies, both national and local, on the origin and growth of districts. Therefore, we can observe two positions in most of the literature on Italian industrial districts. One supports the replicability of districts and the other does not. Both provide a negative answer to the second question concerning the capability of intentional policies[2] to create districts. However, most of the literature on industrial districts has reported little or no research on national or local policies supporting districts. There are objective difficulties in terms of analysis and measurement, but this does not justify an a priori judgment, nor the idea that policy counted only inasmuch as it created a «favourable climate» (Signorini 2000). It is true that, during recent years, several essays on industrial districts, mentioning intentional public actions, have been published. It is, nevertheless, legitimate to have a strong suspicion that the correction is belated and insufficient and only took place when the omission was recognized as being an evident

[1] In Italy, small firms with fewer than 50 employees in the manufacturing sector have lost 748 thousand jobs from 2001 to 2011, on a total reduction of one million employed. Between 1971 and 2001 small firms increased employment by 760 thousand offsetting much of the loss of 960 thousand in firms with more than 50 employees. The increase in the weight of small firms' employment (in Italy from 42 % in 1971 to 59 % in 2001) was a general process that occurred in many countries during those three decades; but in Italy—the only case in industrialized countries—a growth in the absolute values of the small firms' employment took place as well.

[2] Schmitz and Musyck (1994) observed that industrial districts were not an Italian peculiarity. «In the 1970s and 1980s, industrial districts in Europe achieved international competitiveness and attained high employment standards, even though they were based on local small and medium-sized firms and concentrated on traditional sectors» (Schmitz and Musyck 1994, 889). After a reflection on what policy lessons can be drawn from this experience, they concluded expressing their doubts about the *intentional* reproducibility of districts, because few studies were available on the role of policies, their origin, and first period of life.

oversight.[3] We could also think that recent papers were published as a result of the crisis of the districts and the need to justify some form of help, or simply to apportion blame as, for example, in Parrillia (2009) and Ramazzotti (2010). These essays, moreover, focus on industrial policies targeted at district maintenance, even in cases where the declared intentions are more ambitious and would like to include directions for policies aimed at a rebirth or transplant of districts. Solinas (2009) in the introduction to the brief chapter of the cited Handbook devoted to policies, recognized this, while referring to the only contribution in the whole book on policies aimed at creating and supporting districts (Unido experience[4]).

In fact, national and local policies had a great influence on the history of Italian districts, as emerges in the few studies that took them into consideration.[5] It is also true that these policies, albeit important, supported the emergence and development of industrial districts when they were coupled with favorable and particular historical conditions. In other words, it is not true that districts are born without political support, but it is equally untrue that these policies alone were sufficient. At least until the 1980s favorable national policies were implemented, especially a mild regime of taxes and administrative requirements for small firms. Locally, several policies (coming from diverse institutions) provided local welfare and services that supported the labor supply (especially feminine), services for technical and vocational training, financial services to small businesses, and very few restrictions in the use of land near or within urban areas.

Limited restrictions on the use of land proved to be very important. Together with a flexible fiscal regime, the favorable conditions granted to small businesses in building houses and sheds constituted a significant transfer of district building costs to the community and other sectors of the economy and society. It was assumed that the environment and an effective government of the territory could be easily sacrificed in the name of industrial growth. The consequent capitulation of local governments, their failure to reform themselves (Calafati 2014) and territorial anarchy are among the causes of the decline of today's national economy,[6] although industrial districts are certainly not the only ones responsible. One could assert that Italian industrial districts were successful because they used up not only the resources available at the time but also future resources, which we must pay

[3] The cited *Handbook* on the industrial districts has 900 pages, of which only 66 are dedicated to "Public policies and industrial development strategies".

[4] This Handbook's paper with the title "The industrial district model in the development strategy of international organizations: The example of UNIDO" was later published in the official Unido Technical Paper Series as: "Cluster development for pro-poor growth—the UNIDO approach". The latter title better matches the content in which districts are mentioned just to assert that the related experience is better referable to clusters!

[5] Brusco and Righi (1985), Trigilia (1986, 1991), Arrighetti and Seravalli (1997), Bagnasco (1997), Seravalli (1999).

[6] «In Italy there is an urban issue that should be addressed urgently, as it is one of the main reasons for the economic decline of the country» (Calafati 2009, 1).

now. This consideration suggests great caution while describing the experience of Italian districts as a good strategy for the development of lagging areas.

In conclusion, industrial districts could be a model for a productive system that organizes and valorizes local resources by making them immobile. The idea that industrial districts came about and grew without any support from policy makers must be dismissed. It does not follow, however, that the policies that encouraged the development of Italian industrial districts in the past are now recommended at national and local level. Previous policies in fact sacrificed fairness in the tax system and compromised the environment with serious consequences for today's territorial anarchy and weak public administration. Moreover, these policies were successful when coupled with local, specific historical conditions which cannot be intentionally reproduced.

3.1.2 Clusters

Porter's (1998) clusters configure a more tractable model for making mobile resources immobile. Instead of «a localized industry embedded in a community of people […] [with] an economic and social identity shaped by […] a set of shared cognitive, moral and behavioral attitudes drawing on locally-dense cultural interactions», that are peculiar of the industrial districts, clusters are seen as «geographic concentrations of interconnected companies, specialized suppliers, service providers, and associated institutions in a particular field that are present in a nation or region».[7] Districts and clusters share the principle that the division of labor is best organized through a formula of both collaboration and competition, between market and hierarchy. This hybrid formula avoids the defects of incomplete markets, hierarchy rigidity, and high monitoring costs.

Clusters have something more and something less than districts. They express more explicitly the essential and continuous cooperation among firms and institutions, and with public service providers located all along the value chain. They have less connection with the «local dense cultural interactions» in order to have «shared cognitive, moral and behavioral attitudes». Cohesion is provided by purposely organized structures. Consequently, clusters could be considered organizations that can be created just because they have some additional, intentionally provided elements, and less historical and place-rooted factors compared to districts. The UNIDO initiative quoted by Solinas, for example, attempted to create clusters even in the poorest regions, driven by the empirical evidence that showed the economic and social success of clusters in the United States of America (Delgado et al. 2012, 4 and 32).

However, research on the specific issue of the new construction of clusters is poor, and leaves little room for enthusiasm. Little is known about the extent to

[7] Official definition offered by the Institute for Strategy and Competitiveness at Harvard Business School.

which intentional policies counted. «We plan to investigate the specific role of regional cluster policies in shaping the impact of clusters on economic performance in future work. […]. More research is needed to assess the role of specific state and Federal-level policies in catalyzing cluster growth» (Delgado et al. 2012, 6 and 33). On the other hand, what we know is not encouraging and looks the same as the case of industrial districts: «If cluster policy is understood as a tool to artificially change the nature of economic geography, there are many conceptual and practical arguments against its use. If, however, cluster policy is seen as a way to leverage existing agglomerations as platforms for collaboration to enhance cluster dynamics and as more effective channels to deliver economic policies, it has much potential» (Ketels 2013, 266).

In conclusion, the creation of industrial districts or cluster catalyzing does not seem to be a viable answer for place-based interventions in lagging regions. They could have been a very effective solution because the coherent set of resources related to a site, operating by means of cooperation and competition, would have solved both the problem of best availability and that of the exploitation of immobile resources at the same time. Unfortunately, it does not seem possible (or useful) to propose policies for creating districts or clusters. The remaining solution is, therefore, to focus on less powerful policies, targeted at less sensational outcomes. The availability of immobile resources must be assessed case by case. We must also determine whether optimal exploitation should be considered spontaneous or not. This will be the topic of the following sections of this chapter.

3.2 Evolutionary Economic Geography

3.2.1 Geography's Contention

We have already considered geographers' criticism of New Economic Geography, which have not left Paul Krugman indifferent.

> Many economic geographers proper were furious at the rise of the new geographical economics. […]. Actually, the reaction was even worse than I expected. […] there was a widespread rejection not just of the assumptions of rational behavior and equilibrium, but of the whole notion of mathematical modeling and even the use of quantitative methods. (Krugman 2010, 4).

Several years of fierce opposition, or rather of reciprocal disregarding,[8] are now leaving their place to more constructive efforts. Some geographers explicitly call

[8] «Far from portraying the economic geographer as the amateurish trainer who valiantly, but foolishly, tries in vain to tame a pride of wild lions only to end up devoured by the beasts, our own experience suggested a very different picture: that of two disciplines ignoring each other. […]. Whereas the economists/lions were busy steadily improving and expanding their tricks, geographers had become butter-flies, freely flying the fields of knowledge with the aim of tasting the best from every flower they visit» (Duranton and Rodriguez-Pose 2005, 1695).

for dialogue and even a compromise on both parts (Buckley and Buckley 2009, 2814) since for both geographers and economists the central issue is the same, namely «how to explain the riddle of uneven spatial development» (Garretsen and Martin 2010, 127).[9] The debate, however, might provide a useful springboard for our analysis.

Just as NEG provided some useful elements to justify place-based policies, the opposite approach (mainly Evolutionary Economic Geography—EEG) allows us to reflect on the features of place-based policies. Indeed EEG provides valuable suggestions, as we will see, for clarifying the reasons why local immobile resources often remain untapped, and why the hypothesis of their spontaneous exploitation is poorly founded. EEG also identifies obstacles to be overcome by policies in order to use untapped resources efficiently.

3.2.2 First Clues

Let us start with facts, and examine a significant example of how local, poorly-employed immobile resources takes shape. One of the most blatant cases concerns the Italians' inability to enhance their artistic and cultural heritage, which is one of the largest in the world (PricewaterhouseCoopers 2009). It appears, in fact, that in Italy there are 43 UNESCO sites (40 in Spain, 37 in China, 33 in France, 27 in England, 20 in the U.S.), 5,500 museums and archaeological sites (8,100 in the U.S., 3,000 in England, 2,300 in Spain, 1,200 in France), 3,274 historic gardens (1,650 in France, 90 in Spain). Despite this host of immobile resources, and despite Italy's talent in preserving and restoring recognized by the PricewaterhouseCoopers and others, Italy's economic return places it among the lowest countries. The return of cultural assets in France and United Kingdom is 4–7 times higher than Italy's. The tourist economy and the cultural and creative industries in Italy account for only 13 % of GDP, far from the 21 % of the best performer, Spain.

It is commonly believed that this significant, well-known, and persistent waste of opportunity[10] depends on scarce public spending. Another study (The European House-Ambrosetti 2010) indicates that in Italy this spending in percentage of GDP is lower than in Denmark, Sweden, Austria, France and, to a lesser extent, United Kingdom. However, it seems that this is not the only explanation for the wasted opportunity. In Italy, public spending in this sector is higher than in Germany and in Spain, where as we have seen, cultural heritage is nevertheless much better valorized. A valuable indication concerning the causes of Italy's poor valorization capacity emerges in a

[9] Others, eventually, believe that it will be impossible for a common ground to emerge, which the two disciplines can interact on (Sheppard 2001).

[10] Between 1964 and 1967 a Parliamentary Commission of Inquiry operated (appointed by Law 310, April 26, 1964 upon Ministry of Education's proposal), and published its results in three volumes (Commissione Parlamentare 1967). The most important conclusion was a firm and clear compliant about the lack of valorization of the Italian cultural heritage.

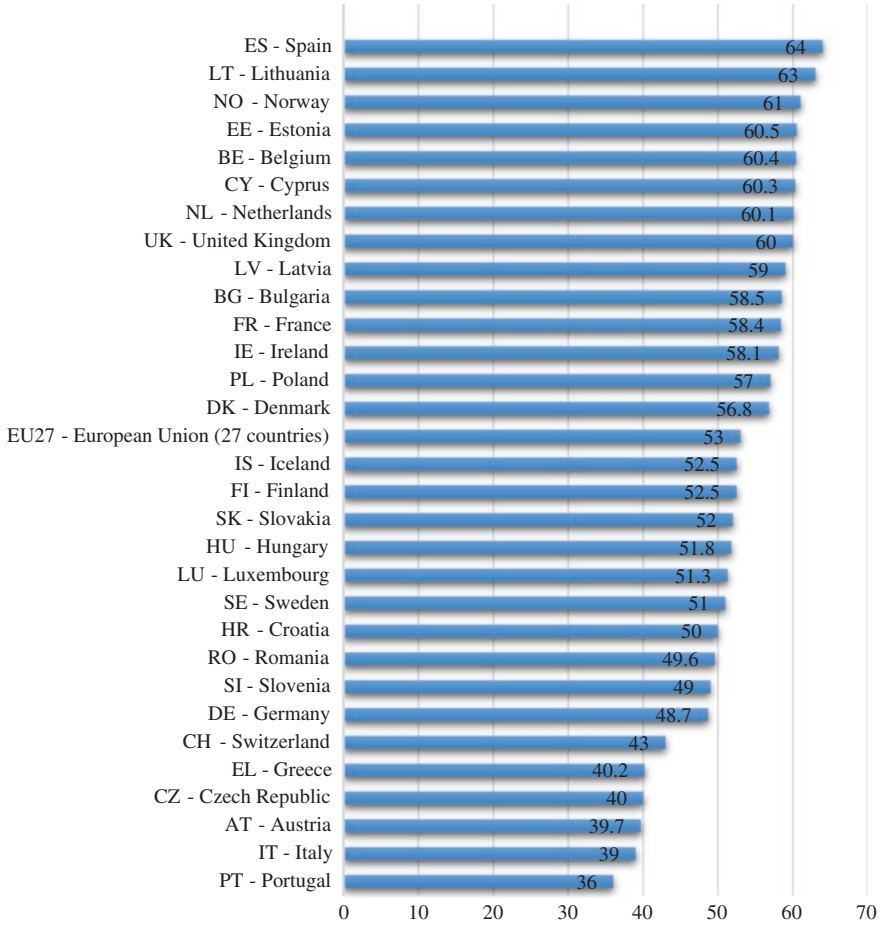

Fig. 3.1 Percentage of employed with tertiary education in the cultural sector, 2009. *Source* Adapted from Eurostat (2011, 71). Cultural sector comprises NACE Rev.2 codes: 58, 59, 60, 90, 91

Eurostat (2011) report. The percentage of people with tertiary education among all those employed in the cultural sector is very low in Italy, as shown in Fig. 3.1.

The low level of education among employees certainly implies a marked lack of professionalism and skills that are probably responsible for poor performances in valorizing artistic and cultural heritage. However, as already pointed out, the same report reveals that in Italy there is no shortage of skills and capacities for the preservation and restoration of artistic and cultural heritage. Indeed, they are often highly qualified. The problem lies in the low level of education and skills of the majority of the staff who manage the fruition of these assets. Why are these complementary skills missing? Answering this question is not an easy task. It is not normal, in fact, for resources of this amplitude, which are potentially able to significantly contribute to the GDP, to be exploited so little.

The first thing to observe is that tourism offers a "product" which actually consists of a whole series of diversified products (Van den Berg et al. 1995), depending on the combination of three elements (Russo and Van der Borg 2002, 633, 637). These are (1) the merit of a specific locality, which is the main reason for visiting it; (2) the quality of the whole complex of facilities and services (transport, hospitality, guidance, and assistance); (3) the quality of accessibility from abroad and to various points of interest within that locality. Given a widespread high level in the merit of specific localities owing to the valuable Italian cultural heritage and natural surroundings, we can imagine, for simplicity's sake, four diversified products. Two are related to cultural tourism (high and low level), mainly depending on good or bad public sector skills in providing services for the fruition of cultural assets, complementary to good preservation skills. Two are related to generic tourism (high and low level), mainly depending on good or bad private sector skills in providing tourist services as a whole.

We could imagine that, when the private sector (or public sector) is oriented towards low quality production with low-skilled jobs, this will affect the public sector (or private sector). This layout assumes that there is a link between the level of skills in the private sector and in public services providing cultural heritage fruition, which would explain a low quality in public services with low quality in private services. In fact, we can observe a significant correlation between the share of employees with tertiary education in the cultural sector and in the tourist sector, coupled by a weaker but existent correlation with the cultural sector's share of employment of total national employment (Fig. 3.2).

On the other hand, a relatively low proportion of graduates characterizes the entire Italian work force,[11] which also affects both tourist and cultural sectors. This proportionality can also be seen in other European countries where tertiary education shares in the cultural heritage, tourism, and general economic fields are all correlated. However, among European countries, the link between the share of workers with tertiary education in the tourist sector and the in the cultural sector is not completely explained by the same share in the economy overall.[12] This aspect emerges in Fig. 3.3.

[11] The Governor of the Bank of Italy (Visco 2014, 6–7) recently stated that the low percentage of graduates in Italian firms depends on the poor return of the investment in human capital, which has abridged the supply of labor of graduate workers. In turn, such poor return depends on the lack of firms' innovation capacity related to lack of appropriate skills and of graduates among employees, which makes a circular causation.

[12] In Italy, the percentage of persons with tertiary educational attainment among all employed was 18 % in 2009, when the percentage in the cultural sector was 39 %, a figure that ranked Italy second lowest in Europe. Many other European countries had tertiary education shares in total employment close to the Italian 18 %. They had, nevertheless, a significantly higher percentage of tertiary education in the cultural sector. These countries are Czech Republic with a share of 40 % in the cultural sector, Turkey (48 %), Romania (49.6 %), Slovakia (52 %). On the other hand, among the 13 countries with high tertiary education in the cultural sector (between 64 and 57 %), 3 had a relatively low level of tertiary education in total employment: Bulgaria (28.5 %), Poland (27.7 %), Latvia (31.4 %).

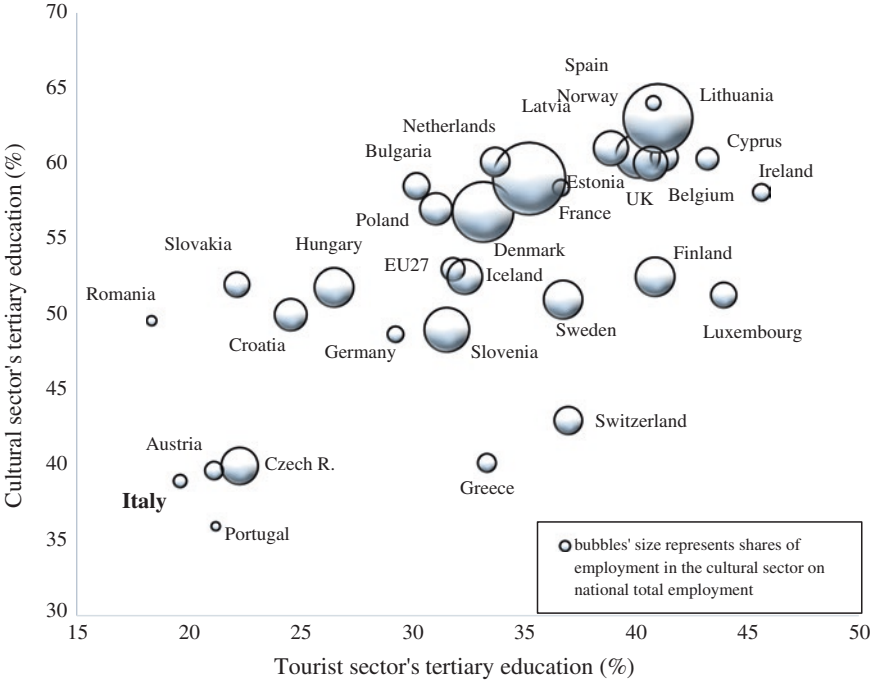

Fig. 3.2 Shares of tertiary education employment in tourist and cultural sectors, 2009. *Source* Figure obtained by processing data from Eurostat (2011)

This empirical relationship between human capital in the cultural sector and in the tourist sector most likely confirms a *functional complementarity* (McKercher and du Cros 2002; McKercher et al. 2005).

In summary, the causes of the macroscopic Italian case of poor immobile resource enhancement in its artistic and cultural heritage appear to be found in the lack of skills required to achieve a higher quality in fruition services. And this lack of skills appears to be linked, probably through circular causation, to the low ability to offer a high-quality tourist product in the private sector.

At this point a key issue emerges. Why, and according to which *identifiable mechanisms*, are these complementary skills not acquired over time? We might think that a case such as the under-valorization of the cultural heritage in Italy is a rare and exceptional event, a result of very specific Italian contingencies with unique mechanisms. There appears to be no other explanation, considering that these complementary skills would be invaluable for achieving higher returns from existing resources. After all, Hirschman's (1958) concept of backwards and forwards linkages may be considered from a *positive* point of view as well as a *normative* point of view. If we consider, for simplicity's sake, only backwards linkages, we may indeed expect that, in general, whatever a firm needs it will find, as other firms or agents are driven to answer a paying demand.

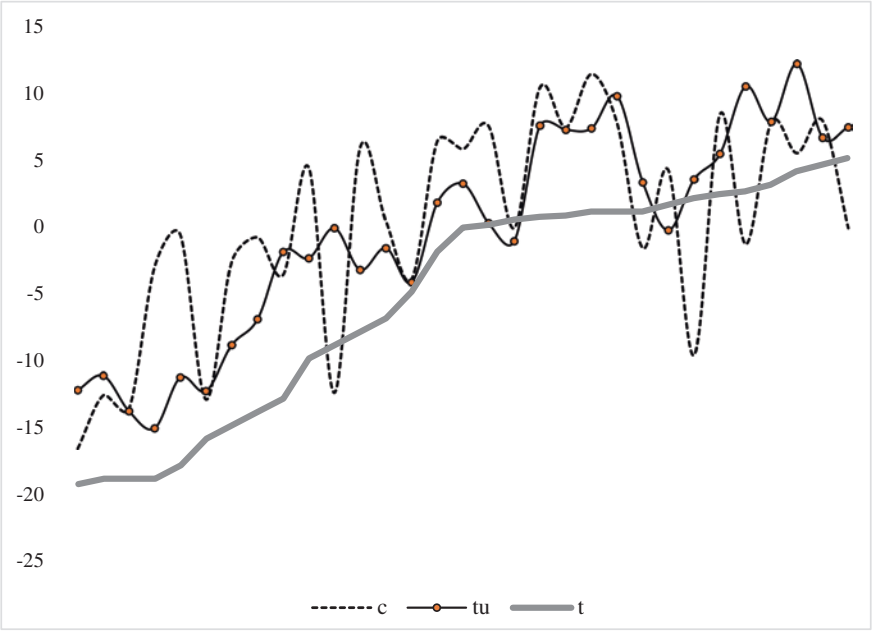

Fig. 3.3 Deviations from the medians. Percentage of workers with tertiary education in the cultural sector (*c*), in the tourist sector (*tu*), and in the total economy (*t*)—2009, 30 European countries, and the EU27 in ascending order of *t*. *Source* Figure obtained by processing data from Eurostat (2011)

In the cultural heritage example, one might expect a similar mechanism. The private sector in Italy must have realized that other countries have achieved significant results in the cultural and tourism field over the years. It should have been able, then, to exert the necessary pressure on the public sphere to obtain higher education levels and professionalism of the civil servants involved in the cultural heritage. It might even have offered to help pay for increased costs of public service fruition, as is often the case with various forms of public-private partnerships. This improvement of education levels in the public sector would consequently induce the private sector to improve the professionalism of its own employees. One would think this argument is convincing. If nothing of this kind has happened, the temptation to say that Italy is a unique case that is hard to explain is quite strong.

However, there is another possibility. In the EEG approach, there are elements and suggestions that may be useful in constructing a convincing way to explain why the mechanism is more general. The analytical path will not be short, but in a nutshell we will see how important resources can remain untapped because the behavior of actors is non-maximizing and path-dependent, and interacts with institutions that go on to create narratives that are collectively important and therefore difficult to change.

3.2.3 Non-maximizing Behavior

If actors were *effective* maximizing agents there would be no immobile resources left permanently untapped. However, an approach that uses the actual maximization (of utility and profit) hypothesis implies that all agents possess in all circumstances (of place and time) all the information concerning resources and constraints which could affect the results of their actions. Note that this problem goes well beyond the issue of cost of information collection and elaboration. Information actually costs. Nevertheless, cost would not be a radical difficulty since, in view of the possible significant results it might produce, agents would be willing to pay whatever it takes to gather and process necessary information.

The obstacle is more serious because, as we shall see in Chap. 5, this type of information is not like other goods. You cannot always buy the information you need, however much you are willing to pay. We may recognize that agents would, in principle, behave optimally according to their values and beliefs, with some or a lot of them wanting to maximize their individual gains. However, we must also recognize that they cannot always do it because they lack all the information they need for this purpose.

Several ways have been proposed to respond to the difficult question which concerns the mechanisms that determine behavior under conditions of a radical lack of information. According to Ron Boschma and Koen Frenken, there are currently two most frequent responses among those who pay particular attention to the spatial dimension. These two responses are institutionalist and evolutionary: «while institutional scholars tend to relate behavior of agents to macro-institutions of territories, evolutionary scholars put primacy on micro-routines of organizations» (Boschma and Frenken 2006, 278). There is no unanimous agreement on this bipartition. MacKinnon et al. (2009), for instance, have argued that it is an «artificial distinction» and have proposed an approach combining institutionalism and evolutionism.[13] This has the aim of analyzing «the development of adaptation strategies at different spatial scales […] assessed in the context of the social relations between different social actors and groups, raising normative and political questions» (MacKinnon et al. 2009, 145).

A goal of the same kind is proposed for EEG by Martin and Sunley (2014), taking cues from the evolution of evolutionary theory today, that witnesses a shift towards overcoming the modern neo-Darwinian synthesis to reconcile variation-selection-retention and development. In the pages that follow, this framework will be illustrated in a simplified manner by examining the three ingredients that this literature refers to, namely the properly evolutionist component, the institutional component, and the interaction between different processes and actors in a development perspective. This will shed light on the conditions that can be considered at the basis of a permanent state of untapped local immobile resources.

[13] «We favor the use of evolutionary and institutional concepts within a geographical political economy approach, rather than the construction of some kind of theoretically separate EEG—evolution in economic geography, not an evolutionary economic geography» (MacKinnon et al. (2009, 145).

3.2.4 Evolutionary Tools

A first useful consideration may be that, from the outset, scholars who proposed EEG declared explicitly that they drew inspiration from evolutionism, applying the ideas of *variation*, *selection,* and *retention* to social dynamics. They drew especially from Nelson and Winter's evolutionary economics (Steiner and Belschan 1991, 483; Boschma and Lambooy 1999, 413). Martin and Sunley stated: «[…] most of the foundational contributions to EEG have drawn upon Nelson and Winter's argument that in the economic sphere it is business routines that demonstrate the key neo-Darwinian process of variation, selection and replication or retention» (Martin and Sunley 2014, 4). Therefore, it is justified to take the concepts that can be applied here directly from Nelson and Winter's book.

Routines are a central tool. They are «what is regular and predictable about business behavior […and] relatively constant dispositions and strategic heuristics» (Nelson and Winter 1982, 15). Routines «imply that it is quite inappropriate to conceive of firm behavior in terms of deliberate choice from a broad menu of alternatives that some external observer considers to be "available" opportunities for the organization. The menu is not broad, but narrow and idiosyncratic; it is built into the firm's routines, and most of the "choosing" is also accomplished automatically by those routines» (*Ivi*, 134). Firms' economic success perpetuates their routines and disappointing results weaken them. «Profitable firms will grow and unprofitable ones will contract, and the operating characteristics of the more profitable firms therefore will account for a growing share of the industry's activity» (*Ivi*, 5). Routines also spread through industry by imitation. «Imitation, though costly and imperfect in the individual instance, is a powerful mechanism by which new routines come to organize a larger fraction of the total activity of the system» (*Ivi*, 135). Routines are formed and changed depending on «factors that hold behavior to the channels of routine […and] may be expected to [… be] the path of least resistance» (*Ivi*, 134).

Both these concepts and mechanisms, generally conceived, appear to be directly applicable to our examples of cultural heritage exploitation. Following the path of least resistance, it is plausible to imagine that tourist firms in Italy have adopted a strategic practice, a routine, of low quality tourist services because tourists come to such famous places anyway. Firms made money despite their low-quality product, and this perpetuated the practice.[14] It is also plausible to imagine,

[14] One expert wrote «The problem is that tourism in Italy has enjoyed for a long time in positions of income really outstanding that have fueled a very superficial approach to the sector: made it, it was cheap, why spend?» (Renato Adreoletti 17 marzo 2014, http://www.hoteldomani.it/il-turismo-internazionale-in-italia-nel-2013). Another, in the Italian Encyclopedia: «Italy was the first tourist country in the world, was, and partly still is, a natural destination. […]. And the first response [of underinvestment] must therefore be sought in the weight of the advantageous position: the Italian entrepreneurs are actually sluggish because they rely more on rent factors than to those of enterprise's diligence» (Giuseppe Chicchi, http://www.treccani.it/enciclopedia/la-politica-del-turismo_(XXI_Secolo)).

therefore, that this routine could change by providing a more qualified service, and by employing more qualified personnel, if economic results deteriorate to a sufficient extent. This deterioration has started to take place in the last few years, but it has not yet led to change. There is something more to deal with. Indeed we must establish what the relationship might be on the institutional side.

3.2.5 Institutions: Definition

Institutions are often defined in the narrowest sense as rules, norms, and conventions, as proposed by Douglass North[15] who considered institutions «the rules of the game» (North 1990, 3). Hodgson (2006, 18) defines them as «systems of established and embedded social rules that structure social interactions […]. In short, institutions are *social rule-systems*, not simply rules» (*Ivi*, 2 and 13). This definition entails that «actor and institutional structure, although distinct, are […] connected in a circle of mutual interaction and interdependence» (*Ivi*, 8). Accepting this definition, the issue that emerges is worthy of consideration. That is, how actors and institutional structures *relate* when they interact.

3.2.6 Institutions and Actors

The various economic geographies all argue that dynamic interaction processes among individual actions, natural and social environment, and institutions, must be placed in the foreground. They differ, however, in many respects, including one relevant feature regarding the greater or lesser *relative prioritization* assigned to the individual or to institutions. As we have seen, Ron Boschma and Koen Frenken consider that Institutional Economic Geography (IEG) may be placed in the field in which institutions are prioritized against individuals. This position finds its origins in Veblen's teaching. Thorstein Veblen (1857 Cato, Wisconsin—1929 Menlo Park, California) had and still has notable influence on the way of thinking of the economy as an "institutional construction". He was the founding father of institutional economics.[16] He

[15] Actually, the widespread interpretation that according to North organizations are not part of institutions is not correct, even if it is justified by North's lack of clarity on this point. This is evidenced by the exchange of letters between Douglass North and Geoffrey Hodgson, because of which Hodgson stated: «In saying that "organizations are players" North is making an abstraction rather than defining organizations in this way» (Hodgson 2006, 10).

[16] «The conventional view is that the "founders" of institutionalism were Thorstein Veblen, Wesley Mitchell, and John R. Commons. It might be more exact to say that Thorstein Veblen provided much of the intellectual inspiration for institutionalism, although other influences were also important. Wesley Mitchell was deeply involved in the early development of institutionalism as a definite movement, along with Walton Hamilton, Walter Stewart, and John M. Clark. John R. Commons came into the institutionalist picture a little later, after 1924» (Rutherford 2001, 174).

observed that individual actors have generative but also destructive potential,[17] and are governed by institutions that emerge for this purpose although they have their own dynamics and internal logic as well.[18] Therefore, they are not always functional to the common good. Bad institutions will not spontaneously disappear, nor will good institutions spontaneously take their place.[19] Being long lasting, institutions affect, for better or for worse, individual current actions (Veblen 1898, 386–387). This does not imply, however, «a methodological collectivism where individual behavior is entirely explained by the institutional or cultural environment. Complete explanations of parts in terms of wholes are beset with problems of equivalent stature to those of the inverse procedure. Just as structures cannot be adequately explained in terms of individuals, individuals cannot adequately be explained in terms of structures» (Hodgson 1998, 172). You could say that, considering the importance attributed to the persistence of habits that draw strength from institutions, Veblen and the original institutional economics, while refusing a one-pole position, sustain a position closer to the pole opposite to individualism.

However, this position leaves room for different degrees of influence of institutions on individuals. An upper limit EEG probably did not reach is that of the institutionalism inspired by John Rogers Commons (Hollansburg, Ohio 1862—Fort Lauderdale, Florida 1945).

> If we endeavor to find a universal circumstance, common to all behavior known as institutional, we may define an institution as collective action in control, liberation, and expansion of individual action. Collective action ranges all the way from unorganized custom to the many organized going concerns, such as the family, the corporation, the trade association, the trade union, the reserve system, the state. The principle common to all of them is greater or less control, liberation, and expansion of individual action by collective action (Commons 1931, 648).

The concept appearing in this definition that characterizes Common's view is "collective action", which exists *aborigine*, as well as individual will and action. In

[17] «Veblen saw a type of dialectical linkage between the positive and negative instincts, in which they influence and conflict with each other, providing Veblen with an important source of human action, change and motion. [But] as he said, "the evolution of economic life in the industrially more mature communities has now begun to take such a turn that the interest of the community no longer coincides with the emulative interests of the individual" (Veblen 1899, p. 153)» (O'Hara 2002, 81–82).

[18] «Institutions are not only themselves the result of a selective and adaptive process which shapes the prevailing or dominant types of spiritual attitude and aptitudes; they are at the same time special methods of life and of human relations, and are therefore in their turn efficient factors of selection» (Veblen 1899, 188). «Veblen did not maintain that the mere appearance of some new technology would directly bring about the new institutions that would allow for the full effect of technological progress. He recognized an institutional stubbornness, making economic growth a strained and often broken process» (Ford 2011, 8).

[19] «Veblen's theory of cultural evolution can be described as one of institutional drift, while Hayek's theory as one of efficient selection of institutions. In the Veblenian theory, new institutions cannot be predicted to be any more efficient than those displaced» (Wood and Woods 1991, 71).

Commons, the collective action takes on a teleological nature[20]; collective action and institutions are an original element, aroused by the primitive and ever-present need to manage conflict.[21] Veblen, on the contrary, believes that development did not have a predetermined direction. It seems he was «the first thinker to introduce to social sciences the idea of human history as an evolving process of change with neither predetermined end, nor a specific pattern of development» (Liagouras 2009, 4). It is true, however, that both these perspectives agree that institutions *are not* "unintended consequences" of interaction among individual that may give rise to a "spontaneous order". Normally institutions depend on other institutions, and this is the proof that «concepts of self-organization or spontaneous order are insufficient for an understanding of all institutions» (Hodgson 2006, 13). On this point, EEG distanced itself from David Hume's teaching, which was followed especially by the Austrian School of Carl Menger (Nowy Sącz 1840—Vienna 1921) and—later—by Frederick August Von Hayek (Vienna 1899—Freiburg 1992). David Hume (Edinburg 1711—Edinburg 1776) argued that institutions are not the result of a design, but of an evolutionary mechanism able to stand alone and work with no higher ordering principle, based on the infinite interactions among individuals who are interested in personal gain but appreciate, and therefore reproduce, those rules that are useful to all (mutually beneficial).[22]

3.2.7 Institutions' Functioning

While it is now clear what EEG does not agree upon, we have not yet defined what its claims are, regarding the strength of institutions' influence on individual actors and how these affect institutions. Clarifying the functioning of institutions

[20] «Institutional economics openly avows scarcity […] and gives to collective action its proper place of deciding conflicts and maintaining order in a world of scarcity, private property, and the resulting conflicts. I make conflict of interests predominant in transactions. But I conclude that this cannot be allowed to be the only principle, because there are also mutual dependence and the maintenance of order by collective action […]. Harmony is not presupposition of economics—it is a consequence of collective action designed to maintain rules that shall govern the conflicts» (Commons 1934, 6).

[21] «There is a profound discrepancy [towards Veblen] in the work of Commons, mainly deriving from the eternal and self-correcting character of collective human will. Collective human will exists per se constituting a trend of humanity; thus it is infused to human beings from their very birth […]. It is the expanding nature that makes it independent of individual action; but individual action depends on the collective one» (Papageorgiou et al. 2013, 1238).

[22] «[A] major argument of Hume is that social institutions are largely unplanned, they are products of social evolution. […]. In the phrase of Adam Ferguson […], writing a quarter-century after Hume, many of our institutions are "the result of human action, but not the execution of any design". In the twentieth-century, the strongest advocate of the thesis implicit in this phrase is F. A. Hayek […]. When Hume generalizes […] he can say individuals would tend to approve general laws and institutions that would be in the interest of everyone. That is to say, his public vision is of the mutual advantage of all» (Hardin 2008, 4–5).

is the best way forward. As part of an evolutionary approach, Geoffrey Hodgson proposes a concept of institutions that sees them as related to *habits*. «A habit is a disposition to engage in previously adopted or acquired behavior or thoughts, triggered by an appropriate stimulus or context. […]. Habits are the constitutive material of institutions, providing them with enhanced durability, power, and normative authority. In turn, by reproducing shared *habits of thought*, institutions create strong mechanisms of conformism and normative agreement. […]. [The] interplay of behavior, habit, *emotion, and rationalization* helps to explain the normative power of *custom* in human society» (Hodgson 2006, 6 and 7; italics added). It seems appropriate to interpret this framework as an idea of institutions that conceives ways of thinking that are habit-consolidated to the extent that they are constructs with emotions and rationality. This could be the definition of "*narratives with a sense*".

This particular reading of the Hodgson's lesson seems even more relevant considering the expression «reconstitutive downward causation» Hodgson used in the same essay, and his recent fine-tuning of this expression. He conceives the functioning of institutions as «involve[ing] reconstitutive downward causation, acting to some degree upon individual habits of thought and action. The existence of reconstitutive downward causation does not mean that institutions directly, entirely, or uniformly determine individual aspirations, merely that there can be significant downward effects» (*Ivi*, 7). If institutions affect but do not determine individuals' behavior, it is more expressive to think that they do it through *narratives*. Narratives are not rules in a strict sense. Notwithstanding, they are highly effective in shaping behavior through persuasion. By proposing narratives, institutions acquire greater persuasive capabilities because they can affect the very reality individuals perceive. «"Reality" [is …] a product of disciplined imagination, shaped and guided by conventions for selecting, organizing, and testing experience against agreed-upon criteria» (Bruner 2005, 56).

On the other hand, Martin and Sunley (2014) (but also Weber 2011) call for the use of concepts and mechanisms inspired by the *dynamics of complex adaptive systems* in order to give more space to the efforts already made in this direction by EEG (Storper 1997). Some relevant applications to humans of complex adaptive system dynamics have placed narratives in a central position. Lane and Maxfield (1995), for example, after presenting a case study on «what happened when ROLM, a small California computer company, decided to enter the PBX[23] market in 1973», concluded: «To succeed, even survive, in the face of rapid structural change, it is essential to make sense out of what is happening and to act on the basis of that understanding. […]. Hence our conclusion [is] that the first and most important strategic requirement […] is the institution of interpretative practices […] wherever there are agents that initiate and carry out interactions with other

[23] «A PBX is a private telecommunication system that manages an organization's incoming, outgoing and interoffice telephone calls. It connects outside lines that are provided by the local telephone company» (Lane and Maxfield 1995, 9).

agents» (Lane and Maxfield 1995, 36). In general, «since the global level of all complex adaptive systems contextually constrains the behavior of the components that make it up, I postulate that behavior […] as characterized by consciousness and meaning, originate, regulate, and constrain processes such that the resulting behavior satisfies the meaningful content embodied in the complex dynamics from which it issued. […]. By showing the dynamics of complex adaptive systems, hermeneutical narratives are uniquely suited as the logic of explanation of these strange-loop phenomena» (Juarrero 2000, 27 and 48).[24]

The same literature notes that narrative function of institutions is linked to the emergence of *social identity*. «Far from representing messy, noisy complications that can be safely ignored, time and context are as central to the identity and behavior of these dynamic processes as they are to human beings. […]. […] the increased probability that a real system will occupy a particular state can be represented as wells […] that embody attractor states and behaviors that system is more likely to occupy. […]. Once organized, a system's attractor serve as its formal and final cause, both preserving its identity and drawing behavior into its overall organization» (Juarrero 2000, 27, 41, 46). Note the important link this sentence establishes between identity, attractor state, and final cause. It means that the final cause as attractor supports and justifies a specific story, which can then be revised if the revision better serves the ultimate goal in changed conditions.

We can thus derive that EEG's approach is compatible with institutional ruling *by narratives able to preserve collective identities*, and that a specific narrative can be revised, in changed conditions, to *better serve* this goal.

It is then plausible in an EEG set-up that Italian cultural heritage institutions developed a narrative that their heritage deserves conservation and study by specialists, rather than of the vast public. It is also plausible that this was due to the amplitude of the heritage, which denotes a national identity.[25] It is moreover conceivable that this story may switch toward a broader audience, if economic return increases and allows actors to better achieve their fundamental aim, i.e. the preservation of cultural heritage as national identity. Increasing returns, entailing more revenues, would allow conservation activities to be better paid and thus improved. They would also allow more, better qualified operators to work. Thus, a new narrative—seemingly only slightly different from the previous one—would begin to

[24] Lane and Maxfield mention Ricoeur to indicate the principles that inspired them (Lane and Maxfield 2005, 9), Alicia Juarrero cites Hans-George Gadamer (Marburg 1900—Heidelberg 2002) that cites Heidegger. Paul Ricouer (Valence 1913—Châtenay-Malabry 2005) recognized Edmund Husserl (Prostějov 1859—Freiburg im Breisgau 1938) among his teachers and Martin Heidegger (Meßkirch 1889—Freiburg im Breisgau 1976) were his assistant.

[25] One expert, Salvatore Settis, classical art historian, wrote: «Cultural heritage is not just the sum of its monuments, museums, natural beauty; but above all, their forming a whole, whose binder I would not know a better way to call that "national tradition" or "*national identity*", that is the awareness of one's heritage, and its unity and uniqueness requires to be *preserved* in situ. […]. [This is] an ancient and deep-rooted *institutional* culture, the sense of experience and founder of the Italian identity of the Republican Constitution, the shared pride of belonging, of being a citizen of this country» (Settis 2002, 9; italics added).

be told. The new message could become that *although cultural heritage should mainly serve scholars, it should also have an educational function*. It remains to be seen how this evolution can interact with the possible evolution of the private actors' routines.

3.2.8 Interaction

The question of conflict and negotiation, and thus of intentionality and power, is primarily located in the interaction of actors and between actors and social and institutional structures. «A developmental, complex systems perspective on spatial economic evolution would assign importance […] to the dynamics […] that produces the components which in turn continue to maintain the organized structure that gives rise to those components. […]. […] in the socio-economic realm [this] is the complex outcome of the intentional behaviors and learning of economic agents pursuing their own objectives. In so doing some agents may possess and exert more influence and power than others» (Martin and Sunley 2014, 11).

Here we are especially interested in the analysis of modes of interaction in order to understand under what circumstances the status quo is preserved, even though it is or has become inefficient, and which circumstances bring about change by *changing narratives*. The above-mentioned work of Lane and Maxfield (1995) offers useful suggestions in this regard. As we have already said, it is placed in the context of concepts and mechanisms related to the dynamics of complex adaptive systems. In this context, they define the conditions for actual change, a real opportunity for significant improvement having already been manifested. The change in structures and operations will take place by means of interaction between actors and institutions at the same time shaping meaning. Conditions are (1) heterogeneity, (2) aligned directedness, (3) permissions, (4) mutual directedness and action opportunities.

Heterogeneity «requires that the participating agents differ from one another in key respects. They may have different competences, attributions, or access to particular [resources] […]. Combining different competences can generate new kinds of competence that then reside in the relationship itself» (Lane and Maxfield 1995, 32). In the cultural heritage example, this condition is guaranteed by the assumption that private and public agents are both involved, and they have different competences, attributions, and access to cultural heritage. This condition is not guaranteed in general. Though rare, there may be situations in which little or poorly exploited resources belong exclusively to an actor by acquired rights or by tradition or expertise. In these cases, change is very difficult because there is no comparison between different ways of seeing with respect to consolidated ways of seeing and acting. It is as if the resources were not there.

Aligned directedness means that «participants in the relationship need to orient their activities in a common direction» (*Ibidem*, 32). In the cultural heritage example, this condition is guaranteed by the assumption that for all the actors

involved—public and private—there is a positive relationship between desired investment in cultural sector professionalism and its expected return. This is not an assumption that can be valid in general. There may be circumstances in which some important actors, without which it would be difficult to do anything, are opposed to change. This is, therefore, the *first situation* where resources and opportunities remain *untapped*.

Permissions mean that «relationships are based on permissions for the participants to talk to one another about particular themes in particular illocutionary modes (requests, orders, declarations, etc.). These permissions are explicitly or implicitly granted by superordinate agents and social institutions. Unless potential participants in a relationship have appropriately matched permissions, or can arrogate these permissions to themselves, the relationship's generative potential is blocked» (Lane and Maxfield 1995, 33). In the cultural heritage example, this condition may be fulfilled as in recent years a common feeling is emerging among not only private actors but also public officials and specialists on the need for better promotion and fruition in the cultural heritage. For example, 2,000 experienced operators, mostly public, who responded to an online questionnaire, showed clearly the primary objective of sharing public-private development projects (Forum Pa 2012). This indicates that in the public sphere the idea of exclusive responsibility for this heritage has now been superseded. The pamphlet by Salvatore Settis, written in protest against the attempts of cultural heritage privatization, supports its economic valorization. Again, this condition is not guaranteed in general. In many situations there is strong opposition not only to this or that project of change, but to any change that upsets traditionally established social order. This is often the case when a territory is dominated by criminal organizations, but it also occurs when a strong local identity feels besieged and threatened by external forces and actors, no matter how well intentioned. This is the *second situation* where there is inefficient use of resources, besides being a specific problem, which hinders the rule that place-based policies require an external component.

Mutual directedness means that «agents need more than common interests and different perspectives to form a generative relationship. They also must seek each other out and develop […] trust […] as participants come to realize the unforeseen benefits that the relationship is generating» (Lane and Maxfield 1995, 33). On the other hand, this realization requires *action opportunities*. «Engaging in joint action focuses talk on the issues and entities of greatest interest—those around which the action is organized. And action itself reveals the identities of those engaged in it. In addition, new competencies emerge out of joint action, and these competencies can change agents' functionality and hence identity—even leading to the formation of a new agent arising from the relationship itself» (*Ibidem*, 33). This is probably the reason why many good intentions and projects, with a repeated rhetoric,[26] have not yet produced significant results in enhancing the cultural heritage in Italy.

[26] A Google query, end of 2014, with all these words «migliore valorizzazione patrimonio culturale italiano [better valorization Italian cultural heritage] produced 567,000 results.

Mutual directness and action opportunities imply that the example offered by other countries as well as application of formulas and "best practices" are not enough. Concrete specific place-based *experiences* are required instead, which enable different actors to get to know one another and achieve something worthwhile. This is the *third situation* of untapped resources.

This account summarizes the obstacles to be overcome in order to change narratives beside changing private actors' routines for the use of local untapped resources. The obstacles are: (1) the opposition of those who have no interest in a specific or any change, conflicting with those who are willing to change; (2) the lack of mutual experience between actors of innovation. So we see that, even when there are significant gains from improved use of resources and many would like to make these gains, change is difficult because these resources are "trapped". The experience of change, that would support both the change of routines and the change of narratives, is apparently possible only after a previous experience: a trap. Those interested in the status quo are therefore well placed to win the game against those who want change.

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Chapter 4
Under Valorized Areas

Abstract A region or a city, with local specific resources that are untapped or badly employed, would have *potential* for development if interaction between agents and institutions were able to bring about appropriate intentional actions. This condition is very hard to fulfill. Even if some actors are oriented towards change, they must exit the circular causation mechanism, where everybody waits for someone else to make the first move. In this chapter we will see a simple representation of the trap. The experience of change can be considered as a condition for changing routines at the level of individual private actors and changing narratives at the level of interaction between actors and institutions. We can therefore simplify by describing persistence and change in the allocation of resources as dependent on decisions of firms that are affected by the experience of other firms. We will also discuss two obvious but ineffective ways of getting out of it: the "big push" and the drop of wages.

4.1 Untapped Resources

It is important first to qualify the remit of the discussion. The object of our analysis will be how to take advantage of the development opportunities offered by existing significant resources, which are currently untapped or employed at low productivity. We are thus dealing with *under-valorized areas*, a term with a broader scope than 'lagging regions'. We may well find under-valorized areas in developed countries.

The most common situation is where a firm that wants to leave a traditional activity and invest in a modern one, finds it difficult, if not impossible to do so, if it is the first one to make the move. The first firm to move must be prepared to pay very high costs for gaining knowledge and skills, and building relationships, which are all indispensable for this new activity. If others had already successfully made the transition, everything would be easier. In general, the transition to a more productive set up only takes place if a sizeable block of resources shifts at

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the same time. The problem is that nobody knows how big the block needs to be before the transition can take place. The situation becomes a trap because a small number of immobile resources cannot exit low productivity, while individual holders of resources cannot come to a spontaneous agreement to transfer a block of sufficient size, since nobody knows how big the block needs to be.

In completely valorized conditions, these reallocations take place all the time, with little or no difficulty at all. Resources are disinvested from activities with low profit margins and reinvested in activities with higher margins. This is the main difference between valorized and under-valorized areas. In valorized areas, the opportunity for resources to be tapped is wider and more articulated than in under-valorized ones. In valorized areas a sole firm can disinvest from one activity and invest in another without incurring excessive costs.

4.2 The Trap

An example might be firms that are unable to recruit locally-available highly educated workers—even when they need high-skilled labor to innovate—owing to a vicious circle. These firms cannot achieve the competitive position that they would only be able to achieve through innovation, so they will not grow and will not employ other workers. The same firms also under-employ machinery. They thus run the great risk of demand instability in a market characterized by a high level of competition owing to low levels of innovation.

4.2.1 An Example

Let us consider a partly artificial example, that refers to a real situation that took place in a small Italian town. The example also takes into consideration a Dutch study on the relationships between universities and businesses, which deals with specific problems in different faculties (Bekkers and Bodas Freitas 2008). A specific and valuable resource of this Italian town was longstanding, high-quality research and teaching in mathematics at the ancient local university. The university comprised a full range of faculties, some decent, others low quality (such as engineering and economics), still others very poor, such as the law faculty. The prestige of the faculty of mathematics gave rise over time to a large assignment of teaching and technical staff by the Academic Senate, and the faculty had a high teacher/student ratio, which led to high-quality teaching. There were 70–100 mathematics graduates per year and the majority of them found job as high school teachers in the same city and/or in the region, or even in other regions. Individual returns were good, as teacher salaries were satisfactory.

About twenty years ago, however, a long period of reduction in the real value of their salaries and in teachers' social prestige started in the country, while the

salaries and prestige of other jobs, such as engineering, management and marketing increased. A process of slow but steady enrolment reduction in mathematics started, while the number of students in engineering and economics grew, despite worse teaching. Within a few years, the faculty of mathematics had only 15–20 students per year and a significant excess of "productive capacity". A valuable resource began to be poorly employed, continuing to produce teachers for a traditional sector that was unable to pay enough. In the Academic Senate there was a clash between those who wanted to help the faculty of mathematics to find more students by dedicated initiatives, and those who wanted to take resources away from it.

At the same time, some medium-sized enterprises in local and regional industry were potentially affected by the ongoing push towards greater R&D intensity. These enterprises, operating in advanced "new sectors", would have been able to recruit graduates in mathematics, even though they had never done it before. If such firms had hired graduates in mathematics, the graduates would have earned high salaries, and firms would have gained better innovation capacity. There would have been new incentives to enroll in the faculty of mathematics. The number of students would have increased, making the best use of its teaching capacity. The conflict at the university would have been balanced and would probably have led to a solution that would not have penalized, and might even have favored, the mathematics faculty. Firms would have achieved greater competitive skills, would have grown, would have employed more people, would have had a higher productive capacity utilization, would have made more investments, and so on. However, none of this actually took place.

There was a serious problem. The gap between the language and way of thinking of traditional graduates in mathematics—more so of their professors—and what firms were seeking was too wide. These two worlds, one very abstract, the other completely concrete, would have had to make reciprocal efforts in order to close the gap. The breech was so deep, the attitudes of the two parties so mutually offensive, with one describing the counterpart as ignorant, coarsely pragmatic, and the other as abstract time wasters. The *shared narrative was that the two worlds could not in any way understand each other.*

However, in places where a successful relationship between universities and business has been established, there are chances of success even in the extremely arduous case of mathematics, provided some conditions are met. These conditions are that universities adapts their programs and teaching methods, and that firms create a favorable environment. These requirements, however, implicate serious difficulties (and costs) in designing organizational change. The difficulties and costs are significantly reduced when a number of mathematics graduates are hired by a number of companies. At that point (imagine, for example, 50 graduates hired in ten different companies), the way programs should be adapted would become quite clear and teaching methods would already have made several steps forward. Likewise, organizational arrangements best suited to creating a favorable environment in firms to welcome these graduates would have been found.

Yet, a question remains. How can a process able to reach that threshold point be put in motion? A firm on its own, before hiring even one graduate, will want to be

sure (let us assume this for now, we will abandon this assumption later in a more complex model) that the experiment will be successful. Being the first, however, and lacking other experience, the organizational costs of guaranteeing the experiment would be very high. In our example, none of the subjects involved made the first move. Nobody was willing to pay these costs, even though everybody was vaguely convinced that it was a useful thing to do, as they stated during several conferences on the relationship between university and business.

This probably means that graduates in mathematics were offered a job, but did not accept because the wages offered were too low—lower than teacher's salaries in fact—as companies tried to shift the cost of their adaptation onto wage reductions. Reducing the number of enrolments in mathematics has also increased the proportion of gifted students whose preferences were fairly distant from the business world. Mathematics professors, with fewer but brighter students, and very low teacher turnover in the faculty, accentuated abstract and speculative teaching. A combination of aging professors and students receiving increasingly theoretical teaching walked together down a path that led them farther and farther away from the world of business. That was a trap.

4.2.2 A Simple Model

The under-valorization of resources creates a condition that tends to be permanent, since nobody has sufficient strength to move away, and those who do not want change tend to prevail. Economic development literature has often gone back to this point, from Leibenstein (1957) and Nurkse (1953) to the early formalization provided by Murphy et al. (1989), and by Krugman (1993), up to and including the proliferation of works published in the 1990s (Hoff and Stiglitz 2001).

A simple model summarizes the point in question.

Let us take into consideration a stock of local resources that constitutes the input for two possible kinds of production function: a traditional one (well known) or a new one (the modern sector). An example could be the university that could generate a flow of 100 graduates in mathematics either as teachers for the traditional sector (high school) or as researchers for R&D departments. Let us also assume that these input flows (graduates) are paid a given wage in the traditional sector. In the new sector, the wage will be higher, due to higher productivity, and when a block of input units is transferred to it. It will be lower than in the traditional sector before this, due the firms' learning and organizing adaptation costs (transfer costs).

Let us assume:

w unitary wage in the traditional sector linked to the prevailing wage in the economy as a whole, normalized at 1;

w_{m} unitary wage equal to the productivity of an employee in the new (modern) sector minus transfer costs;

N total number of available employees;
N_{m} total number of employees in the modern sector;
n share of employees in the new sector $n = \frac{N_m}{N}$.

The unitary wage in the modern sector w_{m} will rise by increasing the share of employees in this sector. This dynamic is caused by the gradual reduction of transfer costs thanks to the learning (in a broader sense, including acquiring capacity to combat conservative forces and to concur with changes in narratives). Let us assume a law of motion by which the *rate of growth* of the unitary wage in the modern sector is one minus the wage *level*. We conceive in this way a learning process that permits a significant reduction of transfer costs. Gradually this reduction decreases, reaching a final point when all that is needed has been learned or acquired.

Let us designate:

$$\widehat{w}_m = \frac{\frac{d}{dn} w_m}{w_m}$$

We assume:

$$\widehat{w}_m = 1 - w_w; \quad \frac{d}{dn} w_m = w_m(1 - w_m) \tag{4.1}$$

As a numerical example, starting at $w_{\mathrm{m}}(n = 0) = 0.6$, this (4.1) differential equation has the solution:

$$w_m = \frac{0.6}{1 + e^{-n}} \tag{4.2}$$

That is the logistic function (Fig. 4.1).

The dashed line to the left and the continuous line to the right represent alternative payoffs for employees. As long as a share of them, less or equal to a little more than 40 % (at the point ***T***), is in the modern sector, they will still find it advantageous to stay in the traditional one. The threshold ***T*** is not known to agents. Therefore, they cannot cooperate in deciding together the transfer of

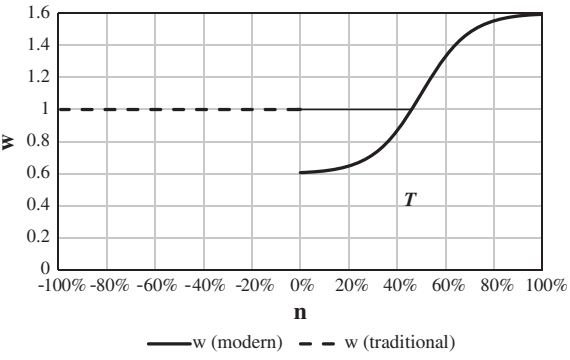


Fig. 4.1 The trap

a large enough share of employees in order to earn a better wage in the modern sector than in the traditional one.

This simple representation of a trap is useful to understand the basic cause of a state of specific local resource underutilization. The cause is the lack of information. If the ***T*** threshold were common knowledge, agents would find ways of establishing a process of confrontation-collaboration in order to reach it. The trap occurs because of a lack of information that prevents this collaborative or conflictual process. This is another reason why narratives are so important in shaping behavior.

4.2.3 Discovered or Created Opportunities

Common knowledge about the ***T*** threshold could avoid the trap although this knowledge may be dispersed. If there is any knowledge of the opportunities for better use of resources, even if this knowledge is dispersed or fragmented, the problem is to conceive and put in place incentives and organizational forms to induce actors to share whatever fragments of partial knowledge they hold, and then use the revealed knowledge to the full. This might be done by an intermediary who knows about other experiences underway because it is his or her job to operate in a wider context of economic activities. There is a growing body of literature involving different disciplines[1] that deals with the mechanisms, means and governance of this knowledge transfer and pooling. However, if the information is simply not there because improvements require firms to go beyond their experience and move towards new prospects, then the problems are different.

In the entrepreneurship literature, which deals primarily with this issue, a distinction is made in a large number of theoretical and empirical works[2] inspired by two different definitions of the entrepreneur: Israel Meir Kirzner's definition and the Joseph Alois Schumpeter's.

> In Kirzner's research the role of the entrepreneur derives from an assumption that human behaviour is bounded by its context and entrepreneurial capacity arises from an ability to recognize opportunities and make decisions in an existing set of circumstances. […] For Schumpeter, the assumption of human behaviour has a greater element of agency, indeed the role of the entrepreneur is to *create* new circumstances rather than to be alert to new opportunities in existing circumstances. (Pittaway 2005, 211; italics added).

Leaving aside the aspects concerning entrepreneurs' motivations, *modus operandi*, and character, the main difference between the two paradigms regards the meaning of *ignorance*. Neither Schumpeter nor Kirzner accept the hypothesis of perfect information. However, they have different opinions about imperfect information. Kirzner maintains that knowledge imperfections produce imbalances in the market, which

[1] For a general overviews, see Zuo et al. (2013) and Contandriopoulos et al. (2010).

[2] Reviews are provided by Rauch et al. (2009) and Dimov (2011).

can be detected (as mistakes) by a careful special agent (the "alert entrepreneur"), so that profits remedy these errors. Information, in this view, exists but it is dispersed so that individual agents do not have access to it. It can be acquired, however, though only after its shortcomings have already produced imbalance effects. «Each market is characterized by opportunities for pure entrepreneurial profit. These opportunities are created by earlier entrepreneurial errors, which have resulted in shortages, surplus, misallocated resources. The daring, alert entrepreneur discovers these earlier errors» (Kirzner 2000, 16, 23). According to Schumpeter, all this is true, but exploits neither the landscape of opportunities nor the entrepreneurs' functions, which are different. These are related to a third kind of transactions, in addition to those that are «exact repetition» and those that are a «plus or minus variation» of them. The «third class of transactions […] consists of new transactions mostly, those effected by entrepreneurs or induced by entrepreneurial activity […], [following which] the old total or marginal cost curve is destroyed and a new one put in its place» (Schumpeter 1939, 578 and 88–89). For Schumpeter, lack of knowledge is essential and irremediable. Needs are not generally considered an appropriate explanation for innovation either. Innovation, in Schumpeter's view, does not stem from potential knowledge of those needs. «It might be thought that innovation can never be anything else but an effort to cope with a given economic situation. In a sense this is true. For a given innovation will satisfy them, and as a rule they can be satisfied in many different ways. Most important of all, they may remain unsatisfied for an indefinite time, which shows that they are not in themselves sufficient to produce an innovation» (Schumpeter 1939, 84).

There is a passage from Schumpeter that is very important for our analysis.

> If there are indivisibilities and the innovation becomes possible only beyond a certain quantity of output, while below it the old method remains superior […], we may indeed draw one cost curve to combine costs with the old method in one interval and costs with the new method in another interval. But this is possible only when the new method has become familiar and the whole system is adapted to it, which means that it enters the production functions—i.e., the practical range of choice open to all—and is no longer an innovation. (Schumpeter 1939, 84).

For Schumpeter, innovation may be costly but, once it has been realized, it helps others decide to change. Conversely, when it is lacking, it prevents change. This is the very definition of the trap.

We may thus regard our trap as "Schumpeterian". In an under-valorized area with opportunities for development brought about by badly-used local resources—of course—the conditions emphasized by Kirzner may exist. These resources, that is, may be amenable to better use without altering the existing production function, since the agents have not used them optimally. The existence of thresholds for innovation (traps), however, makes Schumpeterian changes more likely. These thresholds, in fact, may condemn local systems to a longstanding invariant state of their economic and social structures. This, in its turn, gives plenty of time to everybody to gain more than sufficient knowledge and exhaust every possibility to improve these structures, namely Kirzner's opportunities. However, Schumpeterian opportunities remain, which are ultimately the decisive ones.

4.3 A "Big Push" Way Out and Its Limits

The more classical indication of a way out from the trap, foresees a policy-maker's action that is big enough to produce the required move, by direct intervention or by providing hefty financial support to private agents. This is not due to policy-maker's best knowledge, which would be unrealistic. Policy-makers do not know the threshold of the trap that private agents ignore. The reason for a suggested public intervention is different and relates to its large dimension (in size and in time) the State can provide. The State can implement a "big push", a formula dating back to Rosenstein-Rodan (1943).

In proposing a big push, he suggested two reasons. The first and best-known is the claim that development based on existing wealth was impossible because «capital must be supplied internally at the expense of standard of life and consumption which are already at very low level» (Rosenstein-Rodan 1943, 203). This was the first argument, namely a "poverty trap". In this case the big push policy would have to continue until it reached a saving capacity of the economy, making growth self-sustaining. Its level may be known based on other countries' experiences.

Rosenstein-Rodan indicated a second reason for the state of under-development, considering that private entrepreneurs had a subjective perception of risks worse than they were objectively. «[…] subjective risk estimate is [in a depressed area] bound to be considerably higher than the objective risks» (Rosenstein-Rodan 1943, 206). This remark about the difference between real and perceived risks indicates that Rosenstein Rodan had in mind not only the lack of capital but also the lack of knowledge that prevented optimal use of existing resources. But the big push recipe has strong shortcomings in the case of uncertainty. The big push should last for so long and be so extensive as to allow the whole economic and social system to achieve new levels (of productivity and welfare). These should be significantly higher than those they started with, but without knowing what these new levels should be, the big push idea indirectly supports the "big government" prospective. This is why it was strongly challenged. For example, William Easterly, showed how in the mid-2000s the concept of trap «has returned to favor in the development policy-making community» (Easterly 2006, 289), and remembers that its rejection was a reaction after the failures of the widespread public interventions and of the 1980s big government ideology. That experience soon revealed its limits. Not knowing how big a push is needed and how long it should go on for, governments need to push without imposing credible limits and a credible time-frame. The agents, in this case, would be those more interested and better able to collect public funds than to make entrepreneurial changes. Since taxpayers know that this happens, they will be encouraged to evade taxes over a certain threshold. Ultimately, the way out of the trap through a big push provided by the State is not likely to be effective, and more likely to be a detriment than a benefit.

We may consider that public intervention has diminishing returns: a very large or indefinite intervention is inefficient. Furthermore, public intervention, beyond

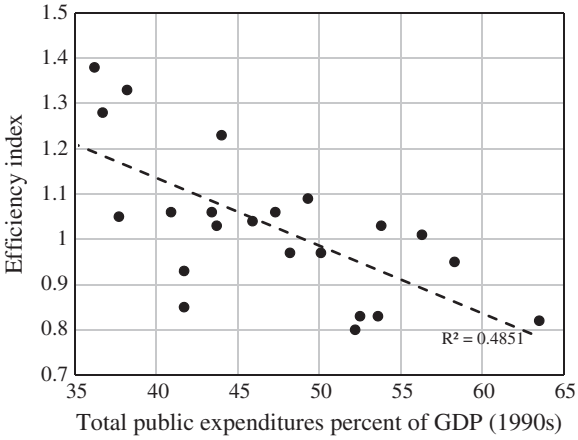


Fig. 4.2 Efficiency and government size in 23 industrialized countries. *Notes* The efficiency index takes into account the relationships between outcomes and expenditure in the public sectors of general administration, health, education, infrastructure, economic performance in the 1990s. *Source* Figure obtained by processing data from Afonso et al. (2005)

certain limits, may lack legitimacy among taxpayers. Some empirical results appear to confirm this. For the diminishing returns hypothesis, we may consider the research conducted by Afonso et al. (2005) on 23 industrialized countries,[3] which includes various items of public expenditure as a percentage of GDP and efficiency indices in terms of results in relation to expenditure (see Fig. 4.2).

These data show a negative correlation between public spending and an efficiency index that takes into account the ratio between outcomes and costs in different public activities. This may indicate the presence of diminishing returns in public administration. For the legitimation profile, Slemrod’s research is particularly interesting. «The association of government size with prosperity is positive until a level of government spending somewhere between 31 and 38 % of GDP, after which its marginal effect is negative. Thus, although a trusting citizenry allows larger government, the tax burden this entails erodes the rule obedience taxpayers exhibit toward government» (Slemrod 2002, I). These results are also in accordance with Acemoglu’s research. «There needs to be a certain degree of balance of powers between the state and the citizens. […] excessively weak states are likely to be as disastrous for economic development as the unchecked power and expropriation by excessively strong states» (Acemoglu 2005, 1211). We can therefore conclude that most likely there is a definite limit of the public spending posed by diminishing returns that are not offset by corresponding increases in the availability of funds. However, if such a limit exists, it may be lower than the big push needed to get out of the trap.

[3] United States, Japan, Australia, Ireland, Switzerland, United Kingdom, Iceland, New Zealand, Spain, Portugal, Luxembourg, Canada, Greece, Germany, Norway, Netherlands, Italy, Belgium, France, Austria, Finland, Denmark, Sweden.

4.4 Another (Opposite) Way Out: Low Wages

One limit of the simple trap model we have proposed is that the difference between the two sectors' (traditional and modern) wages is given. If this difference were variable, and possibly endogenous, shrinking in the event of unemployment, there would be a different way out of the trap, opposite to the big push idea. The big push idea calls into action the State while this different way calls into action the market mechanism that provides a price reduction in case of excess of supply.

In the simple trap model, a given *initial* wage gap (in the numerical previous example, $1 - 0.6 = 0.4$ is the initial difference in favor of the traditional sector's wage) prevents a single employee from moving from a traditional to a new sector. Suppose, however, that there is complementarity between the predominant activities in the traditional sector and significant overall unemployment as in some endogenous growth models. A small or absent modern sector may implicate structural vulnerability to external shocks in the economy, which is dominated by traditional activities in which the lack of innovation heightens exposure to competition. There would thus be significant instability in the demand for labor, with frequent periods of high unemployment. If wages were flexible, their reduction in the traditional sector could entail a way out of the trap, provided that wages net of adaptation costs do not decrease in the modern sector. This would reflect a realistic state of labor market segmentation. Wage reduction lowers the convenience of staying in the traditional sector and increases the convenience of accepting low wages in the modern sector (see Fig. 4.3).

However, we should first ascertain whether wages really decrease with unemployment, and then discover whether this drop is really desirable.

As to the question of wage flexibility-rigidity, we may take into account that the labor market does not work like other markets because the "good" that is exchanged implicates the life of workers. Today, a downward rigidity of wages in the presence of unemployment has been systematically observed, and there is a vast literature on wage rigidity. This literature has shown that wage flexibility-rigidity depends on the specific characteristics of each country (including its history), its institutional system, and its organization of collective bargaining. Given these conditions, wage flexibility-rigidity also depends on the relative intensity of various inputs in production processes.

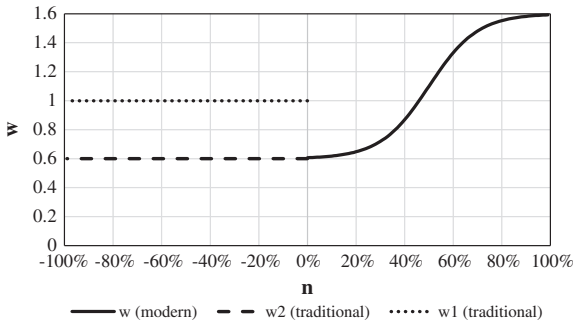


Fig. 4.3 A way out from the trap by a wages' drop

4.4.1 Wage Flexibility

A review of the empirical literature shows that wage flexibility is lower, at least in Europe, mainly in sectors that are intensive in high-skilled white collars, and in labor-intensive sectors (Babecký et al. 2009). The first (high-skilled white-collar intensive) is a typical characteristic of modern sectors driven by new technologies. Considering only this variable, we should say that in the more traditional sectors wages tend to be flexible. The second (labor-intensive), however, is a feature of traditional sectors (Peneder 2003). All that remains is to examine both hypotheses.

Jacques Drèze pointed out that «when the absence of markets prevents agents from hedging price variations, it may be second-best efficient to limit price variations in the first place. […]. In this way, […] wages should fluctuate less than marginal value products, to provide income insurance to risk-averse workers» (Drèze 1999, 2 and 5). On the other hand, the *theory of efficiency wages* attaches importance to the fact that entrepreneurs do not have all the information in order to act efficiently when hiring workers, and to glean from them what they need. They are thus willing to pay a higher wage compared to the equilibrium one, in order to increase the quality of their workers, reduce turnover, and gain greater work commitment.

Higher wages increase the overall quality and ability level of the job applicant pool and helps win the most talented workers away from competitors. Firms spend on recruiting and hiring new workers and then training them so that they can be fully productive at their jobs. Lower worker turnover leads to a reduction in the costs associated with recruiting, hiring, and training, so it can be worth it for firms to offer incentives that reduce turnover. Paying workers more than the equilibrium wage means that it is more difficult for workers to find equivalent pay if they choose to leave. Workers exert more effort when they receive a higher wage. If a worker has an unusually good deal with his current employer, then the downside of getting fired is larger than it would be if the worker could just pack up and get a roughly equivalent job somewhere else. If the downside of getting fired is more severe, a rational worker will work harder to ensure that he does not get fired. There are also psychological reasons why a higher wage might induce effort, since people tend to prefer working hard for people and organizations that acknowledge their worth and respond in kind. Empirical findings appear to support this theory in general, although they cannot clearly distinguish the relative strength of the different possible mechanisms, nor completely ascertain whether the theory of efficiency wages is better than other possible theories at explaining wages above the equilibrium level.[4]

[4] A preference for psychological (moral) reasons emerges from direct surveys (Agell and Lundborg 2003; Bewley 1999; Howitt 2002).

4.4.2 The Italian Decline

The legal framework can act in a decisive way on wage flexibility. Rules may thus be adopted which impose wage reductions even in violation of any rationality. At the end of the 1990s in Italy, contracts that constrained firms and workers less were introduced by law reducing the workers' bargaining power regarding their wages. Rationally, the most innovative companies should not have adopted them since these new contracts would reduce workers' loyalty and dedication. However, the fact that other less innovative companies adopted them, because loyalty and dedication in their case was rationally worth little to them, persuaded other firms to use them under the pressure of imitation.

Under conditions of uncertainty, in fact, it is not known a priori if a company is or could be more or less innovative. The result of this change of rules, then, pushed many companies to behave irrationally behavior. If efficiency wage theory holds, this should produce negative effects on development in an industrial system mainly comprising labor-intensive sectors where workers' loyalty and dedication represents a primary factor of competitiveness. This is what seems to have happened in Italy, and could help explain its decline in the last 15 years.

4.4.2.1 Facts and Figures

The growth of per capita GDP, which is an indication (albeit partial) of the welfare of the population, is the result of two elements in a simple arithmetic decomposition. It depends on the number of hours worked, which in its turn depends on internal and international economic trends. It also depends on hourly productivity, mainly caused by internal factors.

The variation of GDP on the population ($\Delta pil/P$) is approximately given by the sum of the variation of hours worked on the population ($\Delta H/P$) and the variation of the GDP on hours worked ($\Delta pil/H$).

$$\frac{pil}{P} = \frac{H}{P}\frac{pil}{H}; \Delta\frac{pil}{P} \approx \Delta\frac{H}{P} + \Delta\frac{pil}{H} \tag{4.3}$$

The three Figs. 4.4, 4.5 and 4.6 show, for EU 27, the rates of change (2001–2011) of these three values: GDP per capita, hours worked and hourly productivity.

As figures show, Italy had the least GDP growth per capita.

However, this does not depend only on external conditions such as the global crisis, which have influenced the reduction of working hours. In fact working hours have gone down in Italy less than in Ireland, the United Kingdom, Romania, Latvia, Portugal, Hungary, Spain, France, Denmark, all countries that have grown more. It appears to have depended on productivity per hour, which in Italy recorded very low growth not only from 2006 to 2011, but from 2001 to 2005 too. This is a strong *Italian anomaly*. It is also an anomaly compared to the past. In the 1980s and 1990s, the hourly productivity growth in Italy was appreciable, better

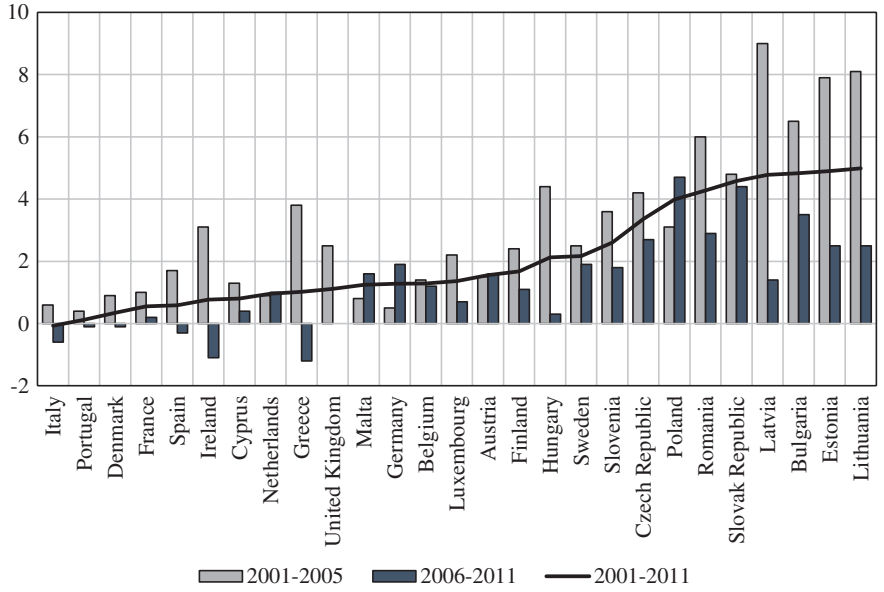


Fig. 4.4 EU 27, GDP per capita rate change (%). *Source* Adapted from Van Ark et al. (2013)

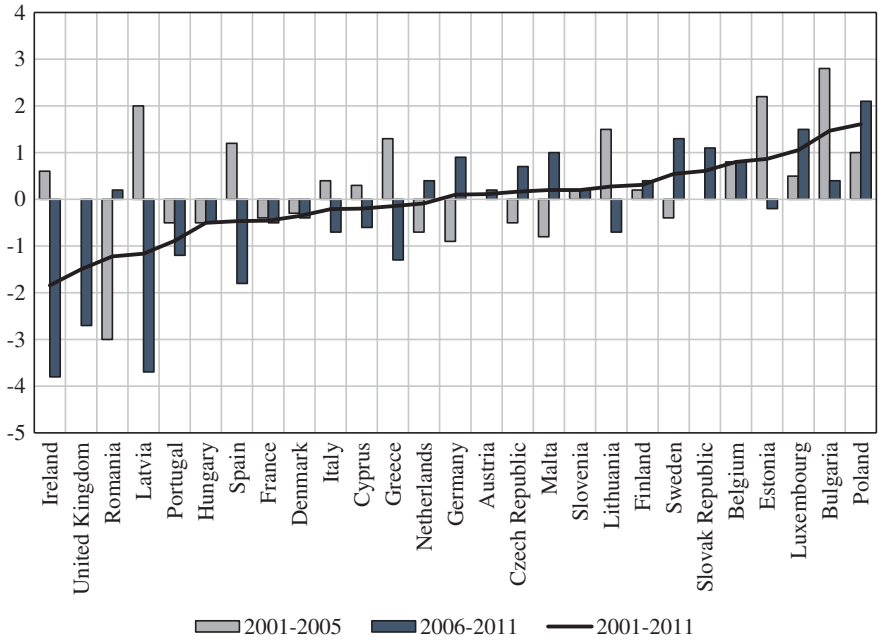


Fig. 4.5 UE 27, worked hours rate change (%). *Source* Adapted from Van Ark et al. (2013)

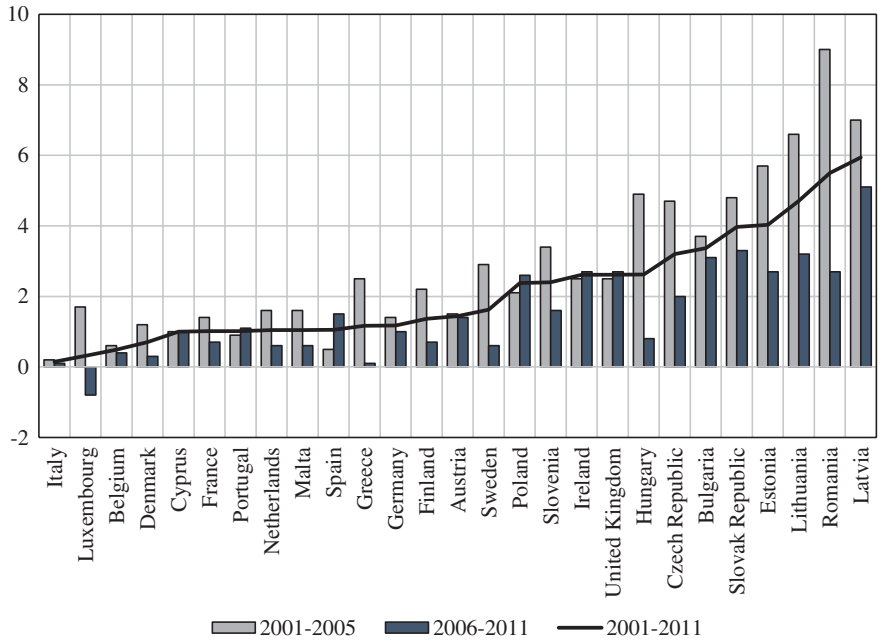


Fig. 4.6 Hour productivity rate change (%). *Source* Adapted from Van Ark et al. (2013)

than in Greece, the Netherlands, Spain. It was similar to that of Belgium, and just under that of Sweden, Denmark, Austria, Germany, UK, and France (Fig. 4.7).

As shown in Fig. 4.8, the responsibility for this disappointing trend in the hourly productivity in Italy during the ten years from 2001 to 2011 was mostly attributable to industry, a sector in which productivity has recorded zero growth.

The rate of change in hourly productivity can be decomposed into four additional components that correspond to the most significant factors affecting it. They are: (1) the change in the composition of employment by level of education and training: more educated workers are more productive; (2) the accumulation of traditional physical capital (machinery and equipment): the job is more productive with more facilities; (3) the accumulation of capital in new technologies, tools that are recognized as particularly important to productivity performance; (4) residual (*tfp* total factor productivity) in which all the other factors of productivity are included, and therefore it is believed to represent efficiency and innovation. Given this decomposition, Fig. 4.9 shows an even more pronounced Italian anomaly. In the ten years from 2001, Italy represents an anomalous case of low hourly productivity growth, especially in industry, because the residual *tfp* (efficiency and innovation) had a *negative* value, while the contributions were modest but positive of human and physical capital accumulation, both traditional and of new technologies.

The negative *tfp* in Italy is not recent. It began to emerge in the early years of 2000 (see Fig. 4.10).

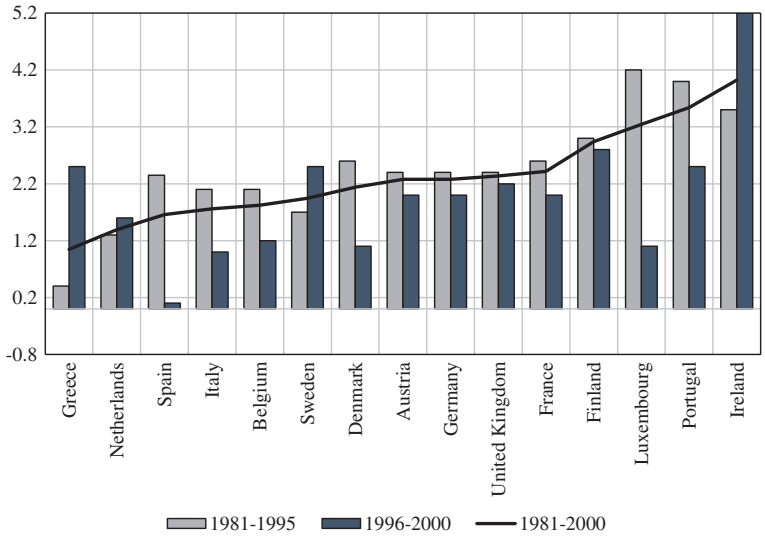


Fig. 4.7 EU 15, hour productivity rate of change (%). *Source* Adapted from Koszerek et al. (2007)

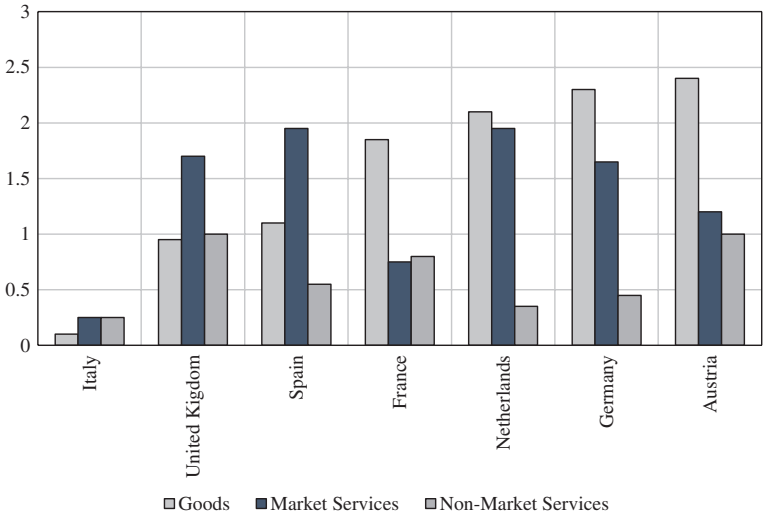


Fig. 4.8 Hour productivity rate of change by sectors 2001–2010 (%). *Source* Adapted from Van Ark et al. (2013)

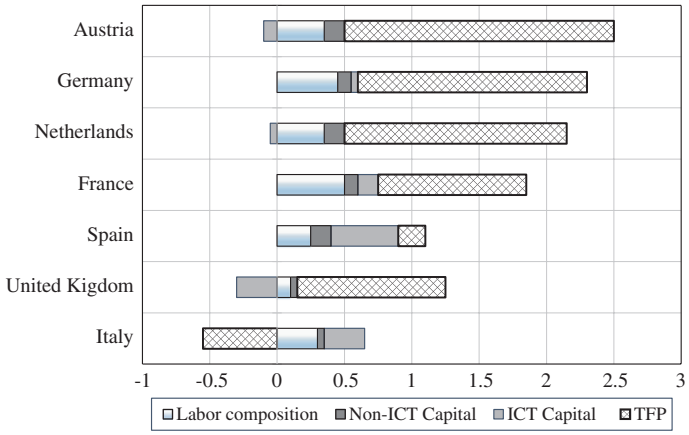


Fig. 4.9 Industry, components of per hour productivity growth 2001–2011. *Source* Adapted from Van Ark et al. (2013)

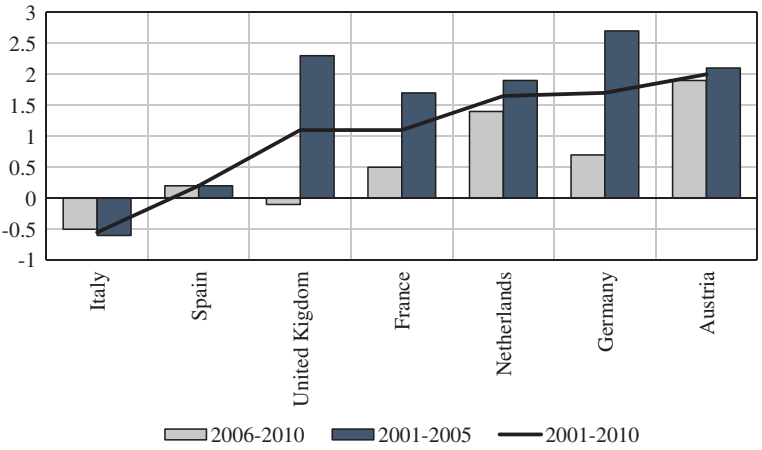


Fig. 4.10 Industry, tfp component of hour productivity growth 2001–2011. *Source* Adapted from Van Ark et al. (2013)

4.4.2.2 Explanations

Desperate times call for desperate measures. The Italian anomaly could be considered the opposite of the economic miracle of the 1950s and 1960s. No convincing explanation of the anomaly has been provided, and its causes and effects are not easy to untangle because there cumulative mechanisms at work.

Since the 1990s there have been plenty of negative factors that have contributed to the anomaly. These include a huge national debt, which hinders expansionary

policies and spending on public goods and services (included research and education), in addition to a lack of political legitimacy which almost certainly had a negative social and economic impact. Some researchers have listed further factors as being particularly negative. These include the impact on the private sector of public administration inefficiency, a slow-moving legal system, widespread tax evasion and corruption, organized crime, and an unsatisfactory system of public procurement and payments. Others, perhaps the majority, insist on the problem of firms' dimension. The backbone of the Italian industrial system, they claim, is made up of small firms, which innovate and grow less than larger ones.

The results reported by a few researchers provide a different explanation. Damiani et al. (2011) for example, show that a low *tfp* in Italy can be attributed to limited spending on research as well as to *job insecurity*. Taking job security into account, we could propose the following explanation of the Italian anomaly.

There are two schools of thought on small firms. The first considers them unable to sustain the competition of larger firms and foreign producers. Only Italy's longstanding policy of devaluing the lira, according to this view, allowed small firms to survive. Suppose that the selling price of a machine tool on the international market was $1,000, its production cost[5] in an Italian small firm was one million lire, and the rate of exchange was 600 lire per dollar. The manufacturer earned 600 thousand lire, but spent a million. In order to survive by covering the costs, the exchange rate had to be increased to 1,000 lire through devaluation.

The second school of thought considers small businesses able to compete and saw devaluation policy as a method for supporting profits. Suppose that the small firm's production cost for the machine tool was 600 thousand lire, devaluation would have led to a profit of 400 thousand lire: one million of revenue (at a rate of 1,000 lire per dollar) versus 600 thousand lire of costs.

Over a period of about thirty years there was a worldwide increase in the share of small firms in manufacturing, with an Italian peculiarity of an increase in absolute values between 1971 and 1981. This trend came to an end ten years ago. Table 4.1 shows that, from 1971 to 2001, Italian manufacturing firms with less than 50 employees have increased their employment by about 760 thousand units, balancing the loss of 960 thousand workers of firms with 50 or more employees.

For both these two schools of thought, Italy's inability to devaluate its currency owing to its inclusion in the Euro zone, has forced firms to intervene on the cost side. In our example, if the exchange rate was fixed at 600 lire per dollar, the survival of the small firm in the first case required a reduction of production costs from 1 million lire to 600 thousand, while in the second case this reduction allowed extra profits equal to 400 thousand lire. When external devaluation was no longer an option, it was decided that small businesses should be supported by "internal devaluation". That is, workers' job security was reduced in order to limit their bargaining power and thus reduce their real wages. Two laws were passed, on June 24, 1997 n. 196 on February 14, 2003 n. 30 that enacted these changes.

[5] Including raw material costs, labor costs, depreciation, and a normal remuneration of capital.

Table 4.1 Employment in the Italian manufacturing sector, firms with at least one employee

	Workers	Shares of employment (%)	
		From 1 to 49 workers	Form 50 workers upward
1971	5,101,563	42	58
1981	5,828,409	49	51
1991	5,212,273	58	42
2001	4,895,858	59	41
2011	3,891,983	55	45

Source Table obtained by processing data from Brusco and Paba (1997, 270) and from Istat http://dati-censimentoindustriaeservizi.istat.it/

Table 4.2 Three different machine tool's quality, costs, and selling prices

Producer of reference	Selling price	Features	Production cost in Italy	Profit
South-East Asia	€600	Low quality, standard, poor assistance	€600	€0
Germany	€1,000	High quality, standard, medium assistance	€800	€200
Italy (protected labor)	€1,200	High quality, customized, good assistance	€900	€300

As Table 4.1 shows, the internal devaluation recipe has not been successful: small firms in Italy lost a million workers between 2001 and 2011.

An explanation for this failure could be linked to the fact that both schools of thought paid insufficient attention to a functional link between employment conditions and production quality (and therefore selling price) in the Italian industrial system of small firms. The "made in Italy" label was a strong element of competition. Small firms in the manufacturing sector were able to hold up to the competition, making products comparable to those of major competitors owing to their flexibility. This made them highly adaptable to specific customer requirements without diminishing the quality of their products. The unique capacity for flexibility while maintaining quality was only possible thanks to the loyalty and dedication of workers in the small firms. What was neglected, when labor reforms aimed to reduce workers' bargaining power, was the *potential* for a situation such as the one illustrated in Table 4.2, with ad hoc artificial but credible assumptions.

If this information had been common knowledge, small firms would obviously have chosen the third alternative. These firms, however, were led to fear the competition of South-East Asian producers, who were able to sell a product at €600 when the production cost in Italy was €900. The firms were induced to believe that, by reducing labor guarantees and bringing production cost down to €600, their product would still maintain its high quality. By paying less for the labor, however, the product was of a much lower standard, and became marketable for €600. Rather than defending their profit margins, firms erased them. Internal

devaluation, with *reduced labor guarantees* brought about by new rules, has taken away the key lever of productivity in small firms. The *workers' loyalty and the mutual trust* between workers and employers was destroyed.

There were some other causes for the difficulties small firms faced that could have been avoided. These include the downgrading of the vocational training system, an unjustified multiplication of administrative and bureaucratic procedures, the degradation of local credit (in the context of mergers and acquisitions of local banks by large financial companies). All these factors represented additional costs for small firms. The deregulation of the labor market, then, rather than averting these difficulties, led firms to offset these additional costs—as well as the cost of not being able to devalue currency we have already seen—by reducing workers' wages and thus contributing to their disaffection.

4.4.2.3 Empirical Evidence

Data regarding the *tfp* component (compared to the U.S.) from 2005 to 2011 for Belgium, Denmark, Germany, Greece, Spain, France, Italy, Netherlands, Austria, Portugal, Finland, Sweden, UK are provided by Penn World Tables. Eurostat also provides data on the risk of employee poverty for the same countries: that is, the percentage of employed people who have an income below 60 % of the median income of the population. Let us take the logarithm of *tfp* by country and year from 2005 to 2011 as the dependent variable (LTFP). Let us also take the risk of poverty (ESCL_1) as an independent variable delayed by a year (from 2004 to 2010). We can thus make a regression with panel data (fixed effects for the country), two stages (there is simultaneity) and EGLS cross-sectional weights (there is heteroskedasticity and autocorrelation of errors). The instrumental variable used for each country is the GDP share of total social benefits 2004–2010, which is correlated (negatively) with the variable ESCL_1 but not with LTFP. We have:

$$\text{LTFP} = -0.023\text{ESCL\_1}; \quad \text{Ra}^2 = 0.76, \quad \text{F} = 24;$$
$$\text{t(coef ESCL\_1)} = -2.1.$$

This is indeed a surprising result, which has not been noticed until now and which deserves a broader research. It shows that workers' poverty (proxy to general low wage regimes) is correlated with (and probably induces) an important negative effect on the level of *tfp* in the years 2005–2011, taking Italy and other 12 European countries into account.

4.4.3 Overexploitation of Renewable Local Resources

As the Italian case shows, there may be wage flexibility even if it is irrational in the light of the efficiency wage theory and practice. Moreover, some possibly very

severe "collateral damage" must be taken into account. In fact, economic activities are often based on renewable resources and infrastructures. Low wages lead to their overexploitation and ultimately to their destruction. A classic example is that of over-fishing, which ultimately leads to a complete depletion of fish.

An interesting example can be drawn from the contemporary story of the most celebrated Italian industrial district. The example, although partly artificial, is inspired by tragic events in Prato, where there have been high influxes of Chinese immigrants. In 2001 Prato's district employed to 38,000 (Italian) workers; only 13,000 are employed today. Similarly textile firms have declined from 5,800 to 2,000. During the same period, a huge number of firms owned by Chinese, many of whom immigrated illegally, have been instated.

> At least seven people died and three were injured when a clothing factory in an industrial zone in the Italian town of Prato burned down on Sunday, killing workers trapped in an improvised dormitory built on the site. […] «No one can say they are surprised at this because everyone has known for years that, in the area between Florence and Prato, hundreds if not thousands of people are living and working in conditions of near-slavery», Roberto Pistonina, secretary general of the Florence and Prato section of the CISL trade union, said on his Facebook page. Prato, a town with one of the highest concentrations of Chinese immigrants in Italy, has at least 15,000 legally registered in a total population of under 200,000, with more than 4,000 Chinese-owned businesses, according to official data. Thousands more Chinese immigrants are believed to be living in the city illegally, working for a network of wholesalers and workshops turning out cheap clothing for the export market.[6]

The point is that this transformation of Prato, now the largest European ethnic district for clothing, and the drastically reduced local textile system, was accompanied by the almost total destruction of what was once the essence of the industrial district. As explained by Dei Ottati (2009), «entrepreneurs will be induced […] (to) trigger an actual price-war [… which] accelerates the closure of many firms and a consequent […] reduction of external economies of specialization» (Dei Ottati 2009, 28). In this way the two fundamental components of the district were shattered: a fair system of prices (of final and intermediate products) that ensured a balance between competition and collaboration, and a well shared-out, efficient division of tasks.

Two combined elements were key to the destruction of the organizational, technical, and cultural entirety of the district. First, there were no entrance fees for the Chinese, who, because they were undocumented did not pay taxes of any kind. «The few checks that were carried out in the Tuscan city gave the Chinese the opportunity to work undisturbed […]. To this we must add the collaboration of Italians, who helped the Chinese to set up this illegal district».[7] Second, Prato's

[6] Reuters in Rome; theguardian.com, Monday 2 December 2013. «While textile was losing weight, clothing made by the Chinese exploded to the point that in a few years in Prato was born a true ethnic industrial district for clothes low cost, unique in Europe, consisting of 4 thousand Chinese companies employing at least 30 thousand compatriots (including illegal), capable of sewing nearly one million item per day. The system covers all phases except the production of the fabric, bought in China at low prices». Silvia Pieraccini—Il Sole 24 Ore—10 August 2012.

[7] Sonia Montrella, "Agichina 24", 14 December 2013.

textile entrepreneurs preferred to withdraw from the market and collect rent from industrial warehouses, rather than invest in innovation. «The district did not grasp the moment when it had to change how we produce and propose, and it stopped investing, resting their laurels on guaranteed income from rents paid by the Chinese».[8]

The framework of renewable resources is useful in this discussion. Very low wages and freedom of entry complemented each other because there was a lack of legal control. This lack was consistent with one of the characteristic features of the district, namely, the idea—disseminated by researchers and shared by local (and national) institutions—that social and economic forces were *capable of self-organizing*. That this capability had serious limitations has now generally been acknowledged.[9] The Chinese were able to set up business in large numbers. They were willing to pay high private rents, but in return gained access to a complex of infrastructures, a commercial network and the "made in Italy" reputation of the industrial district at a very low price. Up to a certain point, the intensity of their presence and their labor could have helped the district develop, by giving it the means to restructure. Nevertheless, the lack of barriers to entry and low labor costs led to an excess. The new ethnic clothing district with cheap, low-quality production effectively wiped out the old textile district of luxury, high-end fabrics.

Let us consider a numerical, partly artificial, simulation.

The total cash flow achieved by the Chinese district is estimated at two billion euro per year, the result of a million items of clothing sewn every day with the "made in Italy" label by an army of 40,000 workers. We may assume the average price per item to be 8 €.[10] Two calculations give approximately the same realistic result: every Chinese worker produces approximately 200 € per day.[11] The total labor cost consists of two components. The first is the direct monetary wage paid to the employee, 20 € per day, as several witnesses reported. Suppose that this part of the cost of labor is standard for Chinese workers, regardless of location. The second most important component is the cost of housing for migrant workers, and the payment of social security contributions and taxes. In Italy, contribution and taxes are high (about 50 % of labor costs) if the labor is regulated. The cost of accommodation is also important because, given the very low wage, workers

[8] Silvia Pieraccini, cit.

[9] «A revival of development would require profound changes which can no longer exclusively and primarily rely on familiar experience, behavioral models, the division of labor, and the integration and innovation that were typical of the former equilibrium. Instead, it requires the conscious construction of a new equilibrium through a deliberate individual and collective action capable of introducing into the economy and into the society substantial innovations consonant with both the local resources which can be activated and with new opportunities of the changed global and local context» (Dei Ottati 2009, 29).

[10] «Shirts 3 €, jeans 7.50 (but negotiable), leggings 2.5, dresses long and light between 6 and 7» (Laura Montanari, La Repubblica Firenze.it, 15/12/2013).

[11] Two billion euro divided by 40,000 workers divided by 350 days per year, gives 214 €. One million items multiplied by 8 € divided by 40,000 gives 200 €.

cannot pay market rates. Again, the cost depends on whether the workers are documented or not. If the workers are documented, the housing costs are high because market rates refer to formal rental contracts for suitable rooms certified as fit for habitation. If workers are illegal, they may be unlawfully housed in insalubrious cellars or overcrowded warehouses, at very low cost. This second part of the cost of labor (housing and taxes) depends, of course, on location. If the work is regular, the cost of taxes and housing is high. If it is irregular, great savings can be made.

Let us introduce a concept of "gross local residual" defined as sales (200 € per day per Chinese worker) minus those production costs that are independent of location:, that is, costs that would be incurred in any other place. Let us assume that these costs are raw material costs, estimated at €10 per day, other overheads €5 per day, and the already mentioned standard monetary part of the labor cost, 20 € per day: a total of 35 € for each day's work. Let us then define a "net local residual" (to be compared with localized costs) as gross local residual minus two costs (if paid): (i) local taxes for the maintenance of logistic infrastructures and services, and (ii) the cost of using the local trading system. Let us assume a quantity of €145/day per worker of these two costs at the limit where all the firms are Chinese (assumed at 57,000 workers) and when they have to pay for the whole logistic complex because the traditional textile industrial district has been wiped out. The net local residual would then be €200 – 35 − 145 = 20 € a day per worker at the limit.

By contrast, the Chinese in Prato pay a limited amount of taxes because of the widespread use of illegal workers in Chinese firms, and they have access to the logistical complex maintained by the residual firms operating in the district. This was the main advantage of the Prato location. It offered an oversized logistical system at almost zero cost to start with. Let us assume, then, a starting net average local residual equal to €200 − 35 = 165 €. We have to imagine that this average advantage will decrease as Chinese density increases and as the former district is displaced. The displacement of traditional firms, in fact, reduces the capacity of the former district to maintain the logistical complex. The Chinese will thus have to pay an increasing cost to maintain the complex, or they will suffer from the inefficiencies due to its progressive reduction.

In Fig. 4.11, *y* denotes the *average* daily per worker net local residual that goes from 165 to 20 going *x* number of worker days from 0 to 20 million (from zero to 57,000 workers) *R* denotes the *total* net local residual.

As far as localized costs are concerned, finally, let us assume they are rents paid for buildings and housing, and the cost of advice and corruption of local agents, essential for a large, mostly illegal settlement of this kind. Let us say *C* denotes the average total of rents and bribes that we imagine increase with the increase in the number of Chinese settlements. The progressive reduction of available accommodation and warehouses, and increased social alarm, make bribes more necessary. The total cost has a component that directly depends on the contractual power of workers, which is an important part of their real wage. This component is the cost of housing made available to workers by the owners of Chinese firms. The low bargaining power of workers implies that this cost component is very low, if not inexistent, and explains the appalling, almost slave-like conditions in which Chines workers live.

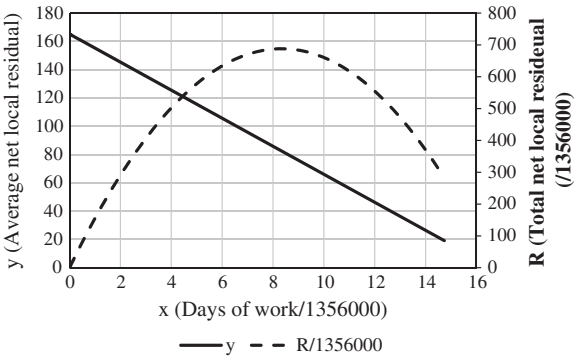


Fig. 4.11 Prato, total and average net local residual

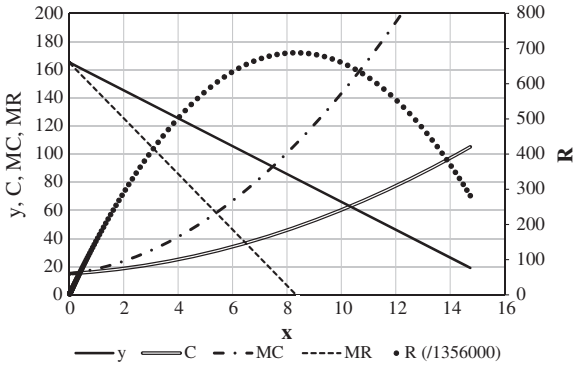
We thus have a complete picture of the relevant variables:

x number of days' work of Chinese people who have settled in Prato (from 0 to 20 million)
R Total localized revenue: $R = 165x - 9.8554x^2 - 0.0033x^3$
y Average localized revenue: $y = \frac{R}{x}$
MR Marginal revenue: $MR = \frac{dR}{dx} = 165 - 2 * 9.8554x - 3 * 0.0033x^2$
C Average cost: $C = 15 + 1.1837x + 0.348x^2$
MC Marginal cost; $MC = 15 + 2 * 1.1837x + 3 * 0.348x^2$

Figure 4.12 shows three possible equilibria:

1. Economically efficient, maximum profit, it should require barriers to entry: $MR = MC$ at $x = 5.4$ (20,900 workers)
2. District and logistic system sustainable, maximum R, $MR = 0$ at $x = 8.3$ (32,000 workers)
3. Maximum district and logistics exploitation, entry totally free, $y = C$ at $x = 10.3$ (40,000 workers).

Fig. 4.12 Prato—costs, and revenues, equilibria



It follows that at costs as low as *C* and without any entry barriers, the exploitation of the districts' economies in the exemplified form of its logistical complex exceeds the sustainability threshold. Chinese settlements have increased to the point of equal total revenues and total costs (i.e. equal average costs and average revenues), further than the maximum profit and beyond the point of maximum average revenue. In order to stop the exploitation at a sustainable point, higher costs would be needed, which would require workers' having greater bargaining power.

This model is applicable to any renewable resource that can remain unproductive if it is scantily used, but can become also unproductive if it is used in excess because of the low costs required for its exploitation.

There are other models explaining possible mechanisms where low wages (and a possible increase in jobs today) hold back development and therefore reduce jobs in the future. They all apply the same principle, however. If you go too far in pursuit of immediate results, this will affect longer-term outcomes. In one classic, vintage model, if wage pressure is weak or absent, it is not worthwhile for entrepreneurs to renew their plants. In this way, however, they lose the productivity gains that could be achieved by means of renewed plants incorporating the most advanced technical solutions (Salter 1960). In another model (Rodrick 1993), entrepreneurs may be presented with the choice between investing in a labor-intensive, less growth-enhancing sector, or in a more capital-intensive, more growth-enhancing sector. The model shows they opt for the first if wages are low.

We may thus conclude by stressing that, under trap conditions, it is highly unlikely that wage flexibility will provide a reliable way out. All that remains is to consider a different strategy for getting out of the trap. To find out what this strategy might be, however, it is necessary to understand more precisely how lack of information prevents optimal exploitation of local resources. One might well think that all that is needed is to *buy* the missing information. If this were the case, involving a new private actor with a specialty for collecting information and providing support to trapped agents for a fee would be sufficient. Chapter 5 will discuss this issue, and we will see why this seemingly simple scheme is destined to failure. We will discover that you cannot buy the required information because it is not a commodity like any other, as the *Greenwald-Stiglitz's theorem* demonstrates. The strategy for getting out of traps we are looking for is more complicated. As Chap. 5 will show, it consists in facing uncertainty and risk and dealing with it rather than attempting to avoid it.

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Chapter 5
Dealing with Uncertainty

Abstract In this chapter we will see that, when uncertainty arises from lack of information about both the state of the world *and* the agents' behavior, a remedy to a lack of experience cannot be bought. We will introduce, then, a more complex trap model assuming that innovation (a way out of the trap) can occur through a process that is unsure and made up of small steps, by way of experiment. Some indications emerge regarding the policy design required to get out of the trap of under-valorized local resources. Intervention should not entail direct public involvement in starting and managing productive activities, nor should it entail providing boundless grants and incentives to private agents. Wage reduction is not a good approach neither. Intervention should be designed with the goal of increasing the difference between the net return of new risky activities and the safe return of traditional ones. The ability to choose the most promising project, however, is not very realistic. The outcome of any new project is uncertain. If this were not the case, there would be no traps to deal with. This leads to the use of cost as a lever rather than selection. Policy makers should provide public goods and services selected from those best able with certainty to reduce costs to those actors who are engaging in new activities.

5.1 Credit and Credit Rationing

In the big push hypothesis, the State was required to intervene for as long as necessary (and nobody knew for how long). The wage flexibility hypothesis called for a drop in wages to the level required in order to get out of the trap, no matter how low. Both these solutions have severe limits.

Considering the nature of the problem at stake, we could propose the remedy of the financial system. In a trap situation, after all, there are always expected *future* gains, even though firms have no idea how many of them need to take action and move in order to effectively exploit an opportunity. It would be natural to think that these firms could pay a bank to anticipate future revenues, thus sharing the

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risk among all the firms that are individually unable to deal with it. The solution would be as simple as buying the information needed.

However, when uncertainty arises from lack of information about both the "state of the world" and the agents' behavior, the *Greenwald-Stiglitz's theorem*—which states that a remedy to a lack of information cannot be bought—holds. Greenwald-Stiglitz's (1986) theorem first defines a constraint Pareto inefficient state as a state of allocation of resources in which it would be possible to make one individual better off without making any other worse off by means of allowed (general and impersonal) rules. It then states that there is indeed a link between imperfect information and constrained Pareto inefficiency. Typically, imperfect information affects the buyer of a good or service whose features he or she can only discover after having purchased it, while the seller knows the features before selling it. As the buyer knows that the seller has better information and can use it against him, a useful effective exchange of information is impossible. The buyer will never know if the seller is telling the truth or not.

Countless personal examples as well as a number of researched examples show a link between imperfect information and incomplete markets. One of these examples relates to banks. Credit rationing often prevents good ideas and projects—that would be able to repay the required investments—from being implemented. This means that credit risk-sharing is not the most effective way to get out of trap. It is useful to analyze why it is not effective because it allows to identify what conditions may make it effective.

5.1.1 Asymmetric Information

Credit rationing is linked to asymmetric information because it produces both *adverse selection* (a pre-contract agency problem) and *moral hazard* (a post-contract agency problem). These problems create an "agency dilemma". There are inherent difficulties involved in motivating one party (the borrower) to act in the best interests of another party (the bank) rather than in their own interest against the other. Adverse selection takes place because borrowers who know that they cannot be detected *ex ante* and who are either unwilling or unable to repay their loans, are more likely to receive credit. Moral hazard takes place because, knowing that their effort cannot be observed, borrowers may use funds in ways that are inconsistent with the interest of the lenders once they have received a loan (Stiglitz and Weiss 1981). That is, they are tempted to use their own funds for more serious and promising activities and the borrowed money for less serious initiatives (but perhaps the most striking and prestigious) in which there is a high risk of waste.

Communication does not solve these problems. Since the source of information is the party with the greatest interest in communicating something favorable, the party receiving the information should rationally be wary of the possible negative consequences. This is the why it is impossible to remedy lack of information by buying it. Even a third party commissioned and paid to gather information never provides an absolute guarantee of objectivity.

On the other hand, agents involved in dealings affected by lack of information, indirect defend themselves. Lack of information tends to make money-lending institutions raise the amount of collateral they require. Banks expect the worst borrowers to seek their support and they protect themselves by demanding additional guarantees, beyond those related to the project itself. This leads to a *self-fulfilling prophecy*. Owing to the behavior of banks, local economic initiatives are based largely on the support of families and the informal credit sector, which provide credit and forms of insurance in case of difficulty. However, this encourages banks to believe that customers who turn to them—rather than to families, friends, and the informal credit sector who know them well—must be the worst borrowers. This self-fulfilling prophesy nips any economic resourcefulness in the bud. Banks will not offer loans for new, technologically advanced projects even when they are economically viable. They will only offer loans when the borrower's guarantees are more than proportionate to the risk involved, that is, when there is low risk and low growth potential.

5.1.2 Some Empirical Evidence

One symptom of credit rationing is financial exclusion. Let us therefore consider research results concerning financial inclusion, and attempt to identify the factors behind borrower's access to formal financial institutions. Far-reaching research using data for 123 countries and over 124,000 individuals, tried to understand what factors were correlated with the use of formal bank accounts. «We find that greater financial inclusion is associated with a better enabling environment to access financial services, such as lower banking costs, greater proximity to branches, and fewer documentation requirements to open an account» (Allen et al. 2012, 34). These factors can be considered costs. Access to credit could thus be considered absent where its cost is high in relation to the ability to pay for it. Yet the "greater proximity to branches" variable could also indicate another factor that facilitates access to credit. That is, a bank's better understanding of its customers owing to the proximity of a branch. This factor entails *knowledge and information*, and therefore suggests that financial exclusion, and thus credit rationing, also arises from a lack of information.

We may consider an econometric exercise showing that signals of this mechanism are detectable even using data at country level. The 2011 Global Findex data for 164 developed and developing countries takes the frequencies of loans originating from family and friends as a credit rationing proxy. The percentage of adults originating a new loan from family and friends, out of the total of adults originating a new loan (from family and friends, and from a bank), is shown in Fig. 5.1 in relation to the percentage of adults with savings in a financial institution. There is a significant negative correlation between these two variables, suggesting a probable credit rationing in those countries where fewer people keep their savings in a bank. This latter variable will depend in part on a

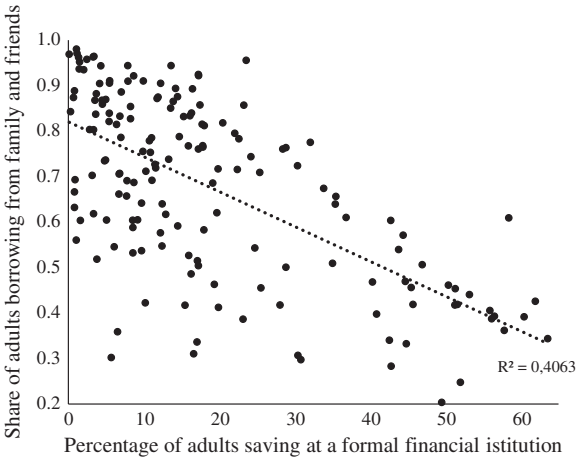

Fig. 5.1 Share of informal borrowing correlated to the share of formal saving, 164 countries 2010–2011. *Source* Figure obtained by processing data from Global Findex data-base 2011 (http://datatopics.worldbank.org/financialinclusion/)

low general ability to save, in part on the weakness of the banking system, and in part on an information factor. The mutual information exchange among banks and customers, in fact, varies greatly, depending on the characteristics of the banking system, including the organization and territorial distribution of its branches.

We can make a three equation system assuming that the percentage of adults originating a loan at a formal financial institution negatively depends on borrowing from family and friends (first equation). Informal borrowing negatively depends on adults' percentage saving at a bank (second equation). This last variable depends positively on total savings (percentage of adults saving anyway) and on percentage of adults using a bank account for business (third equation).

These results (Table 5.1) indicate that comparing different countries, the use of banks to deposit savings is 1.1 % points higher with each point increase in the

Table 5.1 System estimations' results, dependent variable "Loan from a financial institution in the past year (% age 15+)", cross-country, 164 countries 2010–2011

Independent variables	Coefficient of elasticity[a]	t-Statistics	Probability[b] (%)
Constant	+1.68	+10	0.01
1. Loan from family and friends % age 15+	−0.37	−4	0.1
2. Savings at a financial institution % age 15+ (effect on 1)	−0.21	−5	0.01
3. Saving any money % age 15+ (effect on 2)	+1.10	+10	0.01
4. Account used for business % age 15+ (effect on 2)	+0.58	+11	0.01

[a]Percentage change in the dependent variable (Loan from a financial institution in the past year, % age 15+) divided by the percentage change in the dependent variable calculated by regression on logarithms

[b]Significance level at which the hypothesis that the elasticity coefficient is zero is rejected

overall capacity of saving (which depends on per capita income). This use is also 0.6 points higher with each point increase in the use of a bank account for business (which also depends on the development level). The use of banks for deposits, in turn, affects the use of informal loans to the extent of 0.2 points less per percentage point. The use of informal loans ultimately reduces the use of formal loans to about 0.4 % points each. This last result indicates the existence of credit rationing due to lack of reciprocal knowledge between banks and people.

5.1.3 A Simulation

An in-depth analysis is useful to demonstrate out the link between information asymmetries and credit rationing. This analysis will reveal the conditions under which it can be assumed that credit rationing is avoidable. Let us consider a numerical exercise built to simplify the explanation but coherent with Keiding's (2013) analysis, while taking into account Arnold and Riley's (2009) model. Let us assume a given set of 650 project-investors, each requiring the same loan, let's say 1 unit of money. The bank has a supply function of loans in relation to the *bank's yield* (π), a function that we assume monotonically increasing (Fig. 5.2):

$$0 \leq S(\pi) \leq 650 \mathrm{S}' > 0$$

If the bank knows the risk of insolvency of each investor $(1-q_{\mathrm{i}})$ i = 1… 650, will charge an interest rate equal to the reference rate on the loan without risk (r) divided by the probability of regular payments that is one less the probability of default:

$$\frac{r}{1-1-q_i} = \frac{r}{q_i} \tag{5.1}$$

Since from each investor the bank will get:

$$q_i \frac{r}{q_i} = r \tag{5.2}$$

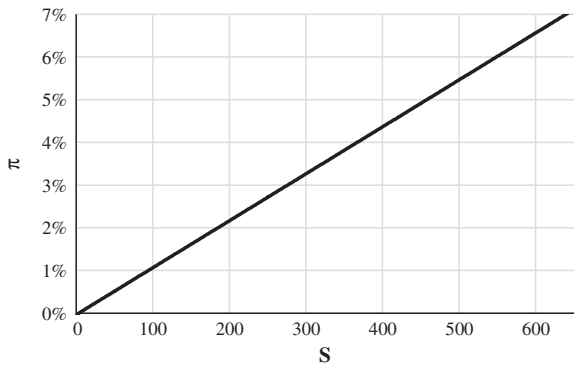

Fig. 5.2 Credit supply

The bank's yield from each project-investor will be:

$$\pi = r \tag{5.3}$$

And the bank's loan supply will be a function of r.

Let us suppose instead that the bank does not know the $1 - q_i$ default probabilities, due to asymmetric information. Its loan supply will still be an increasing function of the bank's yield, but this will no longer be equal to r. For each r, the investors' behavior determines the bank's yield. This is detected by the bank's day by day accounting for gains and losses.

Let us order the 650 projects-investors according to their presence in the set that requests funding at each level of the interest rate required by the bank. With a very low interest rate near to zero, all 650 projects will request funding. Then, increasing the interest rate, projects with little or no risk will come to the fore. Subsequently those with limited risk will emerge, later, those with average risk, and so on. At a very high interest rate, very few risky projects will remain. This gives rise to a distribution of probability to pay (q_i) of each of these 650 projects arranged in a way out order. However, we must distinguish between at least two cases depending on the rapidity with which the marginal probability of default increases with the interest rate. As we will see, this difference will have a critical impact on credit rationing.

Adverse selection and moral hazard act to delay the exit of projects with high default probability. For the opportunistic investor, who has already planned to pay only a few debt installments (adverse selection), even a high rate of interest may be too low to constitute an adequate deterrent. The same is true, to a certain extent, for the moral hazard concerning those borrowers who do not exert much effort in pursuing project outcomes. We may assume, therefore, two different trends in the probability distribution $q_{i,}$ depending on the number of bad borrowers among the whole set. These are the two cases we will deal with: q_i trend is related to *many bad borrowers*, q_i* is the trend relative to a *smaller number of bad borrowers*.

The little recovery at the end of the probability distribution shown in Fig. 5.3 is explained by considering adverse selection and moral hazard together. At very

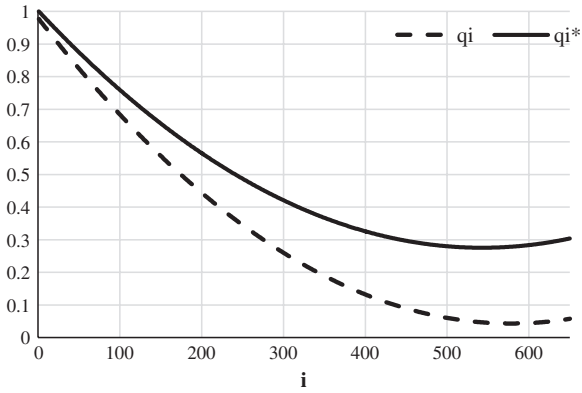

Fig. 5.3 Probability to collect the debt service on the part of the bank from every project-investors ordered from the first to the last leaving the demand for loans when the interest rate is creasing

high interest rates, close to the maximum, risky projects presented by opportunistic investors come out too. Indeed, taking adverse selection and moral hazard together, we have to consider that several borrowers who have no intention of working hard to pay back interests and debt, will prefer not even to ask for the loan if the interest is very high. Paying back even a few installments may be too high a cost for them. At that point only very objectively risky (with high return if successful) projects remain. At the end of the probability distributions, as Fig. 5.3 shows, there is a little recovery in the probability loans will be re-paid (Arnold and Riley's 2009).

There are many causes for the difference between q_i and q_i*. A less risky portfolio (q_i*) may be the result of a reputation mechanism whereby, for instance, borrowers are identified for future purposes. A similar result might also be reached by tacit community surveillance whereby a small community defends a local bank's the ability to make loans as if this were a common good. Micro-credit initiatives often use the same tools. Jayaraman and Kothari (2013, 9) found evidence to link firm-specific information made available to banks and bank's risk-taking.

All these cases, however, are abatements in the lack of information hypothesis. A bank demanding significant collateral also reduces the riskiness of loans, but in this case credit rationing takes place *ex ante*. However, besides these considerations on the different probability distribution of payments owing to greater or lesser information asymmetry, and to *ex ante rationing*, we should also consider when and how those default probabilities enter the algorithm determining banks' loan supply. It does so when the bank is *risk averse*, namely if the bank prefers the amount of money π in hand rather than the promise of amount $\pi = \mathrm{x}q_\mathrm{i}$*, where x is an amount of money and q_i*, the already defined probability. If the bank is *risk-neutral*, then π and xq_i^* are indifferent. We can thus assume that q_i* could represent both the case where there is less lack of information and the case of risk neutrality.

In this way q_i represents the case of higher lack of information and risk aversion. By summing the products of probabilities and interest rates of the projects at an increasing rate of interest, and dividing by this whole, we obtain the relationship between interest rate (r) and average unit bank's yield (π or π*, depending on q_i or q_i*), as shown in Fig. 5.4 where by assumption interest rates go from 0 to 20 %.

$$\pi(r) = \frac{\sum_{i=1}^{n} rq_i}{n(\pi)}; \quad \mathrm{n} = 1 \ldots 650 \tag{5.4}$$

$$\pi^*(r) = \frac{\sum_{i=1}^{n} rq_i^*}{n(\pi)}; \quad \mathrm{n} = 1 \ldots 650 \tag{5.5}$$

There are two major characteristics of the curve π (more risky portfolio or bank's risk aversion) compared to π*. The π curve is much lower, indicating lesser yields for the bank at the same nominal interest rates. Secondly, it shows a strange shape, first increasing, then decreasing, and then increasing again. As pointed out by Keiding (2013, 6), this shape is the consequence of the assumed pooled adverse selection and moral hazard as well as the little recovery at the end of the probability

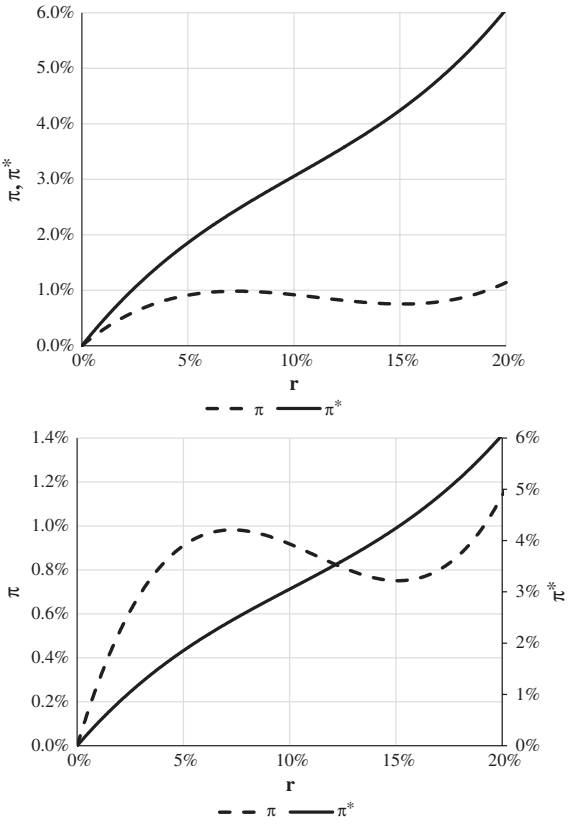

Fig. 5.4 Bank's yield at increasing interest rates (in the second graph, for greater evidence, the two curves are superimposed representing them on two different scales. This will also be done in the following graphs)

distribution of debt collection service. A very low rate of interest will give a low π given the minimum cost of credit that all risky and unrisky project-investors have to pay. If r increases, some investors with relatively low risk drop out, leaving the bank with a more risky portfolio. Until the effect of the rising interest rate exceeds that of the increased probability that loans will not be repaid, the yield for the bank will increase. However, at some point, it will start to decrease, when the quantity of loans granted and not repaid will result in a loss greater than the increase in revenue from higher interest rates on repaid loans. Once they reach a minimum, the expected gains will start to grow again because further increases in the interest rate no longer increase the already very high probability of losses.

Figure 5.5 shows the demand curves for loans, where Q is quantity from 0 to 650, and D represents demand loans in the case q_i, while D* denotes demand for loans in case q_i*.

The last step, now, is to add the loans supply, and examine cases where there is or there is not credit rationing.

The equilibrium of the credit market without any rationing, even in case of imperfect information, is 300 loans offered and demanded at 3.2 % unitary yield

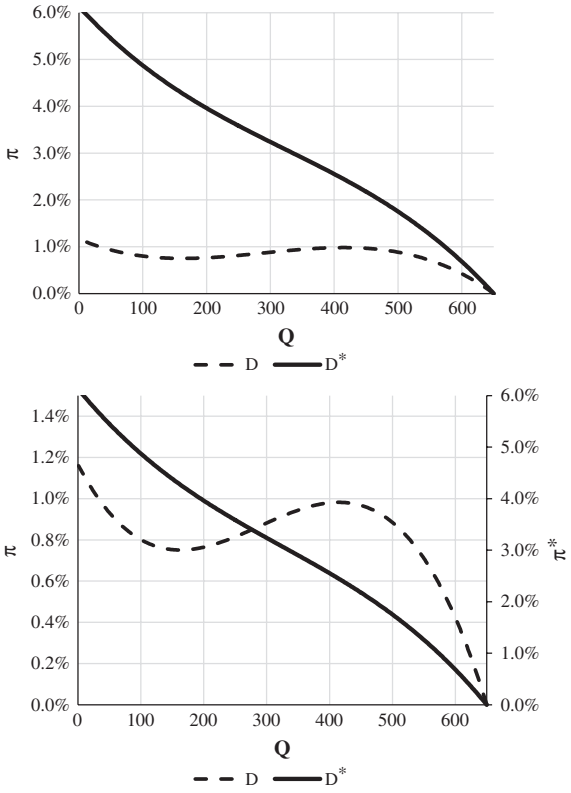

Fig. 5.5 Demand of loans function of the bank's yield

(corresponding to 8 % interest rate). This is the crossing point between D* and S in Fig. 5.6. This equilibrium avoids any rationing because at 3.2 % yield (8 % interest rate) there is not another level of demand for loans.

The condition depicted by D and S is completely different. With a more risky portfolio or with risk aversion, the equilibrium of some 70 loans demanded and offered is situated at a unitary yield of 0.9 % (interest rate 18.5 %). Credit rationing occurs because at the same yield 0.9 % and interest rate 18.5 % there are other possible demand levels. In this exercise two: 300 (the same as in the case without rationing), and 500. These higher quantities of loans are not spontaneously reached. The only possibility to avoid credit rationing requires an even lower—or conversely much higher—supply function. The first is the case of almost completely lacking credit supply because banks do not have funds and nobody is rationed; loans are simply very scarce and at a very high cost. The second case occurs when the bank has funds at low cost, such as, for example, in the period of exceptionally strong liquidity in the U.S. before the financial crisis showed its first signs in the summer of 2007. In this second case, the interest rate is so low that even borrowers at low risk apply for loans, and thus balance the presence of high risk or opportunistic loans. Banks, on the other hand, have so much liquidity in this scenario that they have every interest in granting whatever loans are requested.

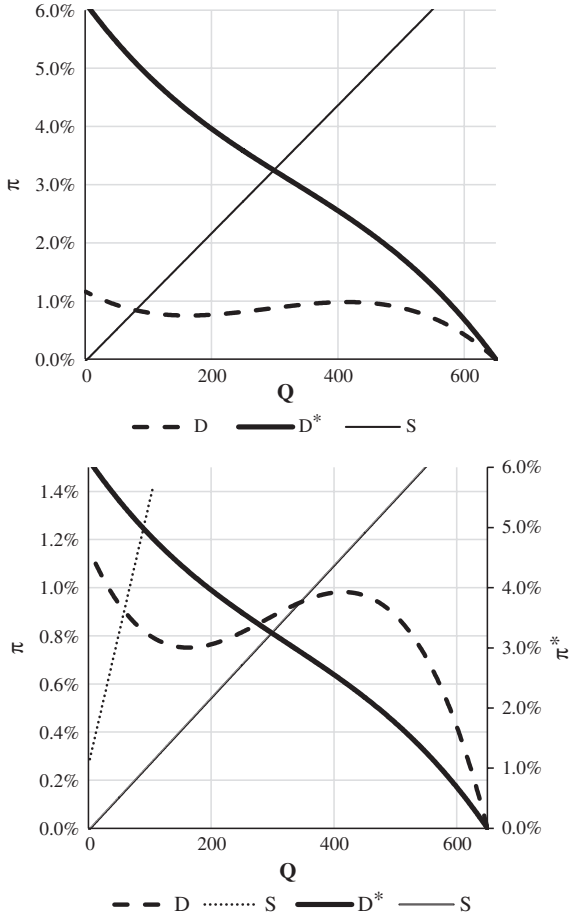

Fig. 5.6 Credit market

Between these two extreme cases lie all those situations where credit rationing takes place. Interest rate levels are *not able to exclude nor to balance* the presence of opportunist loan applicants. In this case, if the loan supply is lower than demand and the interest rate increases, the return to the bank can easily decrease and not increase. By increasing the interest rate, in fact, less risky borrowers and less opportunists come to the fore, and the number of those who are less likely to pay back their loans increases. By increasing the interest rate, therefore, the bank does not raise the supply. Rather, it decreases it.

In this intermediate case, when credit rationing occurs, there is nevertheless the chance to avoid it. Credit rationing disappears when the bank is *risk-neutral*. In this case, the crossing point between S and D*, as seen, will be at 300 loans, 3.2 % yield, interest rate 8 %.

There are then two crucial questions that arise. What does the attitude towards risk depend on? Is it possible to identify the environmental and subjective conditions that allow an actor (the bank) to take risks *as if it were* risk-neutral?

5.2 Risk Taking

The conditions that shape the ability and willingness to implement risky activities have been studied extensively in different domains: individuals and families, small firms and large firms (domestic and multinational), in financial and insurance operators, and others. Research results are different in the different fields and some issues are still controversial. One example is the question whether competition drives operators to take more risks or to avoid risk.[1] However, some conclusions tend to recur, indicating that they probably capture some firm points.

5.2.1 Stylized Facts

Attitudes towards risk are context specific, based on economic and regulative aspects, and they also depend on historical, cultural, and anthropological conditions. All things being equal, a *pluralistic environment* with many agents engaged in different activities promotes more risk-oriented behavior compared to a more *homogeneous environment*. There are two effects of diversification on risk-taking. The first is a portfolio effect. The availability of diversified investment opportunities or activities can reduce the level of risk across all agents and thereby increase the possibility of pursuing very risky activities (Goetz 2012). The second effect stems from the fact that the inclination to take risks depends on familiarity with the issue at stake. This is probably the reason way a wealthy person may feel comfortable in taking financial risks, having had many opportunities to become familiar with different kinds of market risks and learn how to cope with them.[2] An environment in which diversified activities are ongoing, provides an opportunity to examine and learn from varied experiences. In an environment like this, a specialized agent (a bank) may discover better opportunities and avoid certain difficulties and may thus be more willing to take risks than an agent in a more homogeneous context.

[1] In the financial field, «until recently, the general consensus among policy makers and researchers has been that market power gives banks proper incentives to behave prudently. […] In recent years, however, several theoretical and empirical studies have challenged the view that monopoly power mitigates bank risk taking, instead arguing that higher competition among banks leads to lower levels of bank risk. […]. The competition-bank risk taking nexus has been extensively analyzed in the theoretical banking literature. The predictions emerging from the theoretical models are ambiguous, however» (Kick and Prieto 2013, 1).

[2] This explanation seems much better than the traditional hypothesis of diminishing marginal utility of wealth (Rabin 2000).

This account contributes to the debate on the merits of diversification. In the Jacobs frame, in fact, more diverse industrial activities in close proximity foster opportunities to imitate, share and recombine ideas and practices across industries. The merits of specialization also form part of the debate. In the Marshall, Arrow, and Romer model, knowledge spillovers only occur among firms of the same or similar industrial sector. Beaudry and Schiffauerova (2009, 318–319) find reasons to believe that while diversification and specialization lead to both positive and negative effects, the negative effects related to diversification are generally less serious than those associated with specialization. Another review finds methods of reconciling specialization and diversification by considering specialization a way to diversify (Boschma and Frenken 2011, 297).

5.2.2 From Tautology to the (Likely) Right Approach

Applying these observations to our problem of getting out of the trap through credit and risk-sharing, however, we fall into a *tautology*. If the way out of the trap requires diversification and the trap itself arises from a lack of diversification, this way out would actually presume that there was no trap. We defined under-valorized areas in opposition to valorized ones, precisely indicating that in valorized areas there are no traps preventing resources from being exploited. We outlined that this was because their transfer from less productive to more productive uses takes place continuously because the manufacturing base has a wealth of diversified activities and it is easy to disinvest and reinvest.

However, the idea that one activity helps another through risk sharing, and learning about the true extent of the risk, is still useful as it can be declined in a dynamic sense, i.e. through an innovative process that develops *in steps*.

It is thus necessary to adapt the model presented in Chap. 4 in order to make it less simplistic.

5.3 A More Complex Trap Model

5.3.1 By Way of Experiment

The simple model previously described configured only actions taking into account *all* the costs of organization adaptation. For greater realism let us dismiss this hypothesis and assume that innovation (a way out of the trap) can occur through a process that is *unsure* and made up of *small steps*, by way of

experiment[3] in a *separate venture* supporting only limited costs in adapting its organization. This "strategic niche management (SNM)" was frequent in innovation processes as it is able to facilitate «innovation journeys […] by creating […] protected spaces that allow the experimentation with the co-evolution of technology, user practices, and regulatory structures» (Schot and Geels 2008, 537; Seravalli 2011). These experimental steps may or may not be successful. If they are successful, the result will consist in risk reduction in the subsequent steps. If they are unsuccessful, there will be a loss. This will reduce the savings available to make risky investments, and will be a defeat in the ongoing conflict against those who do not want change.

Let us go back to our example of graduates in mathematics taking badly-paid jobs in teaching, who could be better employed to support innovative activities in firms. Owing to the high costs of adaptation and conservative drags, as we saw, the mathematics graduates cannot move from the traditional to the modern sector if not in large numbers in order to make *sure* that positive externalities are able to balance the costs and the resistance to change. It seems realistic to assume, contrary to what we established in the simple model presented in Chap. 4, that it would be fairly easy for a single firm to hire a single graduate in mathematics as an experiment by implementing a *separate* organizational space. If it succeeds, additional earnings are created that can be saved and used in part to fund some other experiments in recruiting mathematics graduates. Moreover, this would be a small but significant victory for those who, in the Academic Senate, opposed the reduction of resources for the faculty of mathematics. Lastly each step teaches something to both worlds, business and university. What has been learned in one step allows another step to be taken. We could even assume that the first experiments give rise to an *ex post* advantage for firms, even if they go wrong, because graduates in mathematics are in any case smart people able to repay the wages that they earn even if they are not optimally employed, and because adaptation cost are very low. However, when several experiments do not succeed, a step backwards follows as there is an economic loss to be absorbed. The step backwards is a victory for conservatives. The effect of good or bad luck would be neutralized when experiments have allowed the learning process to be completed and a certain number of graduates has been successfully employed in the firms.

This new set up of the trap frame essentially corresponds to Acemoglu and Zilibotti's model (1997) that we have already used in the Appendix of Chap. 2, in relation to size and growth in European cities. This model leads to a way out of

[3] This term we use taking it from the Republic of Venice history. The "Serenissima" adopted this strategy continuously for centuries (from the fourteenth century to the end of the eighteenth) in regimentation of waters, constant threat to the lagoon always not completely understood despite continuous studies, and coined this expression. By way of experiment assumes the significance of tentative suspension of interpretations established to allow something new, even if apparently senseless, being made very clear by "La Magistratura delle Acque" (waters' Authority) that these rules and interpretation were by no means abolished nor superseded (Bevilacqua 1998, 42–44).

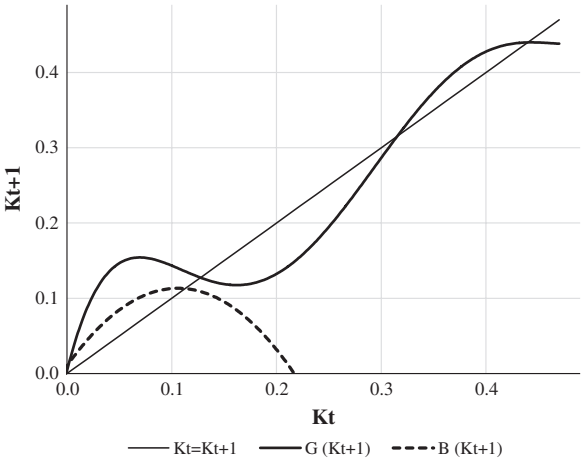

Fig. 5.7 The Acemoglu-Zilibotti model's trap

the trap of resource under-valorization that avoids the shortcomings of the other ways out. The results of the model are fundamentally linked to three assumptions, already pointed out in the Appendix to Chap. 2. These are: (1) savings can be used to make risky investments that have higher expected returns or to buy a safe asset with a lower return; (2) different projects, made possible by risky investments, are imperfectly correlated; (3) the allocation problem is not trivial (all agents invest an equal amount in all projects and diversify all the risks) because there is a minimum size requirement for each of the projects that entails a trade-off between insurance and high returns. Taking the Acemoglu and Zilibotti suggested values of the parameters (Acemoglu and Zilibotti 1997, 729) and the risk aversion assumption (Gancia and Zilibotti 2005, 156), Fig. 5.7 can be obtained showing the stock of the economy's capital dynamics.

In the figure, G(Kt + 1) and B(Kt + 1) denote the stock of capital at time t + 1 in case of "good news" and in the case of "bad news". At the very beginning, the ease of the first experiments allows capital growth in any case and—obviously—higher capital growth in case of good news. Soon enough, however, in case of bad news, the growth stops and a stable steady state is settled (at around Kt = Kt + 1 = 0.12). This is the trap caused in this model, as in the previous credit rationing model, by the combination of risky investments and risk aversion. But now a way out of the trap emerges clearly.

5.3.2 Increasing Risky Investments' Return

The way out of the trap is provided by *increasing the difference between a risky investment's return and a safe investment's return*. With this move, we obtain Fig. 5.8 (where that difference has increased from 0.1 to 0.2).

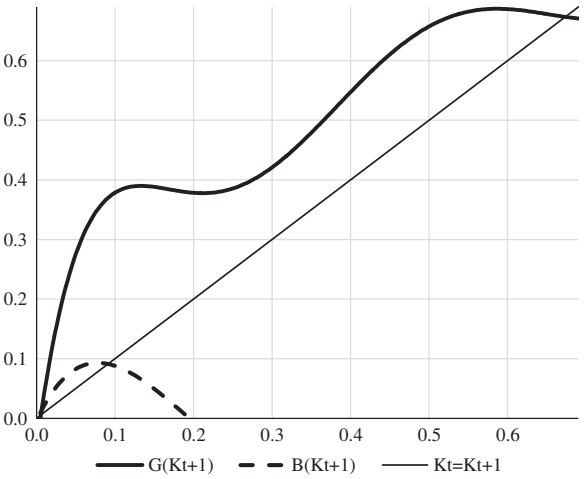

Fig. 5.8 The way out of the trap

Below Kt = 0.09 the economy will surely grow, between that point and Kt = 0.2 it is still exposed to fluctuations and set-backs depending on good news or bad news. But the trap is eliminated. Despite the fluctuations, the economy can reach the point Kt = 0.2, where the take-off beyond which the bad news no longer has effects is situated.

5.4 The Policy Design

In conclusion, there are three results concerning the policy design required to get out of the trap of under-valorized local resources.

1. Intervention should not entail direct public involvement in starting and managing productive activities nor should it entail providing boundless grants and incentives to private agents. Often this policy (big push) produces perverse behavior that makes rents permanent due to public intervention.
2. Wage reduction is not a good approach. If forced, it may lead to negative consequences on productivity and on the over-exploitation of renewable resources.
3. Intervention should be designed with the goal of increasing the difference between the net return of new risky activities and the safe return of traditional ones.

5.4.1 Emerging Directions

Increasing the net return of new activities in relation to that of safe traditional ones requires new activities to be selected carefully. They must be the most promising of the pool. This sounds like a strong argument in favor of the main peculiarity of

place-based policy. Effective selection requires deep understanding of the local situation and its opportunities. People are needed with different experiences, external to the local reality, who are able to identify which option has greater trade value.

The ability to choose the most promising project, however, is not very realistic. The outcome of any new project is uncertain. If it were not so there would be no traps to deal with. The inevitable consequence of uncertainty concerning the revenue of innovative projects (while there is no uncertainty about the revenue of traditional activities) weakens this approach.

It leads one to use *cost* as the lever rather than selection. The cost lever is probably more effective, since selection is always subject to uncertainty. Public policies should aim primarily to reduce the *value* and *uncertainty* of the cost of new activities in order to support the difference between their expected uncertain revenues and their expected costs. Policy makers should provide public goods and services selected from those *best able with certainty to reduce costs* to whom is engaging in new activities.

This formula contains two directions and suggests a reflection.

- On one hand, the very common indication concerning local *specific* public goods is confirmed. In our example of mathematics graduates, they will consist in infrastructures and services for dialogue and collaboration between universities and business, which, for instance, the "triple helix model" insists on.[4] Services for start-ups will also be useful, imagining that especially new businesses, rather than old, will be capable of making innovative choices even in staff recruitment.
- On the other hand, a strong indication emerges in favor of local public goods and services of *general utility*: health, security, justice, housing, school, transport and communication.[5] There are two reasons why these services, if

[4] There exist even an international triple helix association. «The Triple Helix Association intends to promote analyses and studies on the interaction between universities, firms and government aimed at translating academic models into practical achievements also by supporting international exchange of scholars, organizing international symposia of relevant scientific interest and assisting the education of students, scholars and practitioners in its areas of interest». (http://tha2013.org/tha/index.php/tha/index/pages/view/triplehelix).

[5] Some contributions (Kemmerling and Stephan 2002, 2008; Psycharis et al. 2012), find, indeed, a positive relationship between general public investment and growth of local production activities. «Several key empirical findings emerge from our analysis using a panel of large German cities for the years 1980, 1986, and 1988: public capital is a significant input for local production […], evidence of an endogeneity bias of [public] capital estimates in a production function framework as well as evidence of reverse causality running from output to [public] investments is weak» (Kemmerling and Stephan 2002, 422). «We study the determinants and productivity effects of regional transportation infrastructure investment in France, Germany, Italy, and Spain. […]. The evidence shows that road infrastructure positively contributes to regional production» (Kemmerling and Stephan 2008, 1). «Using a new database of public expenditure per region for the period 1978–2007, it proposes a model which captures not just the impact of public investment in Greek prefectures, but also the spillover effects related to the existence of externalities from neighboring regions. The results point to a positive long-run impact of public investment per capita on regional economic growth—but not on convergence—which also generates considerable spillover effects» (Psycharis et al. 2012, 1).

they are efficient and of good quality, serve the purpose of supporting new activities that use local resources better. The first is that agents of innovation are particularly exposed to the risk of losses since their activities may or may not go well. Thus, public welfare services that effectively guarantee against general risks (disease, crime, difficulty in finding housing and the associated cost, difficulty in finding good schools for their children, transport and communication malfunction) have a higher value for these agents than it does for agents who engage in risk free activities. The second reason is that these agents often come from other places and do not have the same network of social relations as the locals do.

- As a reflection, it might seem that in the end we are back to policies for public services recommended by the spatially-blind approach. This would be curious after presenting and following the analytical path that supports and specifies the policies of the opposite place-based paradigm.

It might seem that this is the case, but it is not. The public utility services in the spatially-blind perspective are the *basic* ones needed to contain the mobility costs of people without a job or with a poorly paid job who move in order to seek a job or a better paid job. The implicit idea is that once these general basic services have been provided, government intervention has fulfilled its task. By contrast, in the place-based perspective—here intended as measures to increase the net return of innovative activities by lowering the cost of living for innovators—the condition is necessarily *dynamic*. Required public services will grow in quantity and quality as they are used to support a growing volume and an increasing value of innovative activities. The place-based perspective also accentuates specificities in public service provision. In this paradigm they should be tailored to the specific place's peculiar conditions and needs, whereas spatially-blind services are general and the same everywhere.

In the geography of Italian small and medium-sized manufacturing firms, the industrial district of Prato was one among the approximately seventy districts identified. In the Emilia area, for example, there were and still are various districts that have had better and even longer life. In particular, in the area of Reggio Emilia a very significant mechanical sector has grown, which has always maintained a remarkable capacity for innovation. It is interesting to note that, in Reggio Emilia and its province, we find the best healthcare system in Italy and the nursery schools are the best in Europe. Policy makers in Reggio Emilia, a rural province until almost the eve of World War II, never thought that it was part of their job to interfere in business decisions, much less to guide them. They have always thought that their job was to continue to improve public services.

This indication in favor of dynamically conceived public services emerges again in the light of the debate about "creative cities". In fact, critical observers of fashion recipes note that there are quite remarkable mistakes made believing that it was easy to have important development results putting in place policies for the "creative city" (Evans 2009). These errors have been made neglecting the crucial importance of a good supply of public utility services, essential to the quality of city life throughout the year, focusing instead on less demanding

initiatives useful only to "creatives". This harsh judgment might be dismissed, considering that knowledge-workers' residential choices, in balancing classical location factors (such as education, transport, housing services), and a lively, culturally rich cosmopolitan environment, may well prefer the latter, as stressed by recent literature aroused by Florida's (2002) book. However, Frenkel et al. (2013) conducted research on a sample of 833 people working in high-technology and financial business services in the metropolitan area of Tel Aviv to ascertain exactly what factors are to be considered the most important among the classic ones and those indicated by Florida and subsequent literature. They conclude: «[…] contrary to the conceptual postulate by Florida (2002) while knowledge workers' lifestyle and cultural amenities are important, the classical location factors continue to be the dominant factors» (Frenkel et al. 2013, 39). It seems that to attract knowledge workers, a city government should therefore be able to provide efficient services and resist housing speculation, which will be difficult if choices geared primarily to «urban vibrant environment, cultural amenities and lifestyle» are made. The reasons are probably the ones we have mentioned. People engaged in new modern activities are more prone to taking risks and often do not have the support of traditional social relations networks. They thus derive particular benefit from efficient public services that protect them from adverse events.

5.4.2 The Political Strait of Place-Based Policies

This is indeed the most recent and authoritative indication provided by the literature, which has identified three strategies for *local* development. The first is a non-policy such as the one following the World Bank's spatially-blind approach. The second concerns the improvement of general living conditions. The third recommends direct interventions in support of specific production activities such as «direct government grants to support any number of activities; income tax credits […]; establishment of state-sponsored venture capital funds for new businesses generally or those in certain sectors […]; enhanced support of university research or teaching in specific fields where commercialization opportunities are perceived to be significant; the construction and maintenance of "incubator" facilities […]; and the provision of coaching and mentoring services for entrepreneurs» (Acs et al. 2008, 3–4). These experts understand the reasons for the third strategy and do not detract from it, but they are clearly in favor of the second.

5.5 Concluding Remarks

At the beginning of the book, we quoted Rodrick's essay: *Goodbye Washington Consensus, Hello Washington Confusion*. This title indicated the failure of a powerful widespread recipe to support economic growth, as well as the dearth of

shared proposals that ensued. One suggestion emerged: keep a humble attitude by giving up the idea of one single recipe, and adopt a case-by-case approach. At the end of the book, we quote another essay title mentioning consensus: *Entrepreneurship and Urban Success: Toward a Policy Consensus*. This essay is a "manifesto" propounded by ten academics from several American and Canadian universities (George Mason, Harvard, Ewing Marion Kauffman Foundation, Pennsylvania State, Carnegie Mellon, Syracuse, Rotman School of Management Toronto). We can probably say that there is something more than the disarming "confusion" reported by Dani Rodrick. A new consensus is perhaps emerging, no longer based in Washington. It does not propose a new recipe, recognizing that «there are no silver bullets or one-size-fits-all policies». It supports a place-based approach, recognizing that local and external forces should interact and design interventions tailored to their context. These interventions need to provide public goods and services of general utility with the aim of sustaining the *net* returns of innovation.

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