Econ Polit Ind (2016) 43:291–304
DOI 10.1007/s40812-016-0046-5

Industrial policy in Italy and Germany: yet another look

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Received: 15 May 2016 / Revised: 9 June 2016 / Accepted: 14 June 2016 /
Published online: 29 June 2016
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Abstract Italy, like most European countries, has experienced stagnant GDP growth in the past years. In a recent paper, Lucchese and Nascia (Industrial Policy and technology in Italy, 2016) argue that the decline in the Italian industry could be traced back to the financial and the Euro crises in 2007/08, and is mainly caused by a fall of domestic demand, which itself is rooted in an austerity policy. The authors argue for a paradigm shift in innovation and industry policy away from the horizontal European approach to a more vertically oriented approach led at the national level. In this paper we try to contribute to this discussion by providing another look at the data which reveals a different cause of the loss of competitiveness. In contrast to Lucchese et al., we argue for a more disaggregated level of industrial and innovation policies to foster and improve sunrise sectors and regions. We underpin our arguments with examples from Germany, which recovered from the "Sick man of Europe" a decade ago and has emerged as one of the most competitive countries.

Keywords Public innovation policy · New venture creation · Knowledge spillovers · European integration

JEL Classification L26 · O32 · O38

We are grateful for critical comments from Stefano Paleari an anonymous referee and the editors of this volume. All remaining errors are of course ours.

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1 Introduction

Like most European countries, Italy has experienced stagnant GDP growth precipitated by the financial banking crisis of 2007 and the long-lasting Euro crisis of 2008. Despite small glimmers of hope, the stagnation is unlikely to end quickly. Several initiatives have been launched both by the European Union and national governments to stimulate industrial production, with only modest success. This motivated Lucchese and Nascia (2016) to advocate a paradigm shift in industrial and innovation policy for Italy, shifting the European horizontal approach towards a national and vertically focused approach, and by empowering the national government. The proposal offers a fruitful and critical review of different aspects and measures of industrial policy in Europe and Italy and initiates an open and necessary discussion. The authors offer their opinion as a counterpart to the recent industrial policy approach in Europe with a clear message: less market (and Europe) and more hierarchy, i.e. national governmental policy. This claim reflects a recent trend in the European Union where countries try to turn their back on the open and market oriented policy of the supranational and European level towards a more centralistic and national government policy to support and protect domestic interests and industries.

While some European countries have succeeded in reviving their economies to cope with the challenges of globalization and the technological change like Germany, which was widely referred to as the "Sick man of Europe" little more than a decade ago (Audretsch and Lehmann 2016), others are still suffering. In this paper, we argue that like Germany, Italy could transform itself from the "Real sick men of Europe", as titled by the *Economist* in 2005,[1] to a competitive economy by leveraging the opportunities afforded by globalization and technological change, rather than succumbing as a victim.

We aim to contribute to the discussion initiated by Lucchese and Nascia (2016) in several ways. First, we take another look at the data in Sect. 2. Extending the time period of the data reveals that the decline and lack of competitiveness of the Italian industry had begun long before the advent of the Euro crises. Section 3 provides a brief overview of why and how globalization and technological change have shaped the competitiveness of countries in the past decades and explores the implications for the design of contemporary innovation and industry policy. Instead of a national and hierarchical approach, we argue for a more disaggregated level highlighting the importance of sunrise sectors and regions. In Sect. 3 we focus on Germany as a role model in transforming its economy from a "sick man" into a "phoenix". Section 4 summarizes and concludes.

[1] "The real sick man of Europe", *Economist* May 19th 2005, accessed May 14th 2016 under http://www.economist.com/node/3987219.

2 Yet another look

2.1 Another look at the data: Just the Euro crisis?

Based on a rich and fruitful set of data and information, Lucchese and Nascia (2016) argue that the Euro crisis in 2007/08 triggered Italy's industrial decline. While exports in emerging sectors remained constant after 2008, the authors argue that the Italian industry is competitive in these sectors. The drastic decline of Italian industry is almost exclusively the result of a decline of competitiveness in the low- and medium-technology sectors, reflecting a precipitous decrease in domestic demand, which itself is rooted in the austerity policy.

However, the data provided by Lucchese and Nascia (2016) are limited in that they start in 2007. Extending the same measures[2] to the start of the monetary union in 1999 provides a different picture: the economic crisis in Italy did not start in 2008 with the Euro crises, but rather years before—underpinning what the *Economist* titled in 2005—Italy is the "Real sick man of Europe".

Since 1999 real GDP has grown in Italy just by 3 % (15 years). This is the second lowest growth rate in the EU (Portugal 7 %; Germany 22 % or Spain 30 %), and is only slightly higher than that of Greece (2 %). This stagnant growth rate of GDP in Italy was not caused by a drastic decrease in 2008 due to shocks from the financial crisis, as proposed by Lucchese and Nascia (2016), but may reveal a lack of competitiveness in a globalized world. However, the authors argue in the opposite way. The export performance of Italy has been similar to that of Germany since the Euro crises, so that "(T)he collapse of manufacturing production is not the result of a worsening of Italian competitiveness; in the context of rising world trade, Italian firms focusing on foreign markets have increased sales, strengthening their financial and economic conditions" (pp.3).

Export ratios are defined as the total amount of exports divided by the total production of goods and services. They are a widely used measure for the international competitiveness of domestic firms, expressing the commitment and readiness of firms to engage in export activities. The export ratios in Italy increased over the past 15 years by 31 %, an annual average increase of 2 %. In the core Eurozone, only Spain experienced a lower increase, 26 % (Greece was 52 %; Portugal was 52 %; and Germany was 73 %). Given the steady state increase of real GDP by 2 % in Italy, a drastic fall in domestic demand should therefore have the effect of increasing the export ratio, which, in fact, is not confirmed by the data.

Lucchese et al. argue that the decline of the industry is attributable to a substantial fall of domestic demand aggravated by the austerity policies implemented since 2008: "It is the depression of domestic demand that has led to the dramatic fall of production" (pp. 3). To stimulate domestic demand, government policy could increase public spending and trade unions could demand higher wages (Lucchese et al. pp. 16). While this policy may hold in a *Keynesian* and closed economy, the positive effects in an open and competitive world are questionable.

[2] The data used in this section are based on EU-Commission and the indices are taken from „Die Krise war niemals weg", *Wirtschaftswoche* No. 10, 04/05/2016, pp. 24–27.

The past 15 years reveal the adverse effects of these policies in Italy, where both unit labor costs and public debt are the highest in Europe. Unit labor costs increased in Italy since 1999 by 42 % (Germany by 17 %, Greece, Portugal by 22 %, Spain by 31 %), and this increase was not accompanied by a corresponding increase in productivity to sustain international competitiveness.[3] Finally, Italy cannot be characterized as a country suffering from austerity and a lack of private income and wealth. Pensions paid rank among the highest in the OECD countries (with Spain and Greece),[4] and also household net worth (163,900 €) (Germany: 51,400€; Spain 178,300€).[5] Thus, it is hard to accept the arguments that austerity as a response to the Euro crisis was the sole or main cause contributing to the fall in domestic demand in Italy and that an increase in public debt should now stimulate domestic demand to restore the vitality of manufacturing in Italy. The actual data and empirical evidence are not consistent with or support the arguments raised by Lucchese et al. and in particular their conclusions concerning the international competitiveness of the Italian industry (see also Sect. 2.4).

2.2 Another look at the evolution of European Policy: are the good times gone?

Lucchese and Nascia (2016) present their "Tools of Italy's Policy" in the context of the successful post-war decades and rely on the medicine doctor, asserting a closed-country cure. Two changes altering the competitive advantages of countries since the successful post-war era should be analyzed in a deeper sense, rather than just a superficial snapshot—the evolution of globalization affecting the supply and demand for resources, goods and services, along with the production process, and the evolution of European integration. The interrelation and evolution of both phenomena over time pose new challenges for designing policy initiatives that work. As there is no size that fits all, there is also no best single innovation and industrial policy approach.

The evolution of economies is path dependent. Understanding the process and driving forces underlying is a *conditio sine qua non* for designing policy approaches (Acemoglu and Robinson 2012). Lucchese and Nascia (2016) provide such an overview of the evolution of industrial policy in Italy and Europe. They clearly grieve for the good old times with the prosperous economic growth after WW2 and make a compelling case that this period of economic growth and dynamism is mainly attributable to the extensive industrial policy implemented by the Italian government.

However, after WW2, all of Europe, in fact, the entire developed world, enjoyed a surge in economic growth and diminished unemployment, almost to the point of wiping out unemployment, as all boats were lifted by the rising tide of post-war

[3] There is a misunderstanding of the proposals made by the DGB, the German trade Union confederation, as cited on pp. 16. The DGB (Deutsche GewerkschaftsBund) not only negotiates for higher wages, but also higher flexibility, mobility, and training and education possibilities.

[4] OECD (2015): Pensions at a Glance, accessed June 4th. on http://www.oecd.org/publications/oecd-pensions-at-a-glance-19991363.htm.

[5] European Central Bank, accessed June 4th. on http://www.welt.de/114649182.

economic growth (see Audretsch and Lehmann 2016). Whether this impressive performance was accomplished more by an "extensive industrial policy" and the approach of each national government or simply by windfall profits stemming from an increased demand for goods by the increasingly prosperous European neighboring countries and the United States, is debatable.

Industrial policy in that era consisted almost exclusively in the provision of infrastructure associated with the production and sales of goods and services, like public investment in streets and railroad networks, airports, communication, energy, health care, public building, and of course education. Every country supported and protected domestic champions in sectors involving mass production, such as automobiles, steel, chemistry, communications, transportation and energy. Domestic demand for cars, houses, consumer and convenience goods, leisure goods and services triggered unprecedented levels of prosperity and consumer welfare throughout Europe, just as it did in Italy. The competitive advantage of both firms and countries was mainly based on two assets—financial capital to realize economies of scale and human capital or labor workforce. Consequently, in 1958, "The Six" countries (Belgium, France, Italy, Luxemburg, the Netherlands and Germany) founded the EU to reduce the transaction costs of trade.

Half a century later, the world has changed in a fundamental way. The competitiveness of firms and countries is now based not only on physical but also intangible assets (Audretsch and Thurik 2001). To be competitive in global markets, goods and services must be either inexpensive or innovative and unique, characterized by a low elasticity of demand. As markets have become more interrelated, not just in output but also input markets, competition for key resources like financial and human assets, knowledge and ideas but also social and cultural capital has increased.

Globalization has left no country untouched, as illustrated by the massive decline of cities, regions and industries, while others are emerging and prospering (Audretsch 2015). The former six countries tried to cope with these challenges by expanding the European Union to and integrating at least 27 countries into one single market and introducing one currency for a subgroup of countries in 1999.[6] Economic integration is a process and as such, it is likely to be incomplete at any point in time, not only because of barriers impeding integration between countries but also because it may lack coherence (Sapir 2011, pp. 1215). This holds for the European Union as well as for single countries such as Italy or Germany. Simply removing economic obstacles within and between countries may not be sufficient to produce socially and economically desirable outcomes. Also liberalization, as has taken place in the EU, produces undesirable outcomes with consequences both between and within countries. The removal of economic obstacles and liberalization needs to be accompanied by appropriate policies designed to enhance economic efficiency and to ensure sufficient stabilization. In fact, the European Union has launched several policy initiatives since its inception to stimulate not only emerging

[6] Sapir (2011) provides an excellent survey from the roots of the European Integration after WW2 until 2011, years after the financial crises started. He provides many insights on how and why countries benefitted from the European integration but also why some of them fail.

sectors and regions, but almost to support, stabilize and subsidize disadvantaged sectors, like agriculture, and regions, like the south of Italy, or the eastern part of Germany. The disappointing development of most of these regions in the past[7] decades, and the need to transfer resources from prosperous regions, where they are also needed to be invested in future opportunities, to such disadvantaged regions, is less a European than a regional problem. The solution of the problem should thus be undertaken at the disaggregated regional level. The good times are not gone, as the higher standard of living in most countries and regions reveals, but the extent of inequality has increased more within countries than between them, as Krugman (1991) had prophesized more than 30 years ago.

2.3 Another look at the evolution: sunset and sunrise?

In the middle of the 1970s, things changed. Domestic demand for domestic cars, refrigerators, houses, televisions and radio sets, among other products, had become satiated. While the demand for such goods and services stimulated the domestic industries in the post-war era, a rise in labor costs, skill biased technological change, the stirrings of market reforms in China and elsewhere in the world has led to the major insight offered by the Heckscher-Ohlin model –countries specialize according to the relative costs and endowments of labor and capital, leading to a shift of labor intensive work in emerging regions and countries and the production and development of capital intensive goods in the industrialized and western countries. The skill-biased technological change in the western countries has therefore led to a fall in the demand for unskilled labor relative to skilled labor in the high cost countries and regions of the European Union. As long as advances in IT, telecommunications and logistics are used to accomplish existing tasks in the old ways, developed countries will continue to export goods and services that are relatively intensive in skilled labor and capital and import those that are relatively intensive in unskilled labor. As a consequence, the demand in the developed countries for unskilled labor has fallen and thanks to the process of globalization and specialization, the wages of skilled workers have risen relative to the wages of unskilled workers fall (Snower et al. 2009, pp. 137).[8]

This specialization view was intensively supported by political leaders in two of the most powerful countries at that time, Margret Thatcher in the UK (Thatcherism) and Ronald Reagan in the US (Reaganomics), leading to a concession of the outsourcing and offshoring of low-skilled manufacturing and a shift to high-skilled sectors, like financial services. "The Age of Milton Friedman" (Shleifer 2009, pp. 123) had begun, leading to a new separation of the world, with winners of globalization but also losers, reflecting "sunrise" and "sunset" sectors, and the preservation of this new equilibrium.

[7] The Basque Country has been very successfully transformed and benefitted from the innovation policy initiatives from the European Union (Autant-Bernard et al. 2013).

[8] Wages have increased in Italy, resulting in the highest unit labor costs in Europe. In addition, the labor market is one of the most restrictive and least flexible.

Sunrise sectors refer to emerging and promising sectors, associated with relatively low replacement rates, offering relatively secure and high wage jobs. They are mainly characterized by a fundamental technological change of the process of organization based on flexibility, speed, economies of scope and core competencies. The main characteristics and key drivers are low set up costs, short production runs, highly skilled and crossed trained workers, the reliance on outside suppliers and a strong focus on customers' needs and requirements (Roberts 2004, pp. 49). Sunrise sectors have benefitted from technological change, and are successful in competing in the globalized word, despite national obstacles. Prominent examples of sunrise sectors in Italy are not just found in the textile and luxury goods industries with *Prada*, *Gucci*, *Armani*, *Alessi*, among others, but also in the high-tech engineering and manufacturing sector with companies like *Brembo*, *Landi Renzo*, *Bottero*, *iGuzzini*, or the *System Group*, and the nanotechnology sector.

Sunset sectors have not really benefitted from the technological advantage and the main competitive advantages are still based on physical assets, such as unskilled labor and capital and less on intangible assets. This renders these sectors and industries as being sensitive towards price competition, which has resulted in a fall in demand. Examples include the traditional textile industry and the mass production of standardized components. Whether an industrial sector within a country can be characterized as a "sunset" or "sunrise" sector depends not only on how new technologies influence the organization of production to create and exploit strategic advantages, but also how this sector contributes to regional growth and wealth and the value added to the region. A sunset sector in an industrialized region may be characterized as a sunrise sector in a relatively undeveloped and disadvantaged region.

Since the mid-1990s, enterprises have begun to discover the organizational implications of the nexus of new technologies, logistic systems and trade opportunities (Audretsch et al. 2014). This has given rise to new patterns of winners and losers from globalization, mirrored in new patterns of inequality across regions, where "*sunrise regions*" are distinguished from "*sunset regions*". The new advances in ICT, together with improvements in logistics and an increased mobility of high-skilled workers are enabling firms to decompose their various stages of production geographically. Global competition is now occurring at a lower level of disaggregation. As a result, sectors are becoming increasingly irrelevant and it is no longer the case that jobs are relatively secure in the growing sunrise sectors. Employment has become relatively insecure in the sunset sectors (Snower et al. 2009, pp. 142). *Sunrise regions* are characterized by new technologies and skills, which not only shape the organization of production within a given industry or sector, but also by geographic proximity across different industries and sectors. Entrepreneurs are able to devote their efforts in searching for new solutions for given and future problems (see Audretsch 2007). For *sunset regions*, the opposite holds. These regions are characterized by the dominance of sectors, such as the textile, steel or automotive industry, and the dominance of a handful of large corporations. Detroit in the US and GM provides a prominent example, as does the Ruhr-Valley in Germany with Krupp and Thyssen. Sunset regions are less

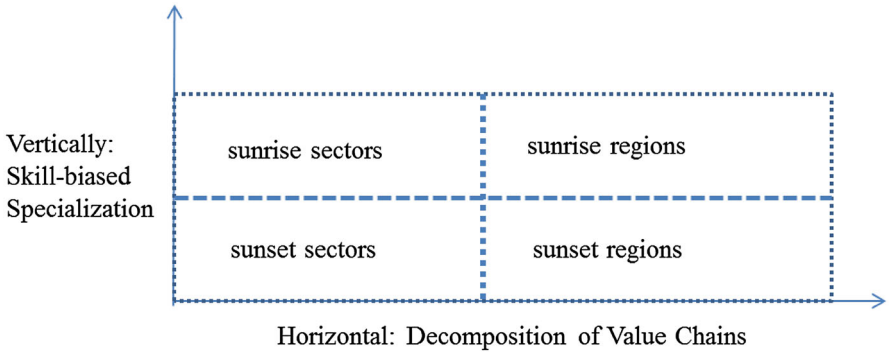

Fig. 1 Sunrise and sunset sectors and regions

entrepreneurial, and instead of an active search for opportunities, high skilled people migrate or move, resulting in a brain drain. New approaches for innovation and industrial policies should thus be implemented on a disaggregated spatial or geographic level with a greater emphasis on entrepreneurial orientation instead of protecting large, incumbent companies.

2.4 Another view on the implications: global, national or regional?

Skilled-biased technological change and the re-organization of the value chain have led to the emergence of *sunset* and *sunrise sectors* and *regions*, as depicted in Fig. 1. Policy initiatives have to be designed to remove economic obstacles but also to stimulate emerging and promising sectors and regions. These initiatives are either more vertical (sectoral) or horizontal (regional).

Sunrise sectors are those where countries could create future value and benefits and are seen as important and emerging for future growth. Firms in sunrise sectors often form regional clusters to benefit from knowledge spillovers and close relationships with the sources of knowledge, competitors, scientific research institutes and universities, suppliers or customers. Such clusters are the backbone of *sunrise regions* with a portfolio of companies varying in size, age and industry and clustered around scientific institutions. Recently, Thomson Reuters (2016) published a study on disruptive innovation and growth. They identified 12 highly innovative sectors—"*sunrise sectors*",[9] ranging from Aerospace & Defense, Automobile, over Cosmetics, Food & Beverage, or Oil & Gas and their respective subsectors. A ranking of the top ten innovative companies and the top ten most influential research institutes for each of the sectors (top ten worldwide, Europe, North-America and Asia) reflects the competitiveness of countries in these emerging and promising industries. In none of the 12 sunrise sectors is an Italian

[9] The sectors are: Aerospace & Defense, Automotive, Biotechnology, Cosmetics & Well Being, Food, Beverage, & Tobacco, Home Appliances, IT, Medical Devices, Oil & Gas, Pharmaceuticals, Semiconductors, and Telecommunication. Most of these sectors are also identified by Lucchese and Nascia (2016) as promising for the Italian industry.

company ranked among the top ten in Europe (much less worldwide). The ranking of the top ten most influential research institutes lists two Italian universities in just two sectors: *Polytechnic University of Turin* (ranked as third in the automotive sector) and *Polytechnic University of Milan* (ranked as sixth in the home appliances sector). Both universities provide essential research, knowledge and talent for the scientific heart and core of two of the most promising sunrise regions in Europe—Piermont and Lombardy. For the remaining ten promising sectors, no Italian institute is listed in the top ten ranking.

We agree with Lucchese and Nascia (2016) that there is a need for a new policy agenda, that "…has to overcome the limitations and failure of past experiences—such as collusive practices between political and economic power, heavy bureaucracy, and a lack of accountability and entrepreneurship" (pp. 15). However, their argument for "An industrial policy for Europe" (pp. 16) goes in the opposite direction. It is a backwards oriented approach relying more on the federal government and less on market participants or local and regional policy makers to make key decisions about investing in future and promising industries. Lucchese and Nascia (2016) further claim that the new policy approaches "should be creative and selective" (pp. 15) and "…should foster and stimulate entrepreneurship". They select promising sectors which should be the focus of public interest – environment, energy, knowledge, ICT, health and welfare, (se Fn.11) but provide no answer on how to stimulate these sectors.[10] But they incessantly warn against possible adverse effects like labor-saving robotization or the dangerous development of technology platforms like *Uber* (pp. 15) and suggest that the government should regulate how ICT and business interact with people and society. Such an initiative may lead to adverse effects, such as a reduction of entrepreneurial incentives and creativity, resulting in a competitive disadvantage in import intensive industrial sectors (Lehmann and Seitz 2016). The policy advocated by Lucchese and Nascia (2016) would just simply take Italy out of the game! *Uber*, *AirBnd* and *Robots* do not stop at the Italian border.[11]

As an alternative to the policy approach advocated by Lucchese and Nascia (2016), we instead propose a more disaggregated policy approach, on the basis of the four developments as depicted in Fig. 1. This results in a policy initiative that combines the skill biased specialization with a geographic dimension. In other words: stimulating entrepreneurial creativity and spirit in combination with the strategic management of places (Audretsch 2015; Audretsch and Lehmann 2016).[12]

[10] One possible way is to stimulate promising sectors and regions by "picking the winner" competitions, like the "Excellent Cluster Initiative" in Germany, combining the benefits of public innovation policy with the evolution of market forces to stimulate promising and emerging sectors and regions (Lehmann and Menter, 2016).

[11] But companies like *Amazon*, *Ebay*, *Google* or *Starbucks* leave their taxes in front of the borderline, using national infrastructure as a lunch for free.

[12] A promising literature has emerged combining the individual, entrepreneurial dimension in the geographic context (see, Acs et al. 2016a; Audretsch et al. 2015b) pointing out that successful innovation policy has to be focused on the complementary and substitution effects, or "bottlenecks" of decision and choice variables (Acs et al. 2016a, b; Battisti et al. 2014).

The main challenge for national industrial and innovation policies is thus to design and create governance structures that stimulate and enable complementary decision variables,[13] encompassing diversity in industries, entrepreneurial and established firms, and research intensive universities and scientific institutions as a valuable source of knowledge spillovers. Germany may serve as a role model for such a policy approach.

3 Secrets and lessons learned? The case of Germany

Maybe that news media in the UK are creative in attributing the title "Sick man of Europe" to all countries in Europe—except their own. In 1999, this title was attributed to Germany by *The Economist*. The German news media responded, posing their own question, "are we still playing in the Champions League?" (Audretsch and Lehmann 2016, pp.3). However, why has Germany been the sole country to be transformed from the "Sick man of Europe" to the contemporary stunning economic success reflecting economic resilience in a turbulent global? In contrast to the new policies, as proposed by Lucchese and Nascia (2016), we argue that the means to recover are based on the core competence enjoyed by a country, its special secrets, which have to be rediscovered, re-articulated and recombined to gain new strength. Countries are diverse and diversity matters in several ways.[14] Diversity leads to complementary effects and thus increases performance (Roberts 2004, pp. 34ff). Diversity also serves as a portfolio, reducing the risk of failure. Like in soccer, where not the team with the best individual players has the best chances to win, but rather with the best teamwork. The essential ingredients to generate and stimulate sunrise regions and to transform sunset sectors and regions are widely known: sources of knowledge spillovers, a set of different types of firms and industries clustered around, a well-functioning infrastructure, the ability and willingness for change, and a decentralized governance structure beyond a myopic focus.

3.1 Universities and scientific research institutes

The perhaps most important invention in the last millennium was located and made popular by Italy—the invention of universities, starting with the foundation of the University in Bologna (about 1088), which was long before the first university was founded in Germany (Heidelberg, 1386). Following the prestigious rankings worldwide, Italy, like Germany, does not seem to have benefitted from a "first mover advantage". Universities in Italy can barely be found in the top 100 rankings. However, a competitive and future oriented higher education system is the *conditio sine qua non* to generate knowledge and spillover effects to spur innovation and

[13] See the special issue on "The Governance of Entrepreneurial Ecosystems", edited by Colombo, Dagnino, Lehmann, and Salmador, *Small Business Economics* (2017, forthcoming).

[14] Scott E Page (2007), The difference: How the Power of Diversity creates better Groups, Firms, Schools, and Societies, Princeton: Princeton University Press, and the discussion and review by Ionnaides (2010).

economic growth (Lehmann 2015). What is necessary, as Lucchese et al. advocate, is a re-organization of the higher education sector to stimulate universities to differentiate themselves to increase the effectiveness and efficiency in providing knowledge, human capital and ideas (Cattaneo et al. 2016). This requires a differentiated system of research institutes not just as sources of knowledge spillovers but also as matching partners for diverse firms and industries (Audretsch et al. 2015a, c; Bonaccorsi et al. 2013; Ghio et al. 2015). Germany exhibits such a diversified system of research institutes, ranging from *Max Planck Institutes* for fundamental and basic research excellence to *Fraunhofer Institutes* and the *Helmholtz* and *Steinbeiß* institutions with a focus on engineering and applied research and a diversified system of universities, with full universities, the universities of the applied sciences (*Fachhochschulen*) and the *Berufsschulen*, partnering the dual apprenticeship system (Audretsch and Lehmann 2016, pp. 74f.). Instead of one size fits it all, the research system in Germany supports excellent partnerships for all kinds of firms, either large multinationals like Siemens, small and medium sized companies, or new start-ups and entrepreneurial firms, and almost all industries. The research institutes not only provide knowledge spillovers and highly skilled labor, they also support their partners in industry with new ideas, services, innovations and tools. Italy, with its strong roots in manufacturing and engineering, should be more concerned in establishing a more differentiated system of research.

3.2 Diversity in industry and firm size

Germany lists its share of global and multinational companies worldwide, such as Siemens, Bayer, BASF, BMW, Mercedes, Eon, the Deutsche Telekom, Deutsche Bahn, Deutsche Post, and Lufthansa. They all rank among the largest companies in their industries and constitute an important pillar of the economy. Most of these companies are the backbone of a well-functioning infrastructure, guaranteeing that people, goods, and services could be transported and distributed sufficiently. The importance of infrastructure is largely overlooked by Lucchese and Nascia (2016).

However, Germany also has something different—The *Mittelstand* and the Hidden Champions. The '*Mittelstand*' is generally comprised by SMEs ranging from 9 employees up to 500. Italy, like other countries in Europe, also has their SMEs (although with a different classification). However, Germany differs in the diversity of firm size. About 16 % of all SME in Germany are of medium size (49–249 employees), while this holds only for about 5 % of the Italian SMEs (Audretsch and Lehmann 2016, pp. 19). Instead, 95 % of the SMEs in Italy are microenterprises with fewer than nine employees. It is the Mittelstand or SMEs who drive the export activities in Germany. This requires not only the willingness and ability to compete on international markets, but also requires a minimum efficient scale. The strong influence of trade unions on SMEs in Italy makes them reluctant to hire new employees, and in particular young people. The influence of trade unions on SMEs in Germany is rather limited, leading to a higher flexibility in hiring employees. A characteristic of the Italian economy are the 5000 SMEs, which are mainly under public and municipal governance, and thus by trade unions. What also

makes Germany different from other countries is the quality of the SMEs, or the "Hidden Champions". These are small and medium sized companies and world market leaders in their niches (Simon 2009). From an estimated number 2700 of such companies worldwide, 1307 are located in Germany. Italy hosts only 76 of these hidden champions, almost all of which located in the northern part of Italy.

Besides the established SMEs, Germany has developed a vibrant entrepreneurship scene, which is the most dynamic in continental Europe (Audretsch and Lehmann 2016). Entrepreneurship is blossoming in Germany, and is not just restricted to the IT and "App"- sectors, but is also developing rapidly in biochemistry, medicine, life sciences, and engineering, from promising and emerging fields such as green energy, healthcare, mobility, and care for the elderly. With a broad and diverse set of firms and industries, regions benefit in several ways. One benefit stems not just by the portfolio effect but also by cross applications of innovations in different sectors. Entrepreneurial activities are supported by several policy initiatives, such as the EXIST Program, spanning nearly every region in Germany (Audretsch and Lehmann 2016, pp. 41).

3.3 Roots and wings: decentralization and future orientation

As is the case for Germany, the identity of Italians revolves around and is shaped by their local roots and their surroundings. The shift in what drives economic growth away from the traditional economic factor of physical capital to knowledge, or ideas and creativity, has important implications for the geography of economic governance and public policy. The spatial locus of governance and economic policy needs to correspond to the relevant geographic locus of knowledge, spillovers and entrepreneurship—local. The localization of the most important factors driving economic prosperity—knowledge and entrepreneurship –suggests that economic policy and governance also need to be shifted from the national to the local level. The federal and decentralized structure in Germany offers the possibility to diversify but also to increase the extent of competition across regions. The approach of "picking the winner" is an effective policy approach to stimulate competition at the regional level (Menter and Lehmann 2016).

While knowledge, innovation and entrepreneurship are generally localized phenomena, the opportunities spurring innovation and entrepreneurship are global in nature. Thus, the wings to escape from these roots are necessary to leverage the global opportunities. Again, the experience of Germany is instructive. The world's most comprehensive ranking of countries for adult English skills (EF English Proficiency Index, EF EPI), reflects the improvement in Germany (rank 11). Italy is ranked 28 (Portugal 12; Spain 20; France 30).[15]

The combination of celebrating and living its famous history with a high-technology and future oriented country, experiencing entrepreneurial activities in several ways (Bonaccorsi et al. 2014), makes Italy a special and unique country in the world. High tech manufacturing, the production of luxury goods and innovations in modern design as well as in the building and construction sector are core competences and reflect specific secrets.

[15] Audretsch and Lehmann 2016, pp. 92f., data accessed 6th of June at http://www.ef.de/epi/.

4 Summary and concluding remarks

In this paper we have commented on and added to Lucchese and Nascia (2016), by proposing a new approach to innovation and industrial policies. The authors argue, based on a set of facts and data starting only in 2007, that the decline of the Italian industry is rooted in the Euro Crisis of 2007/08. Extending the range of the data until 1999, which encompasses the introduction of the Euro, we show instead that the decline of Italian industry had actually begun years before the euro crises. The example of Lucchese and Nascia (2016) clearly shows that not just the selection of measures is important to underpinning the argument, but also the time span of data selected and analyzed. We also question the conclusion that the industrial sectors in Italy are competitive and that the decline in the medium–high and -low sectors were mainly caused by austerity policies. Despite having the highest unit labor costs and public debt in the European Union since the introduction of the Euro, the argument of austerity policy to explain the decline in the manufacturing industry is simply not convincing. We also show that Italy, in contrast to the conclusion of the authors, is not at the forefront of the most promising and emerging industries. Lucchese and Nascia (2016) argue for a policy shift from the European and horizontal level towards a national and vertical level. They base their argument on the "success" of such an active governmental policy approach after WW2. However, we have instead argued those very same policy initiatives that proved to be so successful in the post-war area might actually be counterproductive today.

An enlightened policy approach that leverages the opportunities afforded from globalization rather than falling as a victim to globalization through futile attempts to return "back to the future" by re-visiting policies from an earlier era could undoubtedly result in an Italian version of what we suggest at the conclusion of *The Seven Secrets of Germany*—"It is good to be an Italian". Every country has to figure out which investments are strategic and should be assigned priority status, and whether the domestic infrastructure is both effective and efficient. A key role for public policy in Italy would be to champion investments in infrastructure. In addition, infrastructure also encompasses the governance structure of a country and how decision processes are made and finally implemented. Necessary and important issues on the national level should lead to a more flexible employment policy stimulating SMEs to hire young and dynamic people to grow and lower unit costs.

Necessary policy reforms create winners and losers. To stave off protectionism, policy must protect the losers and enable sufficient numbers of voters who benefit from the necessary reforms and policies. This, however, also needs a change in the mentality away from full insurance and a total reliance on the government towards more individual responsibility.

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