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THE CONTRIBUTION OF THE ITALIAN STARTUP ACT TO THE COUNTRY'S ECONOMIC GROWTH AND JOB CREATION: THE ANATOMY OF A SUCCESSFUL IMPLEMENTATION

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ACADEMIC YEAR 2015/2016

In memory of Elide, a cutting-edge woman.
My guide, my strength,
my inspiration.

AKNOWLEDGMENTS

I would like to thank my supervisor, Antonio La Spina, for all his guidance through the work. His ideas, advices and feedbacks have been absolutely invaluable.

I would like to thank my co-supervisor, Paolo Garonna, for the support to this research thesis.

I'd like to thank my beloved friends and fellows for being with me in every important step. I am very grateful to all of you.

I would especially thank my parents for the unconditional trust, love, constant encouragement and support I have gotten over the years. I undoubtedly could not have done this without you. You are my roots. I hope to repay all your efforts.

I would also express a special thanks to Jules. My totem, my engine of growth.

Finally, I would like to thank and dedicate this thesis to my grandmother. It was you who originally generated my love for the culture. I will always take your lessons with me, every day.

CONTENTS

LIST OF FIGURES

LIST OF TABLES

INTRODUCTION

"It is not the most intellectual of the species that survives, it is not the strongest that survives but the one that is able to best adapt to the changing environment"

Leon C. Megginson.

In the 21st Century, the economic environment is facing a transition phase from the industrial to the digital era. The unsuitableness of the traditional "species of enterprises" to the changing dynamics is demonstrated by their current inability to lift up productivity, growth and employment. The habitual organizational model has reached a point of diminishing returns. What is, then, a possible solution? Certainly, the disruptive innovation through the creation of new products and services. As every transformation, this new paradigm of economic growth requires completely innovative methods of working, new entrepreneurial culture, new perspectives, new "everything". Some entities are proving to adapt and succeed in the new economy better than anyone else. They are the innovative startups - newly established companies that present a clear connection to the technological innovation. Their role deserves a particular attention.

A solid startup sector has been shown to be the key to sustainable economic growth and job creation in current ages. It is not a mere fortuity if the most thriving economies also have the most thriving startup ecosystems. Nonetheless, the growth of these actors is not spontaneous. It is a consequence of good fertilizers. Undoubtedly, public policies in support of innovative startups are one of them. The "species-countries" that are more friendly to these disruptive agents through the formulation of proper policies have been demonstrated to better increase the economic growth and job creation of their country. It is then unveiled the rationale of the present research: understanding whether the Italian Startup Act - the national public policy in support of these companies - is appropriate enough to contribute to

the economic growth and job creation of the country through the establishment and development of a solid startup structure.

The work is an analytical and conceptual attempt to answer very straightforward, yet challenging questions: Is the Italian startup policy effective, or is it a rhetoric corpus of recommendations? What is the impact of the Italian legislation so far? Does it enable innovative startups to spur innovation? Is it capable of creating new jobs and stimulate greater prosperity in the Italian economy? Finally, is it worthwhile to invest in this policy or the feeble aspect of the Italian productive system could not be improved through the presence of innovative enterprises?

Through a diachronic analysis of the available data – the paper will seek to demonstrate the effectiveness of the Italian policy. Evidence will be given on the positive impact of the Italian Startup Act on the establishment and development of innovative startups; its long-run contribution to the economic growth of the country; finally, the noteworthy effect in terms of employment. The conclusion is that it is worthwhile investing in this policy. Innovative startups can improve the fragile aspects of the Italian productive system and encourage the economic growth and job creation in our country. Nonetheless, some changes need to be addressed to deeply achieve these ambitious objectives. Therefore, the thesis will finally draft recommendations to enhance the policy. Although the paper focuses on Italy, English was chosen as writing language to raise the international awareness around the Italian successful attempts to align with the transformed economic environment.

The analysis takes shape along five chapters. Having in mind the evidence that markets relying on conventional resources are not effective anymore in spurring productivity and, thereby, economic growth, the *first chapter* will introduce the Economics of Innovation as the proper theoretical framework to rethink the outdated industrial policies that hardly adapt to the digital era. This introductive section will be fundamental to understand how the disruptive innovation is the solution to the diminishing economic returns and to demonstrate that startups are the main entities able to embrace the innovation process. The influential role of

public policies in shaping the environment in which successful startups can enter the market, experiment, innovate, and grow will be treated as well. This crucial assumption will be supported quoting Mariana Mazzucato and her theories about an "Entrepreneurial State": Does anybody know that the algorithm that led to Google's success was funded by a public national grant?

The *second chapter* is a further demonstration that proper political measures are one of the right procedures to engineer the favorable conditions for the flowering of startups. It will illustrate the most prolific strategies that contributed to the development of thriving ecosystems according to the Global Startup Ecosystem Ranking in 2015. The policies of United States, UK, Germany and France will be reported as successful practices that enabled the growth of high-tech, young companies and fostered their beneficial impact on the countries in question. This comparative overview will be useful to the discussion of the Italian specific policy in order to better comprehend what Italy could learn from the champions.

After these two introductive and explicative sections, the other three chapters will entirely focus on the Italian regulatory framework in support of innovative startups. The *third chapter* will introduce the main legislative measures included in the Law 221/2012 (The Italian Startup Act) that provides the definition of innovative startups; the criteria for eligibility; an evidence-based approach to monitoring the implementation of the policy and the facilitations for the Italian startups. Also, further strategies that are not directly included in the original provisions will be introduced.

Getting to the heart of the work, the *chapter four* will concentrate on examining how the Italian Startup Act is contributing to the establishment of innovative enterprises and the impact on the economic growth and employment of the country. Missing a reasonable time span to investigate the data, the *ex-post evaluation* will be not feasible. Also, economic growth and job creation are long-term objectives that required a fair temporal extension to realize. Hence, it has been decided to carry out an *in itinere evaluation* concentrating on how the policy is being realized. The

methodology of the analysis chosen to interpret the available information will be a temporal comparison between the empirical evidence from moment T1 (when the first generation of data was registered) to moment T2 (when the last generation of data was detected). Firstly, it will be evaluated the broad impact of the Italian Startup Act on the economic growth and job creation. To this aim, three set of indicators will be taken into consideration: the startup rate; the economic performances of these innovative agents and their job creation rate. Their diachronic evolution from September 2014 to June 2016 will be examined. It is important to specify that the startup rate is the key indicator to observe the real effect of the policy. Hence, a counterfactual analysis of the variable before and after the coming into force of the regulation will be reported in order to strengthen the reliability of the results.

Knowing the trends will allow interpreting the policy implementation status; its impact on the establishment of innovative companies (through the startup rate) and their contribution to the economic growth and job creation of the country (through the analysis of their economic performances and job creation rate). The positive role of the Italian Startup Act in fostering a flourishing startup ecosystem and its consequential long-term contribution to economic growth and job creation will be demonstrated.

After having observed the general impact of the policy, the second section of the chapter will analyze the implementation of the single measures to identify the practices that are currently contributing to the effectiveness of the policy and the strategies that require changes. The aim of a more specific examination is to draft recommendations to improve the Italian Startup Act and enabling it to better guide Italy towards economic prosperity and higher employment rates.

Indeed, *chapter five* will be entirely structured in order to draft feasible policy recommendations to deal with the ineffective strategies. In particular, three potential solutions will be identified: strengthening the Italian venture capital market; establishing a Public Development Agency for the startups in the South of

Italy due to the proved regional disparities over the territory; finally, further simplification of the procedures concerning the Italian program to retain foreign human capital and investments in our country.

CHAPTER 1

Economics of Innovation: New Paradigm of Growth

1.1 Introduction

In the 21st century, the economic environment is dealing with different strategic issues. The old rules for growth no longer apply. Corporate strategy and structures have proven unequal to adapt to the changing economy. Every existing company will have to tackle a common problem: how to build an effective organization in a time of continuous disruption where the old structures no longer work. Every new entrant company should entrench innovation in its genetic makeup if it demands to survive. Companies will need to adapt a strategy that embraces disruption, sustains innovation, and execution. Crucially, they need to build a new organizational system based on a different paradigm of growth. They require to restart from the teachings of the Economics of Innovation (Compass, 2015).

Concentrating on the determinants, features and effects of innovation on the economic dynamics, the theoretical paradigm assumes that markets relying on conventional input resources and price signals are not anymore effective in spurring higher productivity and, thereby, economic growth. Indeed, Economics of Innovation lies its premises on innovation as the most important component of long-term economic growth. It recognizes that innovation process is easier to young innovative enterprises that arise in the wind of changes and are able to adapt faster to the new ecosystem. It reckons the importance to begin from young companies that will tend to innovate more in an attempt to undermine the leadership of older corporations with conservative behaviour which, subsequently, respond trigging incremental innovations or imitation. It emphasizes the key role of institutions in stimulating the beneficial impact of innovation entrenched in young firms (Malerba, 2000). Hence, it is not a mere fortuity if Economics of Innovation is increasingly gaining ground in today's economic knowledge. Its persuasive

paradigm of growth represents the foundations to rethink the outdated industrial policies that hardly adapt to the current digital era. Playing a crucial role to build the theoretical framework of the new economic phase, Economics of Innovation deserves a spotlight in order to induce policy makers and the major actors of the economic system to follow its precepts with the aim to maximize economic growth, employment and thereby, prosperity.

In line with these assumptions, the chapter will focus on the Economics of Innovation as the proper theoretical framework to build effective policies and lift up the economy. In particular, the first paragraph will explore the main authors and theories that mostly contribute to the conceptualization of innovation as the engine of economic growth naming Schumpeter as the founding father. To follow a coherent structure, the second paragraph will deal with the main traits of Economics of Innovation acquired and reformulated from the historic economic thoughts. Two crucial observations will be inferred from the theory: young innovative firms tend to innovate and contribute more efficiently to economic growth; public institutions have a key role in promoting innovation and supporting young firms' ecosystems. A clarification has to be made: when the paper mentions young firms is specifically referring to the innovative startups that are newly-established companies presenting a clear connection to technological innovation. Thus, the third paragraph will present empirical demonstrations on the positive impact of young innovative firms on economic growth and job creations proving the validity of the theoretical observations and explaining why promoting technological startups and nurturing their ecosystems count. Nonetheless, the studies reveal cross-countries differences in innovative firms' dynamics. Hence, the last paragraph will explain - demonstrating again the effectiveness of Economics of Innovation - that public intervention plays an influential role in shaping the environment in which successful startups can enter the market, experiment, innovate, and grow. Finally, conclusions of the chapter will be drawn.

1.2 "Innovation" in the economic thought

"Around the world, the rhetoric of innovation has replaced the post-war language of welfare economics" (Daines, 1999, p.1).

Where does the idea of innovation as economic engine come from? What does it bring to the economy? What is the path towards the conceptualization of the Economics of Innovation as the proper theoretical paradigm of growth?

Schumpeter has been recognized the founding father of Economics of Innovation laying the foundations for the development of a cutting-edge paradigm of growth: the innovation as the primary economic engine. Nonetheless, previous sophistications to the Schumpeterian analysis of the new technological system deserve attention for their ground-breaking perspectives and their contribution to the theorization of the new "industrial religion". Clever considerations on the role of technological innovation were introduced by Smith, Ricardo and Marx. In "*The Wealth of Nations"*, Smith highlighted the correlation between technological change, division of labour and structural transformations in the economy. He identified the incorporation of technological progress in capital goods as a pivotal factor to enhance the specialization of labour and therefore to increase productivity. He did not focus on the process of generating innovations (Smith, 1776). In *"Principles of Political Economy"*, Ricardo studied the consequences of technological progress both from an endogenous point of view, tracing the relation between innovation, price reduction and increase in demand, and from an exogenous perspective in which the innovation would have influenced the level of employment (Ricardo, 1817). Finally, Marx emphasized the key role of technologies in the modern economies. He argued that innovation has a social nature that comes from a social process characterized by the conflicts between opposing interests (Rosenberg, 1982).

Among the pre-Schumpeterian theories of innovation, it is relevant to mention the ideas of Babbage and Usher who introduced some key concepts that are currently assimilated in the paradigm of the Economics of Innovation. In *"On the Economy of Machineries and Manufactures"*, Babbage bequeathed the importance of organizational factor in a large scale production (Babbage, 1832). Whilst, Usher in *"A History of Mechanical Inventions"*, devised the concept of innovation as a process. Indeed, technological innovations are the result of a "cumulative synthesis" that can be summarized in four progressive phases: the perception of the problem; the preparation of a solution; the introduction of the innovation; and, the critical revision of the invention (Usher, 1954). Hence, pre-Schumpeterian scholars speculate on the dynamics of technological progress and contribute to build some features of the Economics of Innovation. However, it was Schumpeter who thoroughly examined the role of innovation in the modern industrial economies.

According to Schumpeter assumptions, innovation is crucial to the industrial change. Primarily, he distinguishes invention from innovation. The *invention* is something purely scientific while *innovation* is doing "something new" in the economic system: a new product, market or production process (Schumpeter, 1939). Schumpeter considers the scientific progress an external factor of the economic system. It is not obvious that every innovation derives from an invention. Innovation is not a passive and adaptive reaction to the transformed economic environment. It is the creative response of businesses that spur an endogenous transformation of the economic landscape. Indeed, innovation is the "gale of creative destruction" that is "a process of industrial mutation that incessantly revolutionizes the economic structure from within, incessantly destroying the old one, incessantly creating a new one" (Schumpeter, 1942, p.82-83).

Schumpeter identified innovation as the critical dimension of economic change (Mansfield, 1983). He argued that the economic change revolves around innovation, entrepreneurial activities, and market power. He sought to prove that "innovation-originated" market power can provide better results than the invisible hand and price competition. Indeed, an innovation in a given field provokes further

innovations in related areas. According to his study, the age of enterprises is essential to explain the dynamics of innovation: young companies will tend to innovate more in an attempt to undermine the leadership of older enterprises with conservative behaviour which respond with incremental innovations or imitation. Moreover, innovation is not entrenched in the concept of rational economic activity. It is a separate process characterized by a high level of uncertainty. In fact, the innovator is a subject of bounded rationality and he cannot predict the outcome of his innovative activities. Thus, the innovative strategies of the enterprises may differ from each other and this creates different level of innovation (Schumpeter, 1949).

Schumpeter primarily focuses his researches on describing the innovative process and its impact on the ecosystem rather than concentrates on the determinates. Thus, taking the cue from his intuitions, economists tried to conceptualize models in order to understand the tendencies of growth and prove (successfully) the crucial role of technological progress in bringing about economic growth.

It was Robert Solow who first realized in his study that conventional measures of capital and labor inputs could not account for a total percentage of economic growth in industrialized countries. He assumed that the unexplained residual must reflect productivity growth, rather than the quantity of factors of production. In the Solow model, growth is modeled through a production function where output (Y) is a function of the quantity of capital (K) and labor (L) while (F) is the technological change:

$$Y = F (K, L).$$

Changes in the two inputs (K; L) cause changes along the function while upward or downward shifts in the function would be caused by technological change. When Solow discovered that a percentage of variation in output was not explained by capital and labor, he called the residual “technical change”. Solow’s theory was an exogenous growth theory because the variable for technology was considered exogenously (Solow, 1957).

1.2.1 Neoclassical and Evolutionary endogenous growth models

As economists became more aware of the crucial role that innovation plays in economic growth, it became necessary to include technology in growth models. The need to overcome the old neoclassical Solow model of economic growth resulted in two new theoretical approaches to economic growth and technological change: neoclassical endogenous growth models and evolutionary growth models. The first class has been labeled endogenous because of its feature of "endogenizing" technological change. The second models include technological change as well, however following the evolutionary view of innovation and economic growth.

The *new-neoclassical endogenous growth models* go beyond Solow's approach by including technological change in the model of growth. Generally, these approaches consider the companies as the heart of innovation. Enterprises are able to create a technological progress inside the economic system. Companies are perfectly rational and have all necessary information to implement a maximizing strategic behavior. Indeed, they can influence the decisions of the competitors through their actions. Firms can establish barriers to entry, get in, get out or force the others to leave the market. Here, a key feature of the model: the market structure is endogenous to the model and the main variables are investments in R&D. Innovation is a private asset and it is partially appropriated thus, it implies a process of diffusion. The latter trait differs from the neoclassical conception where technical progress is exogenous and a public good (Malerba, 2000). The debate on the correlation between market structure and incentives to the innovation activity has been mostly theorized by the neoclassical Arrow. In his study, Arrow reveals that the value of innovation is minimum in a monopolistic market because the margin of profit is inferior for large companies. While, in a competitive market with new firms that entry, the value of innovation is superior because the innovation activity corresponds to profits and it is an incentive to invest. Thus, the incentive to invent and innovate is less under monopolistic than under competitive conditions (Arrow, 1962).

The other wave of endogenous growth models is the *evolutionary perspective*. Evolutionary economics deals with the study of the processes and dynamics that drive the transformation of the economic environment through the actions of agents with experience and interactions. This perspective reveals the importance of knowledge and the learning process in research activities and innovation. It stresses the crucial role of enterprises as the agents that research, embody the knowledge, innovate and produce in uncertain environments. The paradigm assumes that the technological innovation process has more chances to survive in the competitive ecosystem through the generation of original ideas. Indeed, it is the adaptive efficiency of the firms enabling them to survive in a competitive environment that defines their economic efficiency. Finally, evolutionary economics focuses on the non-equilibrium processes that stimulate an endogenous transformation of the economy. Those processes emerge from actions of enterprises with bounded rationality who may learn from the experience and the interaction with other actors. Moreover, the different backgrounds of the agents can inspire the change. For evolutionists, national institutions and innovative systems play a key role (Malerba, 2000).

Although the two classes of models differ with respect to their acceptance of tools, insights and opinion about the extent to which the real economic environment should be described [1], both perspectives are less homogeneous than the old neoclassical model of economic growth (Mulder, Groot & Hofkes, 2001). They strive for a more realistic depiction of the process of technological progress. Both models reckon technological and scientific opportunities as a stimulus for technological progress. They believe that economic incentives, such as intellectual

[1] The Neoclassical theorists study the balanced economic system while the Evolutionists focus on the transition phases. In contrast to Evolutionists, the Neoclassicals pay little attention to the processes of adjustment toward the equilibrium status. The Neoclassicals consider technology as a mere information, Evolutionists as multi-dimensional linked to knowledge. The Neoclassicals reckon the importance of enterprises' strategies, evolutionists give more weight to the expertise of the companies. The Neoclassicals consider the learning process as the result of experience while evolutionists highlight the relevance of the cognitive aspect and problem solving. The Neoclassicals consider companies isolated agents without history while Evolutionists consider them integrated into the social and institutional context. Finally, The Neoclassical enterprises are rational and they have all the information available. Evolutionary ones have bounded rationality and are dominated by uncertainty (Malerba, 2000).

properties, encourage innovation. They recognize that the demand positively affects the innovation activity. Higher levels of demand lead to greater quantity of investments in Research and Development (R&D). Finally, they recognize the mutual influence of market structure and innovation. Higher concentration of businesses in the market leads to a higher rate of technological development subsequently influencing the structure of the market.

To sum up, the idea that technological change is a fundamental driving force of economic development is at the heart of both evolutionary and neoclassical economics. The two models converge in the basic Schumpeterian view. Innovation has been proved to be the engine of growth. Nonetheless, the evolutionary models have been considered more accurate to describe the current dynamics and to highlight who are the agents of innovation.

Publishing "*An Evolutionary theory of Economic Change"*, Nelson and Winter were promoters of the evolutionary approach. Leaving aside mathematical sophistications, the Nelson-Winter growth model concentrates on the correlation between technological progress and the market structure. Enterprises are agents with bounded rationality that act following three main decision-making procedures[2]: the use of production capacity; investments strategy and innovative policy. The latter can be innovative or generated by imitation. Each company produces a unique good using techniques that vary according to the amount of input per capital unit. The opportunity of the enterprise to reduce the cost of productions - increasing the production capacity - is directly related to the amount of investments in R&D. The Nelson-Winter model concludes that the rate of productivity growth, the capacity of the innovation by imitation process, the uncertainty of innovation activity and the investments policies significantly influence the market structure (Nelson & Winter).

[2] According to the evolutionary theory, enterprises are custodians of knowledge and they organize their decisions in "routine". The routine are repetitive decision-making procedures that the enterprises use in specific circumstances. They contribute to represent the abilities and knowledge of the enterprises.

These observations confirm the Schumpeterian assumption on the market structure as being both the factor that fosters a growing rate of innovation and the consequence of successful innovations. It recalls the idea of innovation as the gale of creative destruction. In addition, it encompasses another Schumpeterian paradigm: if large firms embrace an innovative strategy by imitating the young firms, they will generate higher profits than the innovative ones however, the productivity growth will remain inferior. This is because the innovation process is easier in the young innovative enterprises through to their adaptive efficiency. A number of evolutionary growth models have been developed being inspired by Nelson and Winter. In line with the Schumpeterian idea of the innovative firm as engine of innovation and productivity growth, Malerba empirically demonstrates that the young companies will tend to innovate more in an attempt to overcome the leadership of older enterprises with conservative behaviour that react with incremental innovations or imitation setting the innovation cycle in motion (Malerba, 1999).

1.3 Economics of innovation: theoretical paradigm

The previous literature discussion concerning the anatomy of innovation aimed to unearth the principal authors and their theoretical paradigms that contributed together to build the pillars of a revolutionary economic doctrine, the *Economics of Innovation*, that is increasingly gaining ground in today's economic knowledge as the most appropriate to drive the current dynamics. Being in a phase of transition from the industrial to the digital era, the world is experiencing a delicate moment. Societies have two destinies: they can fall into turmoil or rise to the occasion, using foresight to achieve success (Compass, 2015). Precisely, the Economic of Innovation is assuming importance due to its perceived capacity to be the foundation of new industrial policies that will ride the change embodying innovation rather than die under its destructive power. Getting to the heart, the Economics of Innovation is based on five main tenets: dynamic as methodology of analysis; innovation as a process; learning process and knowledge as pillars of

innovative progress; the importance of interactions among several actors and the key role of the institutions.

Innovation can be effectively represented as a dynamic process through which new products or new productive methods are generated. It is correlated to science through a bidirectional relation: the science greatly influences the innovation and the innovation can contribute to huge scientific achievements. Moreover, the enterprise is considered the crucial actor of the economic change. The company learns, introduces new technologies, invests in innovation activities, coordinates the endogenous and exogenous innovation process through agreements and relations with other actors. The enterprise obtains innovative results that generate profits, economic growth and employment. Finally, most of the innovations come from new entrants. Indeed, the innovation process is easier in the young innovative enterprise through to their adaptive efficiency. Young companies will tend to innovate more in an attempt to undermine the leadership of older enterprises with conservative behaviour which respond with incremental innovations or imitation processes (Malerba, 1999).

For innovation to occur, the enterprise needs the aid of several different actors. Without the contributions of universities, public research institutions, public policies in support of R&D and financial institutions, it would be extremely hard for the companies to innovate successfully. The identification of institutions as crucial agents in the innovative process represents one of the most interesting and original traits of the Economics of Innovation. This leads to conceptualizing innovation as a system where several actors interact with each other. Thus, it is a collective and dynamic phenomenon that is source of growth and development.

Nevertheless, it has always been hard to say what precisely constitutes innovation and even more complex to find an objective measurement. What are the theorized indicators to measure innovation in the Economics of Innovation? On one side, *expenditure in R&D* is a valuable tool to examine the innovative effort of the enterprises. It is an index of innovative input. On the other side, the indicator of

innovative output is the *patent* that is a signal of the technological capacity of an enterprise. Other indicators are *scientific citations or publications* that inform on the scientific output of a country or institution; *statists on the international commercialization* that measure the commercial competitiveness of the countries; *surveys and evaluations* linked to the specific sectors; finally, the presence of *innovative startup ecosystems* (Malerba, 2000).

To conclude, the economic literature on innovation proves that technological innovation is the harbinger of better performances through its adaptive capacity to this transition period. Moreover, it has been noted that new innovative companies have greater impact on overall levels of output and employment compared to the existing ones. The assumptions on the potential role of the young innovative firms – that better embody innovation towards higher economic and employment rates - build the premises to deeply investigate on these engines of prosperity. To this aim, the following paragraph will analyze empirical evidence on the impact of young innovative firms to economic growth and job creation in order to convince policy makers and public opinion why promoting innovative companies counts. It is useful to remind that when the paper cites the young firms is specifically referring to the innovative startups that are newly-established companies presenting a clear connection to technological innovation.

1.4 Why promoting innovative startups matters

The Italian economist Enrico Moretti studied the American labor market and the changing contours that are reshaping the US economy and its geography of jobs. While some sectors and occupations are dying, others are growing stronger. Over the past 50 years, US economy has shifted from a labor force centered on manufacturing to a labor force concentrated in the innovation sector[3]. Globalization

[3] For innovation sector, Moretti implies the following areas: information technology, software, Internet services, life science, clean-tech, new materials (nanotechnology, etc.), digital entertainment etc.

and technological progress are the causes of this transformation and Moretti awards the innovation sector as the US economic engine. Indeed, innovation is crucial in generating productivity growth and the dynamics of job creation. The persuasive work demonstrated that high-tech industries have the largest multiplier effect. For each new high-tech job in a city, five additional jobs are created outside high-tech in that city over the next 10 years (Moretti, 2012). These aspects lead reasonably to gather why innovation deserves to be promoted and not undermined. It is more than just the jobs in innovation that are at stake, it is the entire nation's economy.

Over the years, several empirical studies were realized to strengthen and highlight the beneficial contribution of innovation in general, and innovative firms in particular, to the economic growth and job creation. A study conducted by the Kauffman Foundation[4] showed how, from 1977 to 2005, the net job creation in America occurred only through companies that had only been established for less than a year. The research revealed that existing companies had lost about a million net jobs each year while new companies had added approximately three million jobs. Also, it has been highlighted that trends in the expansion of both startups and existing companies were cyclical. However, while the ability of startups to create jobs remained almost stable during recession years, the net loss of jobs in existing businesses was significant and affected to the intensity of the economic cycle (Kauffman Foundation, 2010). Figure 1 illustrates the updated results of the recent study of Kauffman Foundation over the period 1988-2012 that clearly confirms the past trends.

[4] Established in the1960s by Ewing Marion Kauffman, it is the largest American foundation to focus on entrepreneurship. The Kauffman Foundation's research contributes to an in-depth understanding of what drives innovation and economic growth in an entrepreneurial world. Aiming to create new knowledge about entrepreneurship, Kauffman conducts research that educates policymakers and the public about pro-entrepreneurship policies.

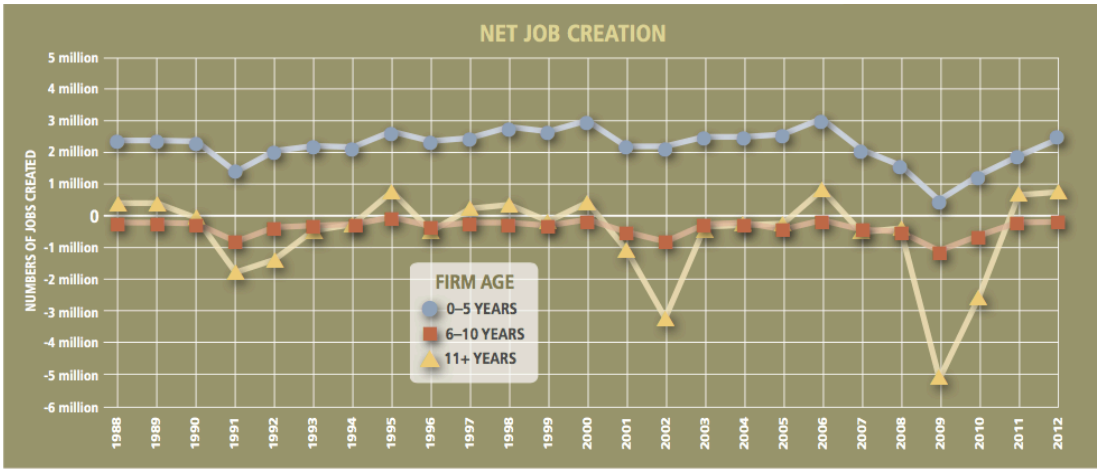

Figure 1: Net job creation. Source: U.S. Census Bureau Business Dynamics statistics, in The importance of young firms for economic growth. Kauffman foundation. (2015).

Another keen study was held in 2015 in order to cut the fog of skepticism surrounding the potential role of young innovative firms. In *"Science, Technology and Industry Scoreboard 2015"*, the OECD, focusing on 15 world economies, estimated that recent businesses - established in the last 5 years - generated almost half of the new jobs even if employed only 20% of the overall workforce. Moreover, during the last recession, there was a greater loss of jobs from companies that had been in the game for over 5 years while net employment growth remained positive in newly-established businesses (OECD, 2015).

Figure 2 shows the contribution to net job creation rate by group of firms, 2001-2011. It reveals that entrants and young firms remained the main contributors to net job creation from 2001 to 2011.

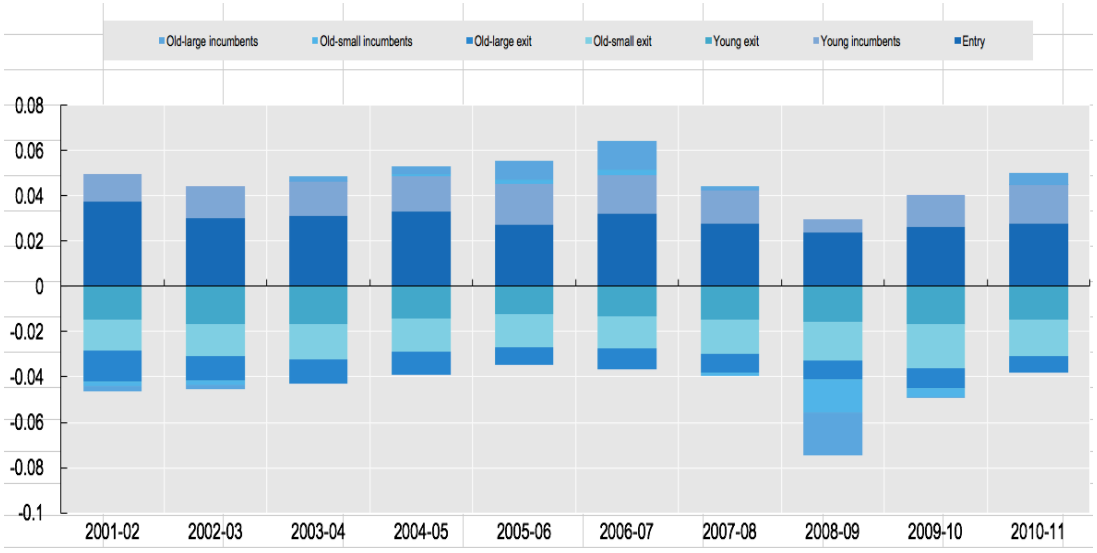

Figure 2: Contribution to net job creation rate by group of firms, 2001-11. Source: OECD calculations based on the DynEmp v.2 Database, preliminary data, www.oecd.org/fr/sti/dynemp.htm, July 2015.

Lastly, the OECD report *"Cross-country evidence on startup dynamics"* provides an interesting analysis of the startup dynamics in the economic environment. The contribution of new firms in terms of new jobs is expressed as a combination of four different factors:

- *The startup rate*: namely, the number of entrants as regards to the country's total employment. It can be considered a measure of the relative weight of entrepreneurship in the economy.
- *The average size of firms at the point of entry*: meaning the average number of employees for entrants. This measure might depend on entry barriers, competition etc.
- *The survival rate*: the number of firms that survive until or more than the third year of life over the total number of starting units. This measure indicates whether the selection process of entrants is strong in an economy.

- *The average growth rate of survivors*: the final over initial employment rate of surviving entrants. It uses to measure the potential and the growth performance of surviving startups.

The study revealed that the four elements interplay in different ways, even across economies with similar startup contributions. The most homogenous component across the countries is the survival rate, which is equal to 60% after three years from entry, to about 50% after five years, and to just over 40% after seven years. Moreover, in most countries the probability of exiting is highest at the age of two. Having a look at the employment growth of surviving businesses, it is found that the majority of surviving startups do not grow however, the proportion of small startups which grow creates a disproportionate amount of jobs. Young firms show significantly larger rates of net employment growth relative to the more established ones. However, evidence point out significant differences across countries in the extent to which new firms can grow and eventually increase the overall productivity of the economy (Calvino, Criscuolo & Menon, 2015).

Figure 3 shows the final employment of surviving startups over five years. Across all countries included in the graph, the net job creation by surviving startups is large enough to more than compensate the job destruction of those startups that exit despite the survivors representing only a small percentage of the total number of entrants.

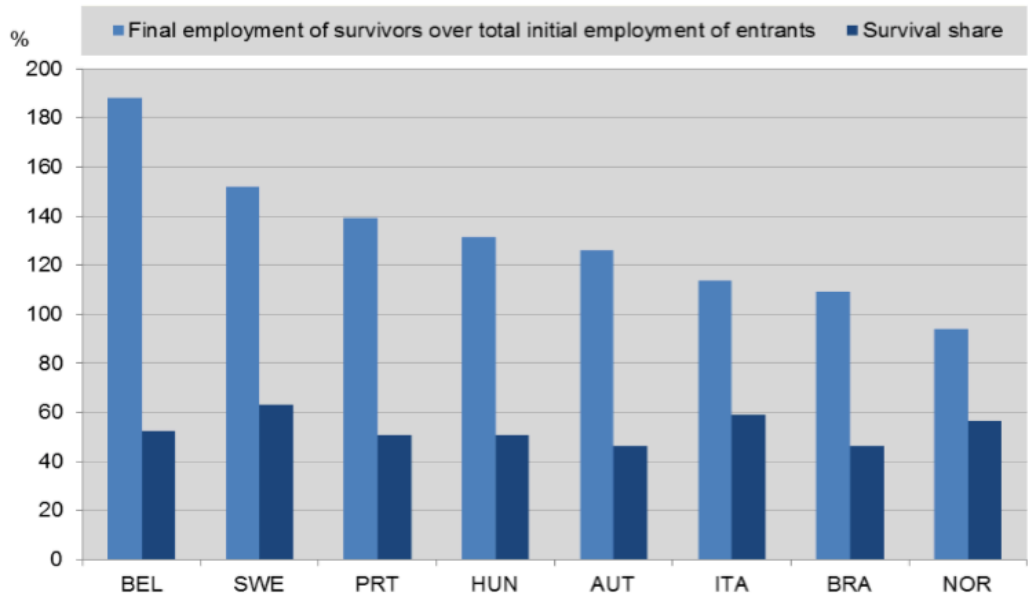

Figure 3: Survival share and job creation by micro (0-9) entrants over a five-year period. Source: OECD DynEmp v.2 database.

The huge "disruptive" power of the small group of startups that significantly grow should not be undermined. Indeed, they are responsible for a large contribution to job creation, from 21% to 51% of the total job creation by the reference group of startups.

The share of startups that survive over the first years of activity is a multifaceted indicator to evaluate the country-specific startup ecosystem. A high survival rate can be interpreted as an indicator of a supportive environment for startups. On the contrary, a low survival rate could reveal that many startups are free to enter the market and experiment risky business strategies. Given the evidence, the rate of startups that grow significantly and are able to revolutionize the economy is quite heterogeneous across the countries. This means that it is not a spontaneous phenomenon however, it can be influenced by the public support and its ability to create an ecosystem where more startups can grow and survive. If only a small number of successful startups is able to increase tremendously the net jobs creation, it is simple to imagine how a larger amount of them can positively influence the overall economy. This is the prove that promoting an ecosystem where innovative startups are able to grow without limit matters due to its economic and employment growth power. However, the intervention of the state is crucial.

1.4.1 The importance of public intervention in support of innovation: The State as a catalyst

The aforementioned research studies contribute to demonstrate the role of startups firms as engines of economic growth and job creation. Also, they introduce some observations that deserve further attention. Revealing cross-countries differences in innovative firms' dynamics, they imply that public intervention plays an influential role in shaping the environment in which successful startups can enter the market, experiment, innovate, and grow. In line with these considerations, Mariana Mazzucato in "*the Entrepreneurial State"* demonstrates the importance of public intervention in support of innovation and therefore, she challenges the minimalist view of the State in the field of economic policy, arguing to rethink it in a more proactive role. Only in this way, it is possible to maximize the potential of the

startup ecosystems. Indeed, copious opportunities are going to be missed if recent developments in innovation literature, economic theory and experiences are not also considered in setting innovative industrial policies. It takes a nimble and interventionist State to catalyze the potential into action (Mazzucato, 2013).

In the most successful economies, the state can create strategies around a new high growth area before the potential is understood by the business community. Silicon Valley industries are usually attributed to the brilliance behind the small high-tech firms. Europe is considered to lag behind the USA for its weak venture capital ecosystem. In addition, examples from these high-tech sectors in the USA are often used to argue why Europe need less state and more market in order to allow to produce its own "European Googles". Nonetheless, not so many people know that the algorithm that led to Google's success was funded by a public National Science Foundation grant. Moreover, most innovative young companies in the USA were funded by public venture capital such as the Small Business Innovation Research (SBIR) program. Is it accidental that the first input to create the Silicon Valley, "the global mecca of startups" (Compass, 2015, p. 21) comes from the State?

1.5 Conclusions

In recent decades, the unsuitableness of traditional economic paradigms of growth has been demonstrated by the inability of modern economies to lift up productivity, growth and employment following the habitual production function that is based on capital and labor. The economic recessions prompted the idea of alternative theoretical approaches to framing the revolutionized dynamics generated from a transition period towards the digital era. Hence, a growing attention has been devolved on the economic literature that identified the centrality of innovation as a crucial factor of production: the Economics of Innovation.

In the first section of the chapter, it has been tried to illustrate the main theoretical assumptions that contributed to conceptualizing innovation as the major force in the

economic growth. Awarding Schumpeter the "CEO"[5] of innovation as source of economic development, the main theorists, schools of thought, in particular the neoclassical and evolutionary growth models, has been presented to better comprehend the basis of the new paradigm of growth. Indeed, Economics of Innovation emerges on the wage of neo-Schumpeterian economics that provides an economic framework in order to support growth in today's knowledge economy.

As a result of this theoretical review, original concepts has been unearthed. Economic growth and job creations revolve around innovation, entrepreneurial activities, and market power. Innovation-originated markets provide better results than the invisible hand and price competition. Also, the innovation in a given field stimulates further innovations in related areas. In this landscape, the age of enterprises is essential to explain the dynamics of innovation: young companies tend to innovate more in an attempt to undermine older enterprises that subsequently trigger an innovation process by imitation. This concept is a suggestion for modern economies to focus on promoting new established innovative companies: startups. Recalling the words of Jeremy Rifkin, there is the need to take the cue from the "Millennials" (the digital native) and embrace a "reverse mentoring" in which the mature companies will learn from the youngest ones, naturally able to adapt to the new ecosystem, in order to stimulate the economic growth (Rifkin, 2016).

Hence, in the second section of the chapter, empirical researches have been introduced to strengthen the theoretical intuitions and explain why promoting innovative startups will make a difference. According to the evidence-based researches, it has been demonstrated that a robust and innovative startup sector is the key to sustainable economic growth and job creation. The proportion of small startups which grow creates a disproportionate amount of jobs. Young firms show significantly larger rates of net employment growth relative to the more established

[5] CEO, chief executive officer, is commonly use in the startup world to identify the founder of the company.

ones. Thus, the huge “disruptive” power of startups has not to be undermined. In addition, a cross-countries analysis on the startups dynamics proved the heterogeneous trend in the startups behavior. This depends on the way public policies are implemented to stimulate an efficient ecosystem. It is reasonable to conclude that public intervention plays a crucial role in fostering the beneficial impact of innovative startups. If a country is not friendly enough to these “disruptive” actors, innovation will develop elsewhere and the hostile country will miss the successful strategy to solve the problems occurred during the crisis: lack of economic growth and unemployment. Effective policies and strategies for innovation in other countries are the evidence of the importance of public intervention to encourage the positive influence of startups in the economy. In the following chapter, an analysis of the major industrial policies in support of innovative entrepreneurship will be presented.

CHAPTER 2
Public Policies for Innovation: a comparative evaluation of the best international strategies in support of innovative startups

2.1 Introduction

Evidence-based researches have proven that a strong and innovative startup sector is the key to sustainable economic growth and job creation. A simple equation occurs: the ecosystems with the most thriving startups enjoy the most thriving economies (Compass, 2015). According to Paul Graham's quote[6], "*startups are like seeds sprinkled onto the earth. Most will die. A few will cling to life. A few will take root and thrive into huge fields that feed entire population - something needed by the entire world economy. So what is the fertilizer for startups?"* (Compass, 2015, p. 18).

The cross-countries analysis on the startups dynamics - debated in the first chapter - revealed heterogeneous trends in startups' behaviors. This suggested that their growth is not spontaneous. It depends on country-specific traits and it is based on the ability of their public policies to stimulate an efficient ecosystem where more startups can survive and disclose their beneficial impact. Taking the cue from the Economics of Innovation that identifies institutions as crucial agents of the innovation process, it is reasonable to assume that public intervention through appropriate policies is one of the main fertilizers for startups. As a result of these premises, the aim of the chapter is to evaluate the international policies in support of startups that are responsible for creating successful ecosystem and fostering economic growth and employment.

[6] Paul Graham is an English computer scientist, venture capitalist and essayist. He is known for being the co-founder of Viaweb (today Yahoo! Store) and the founder of a leading startup accelerator, YCombinator.

Generally, complete and effective innovative entrepreneurship policies are focused on four areas of action:

1. Programs addressing entrepreneurship culture;
2. Access to finance;
3. Reduction of regulatory barriers;
4. Programs targeting specific groups.

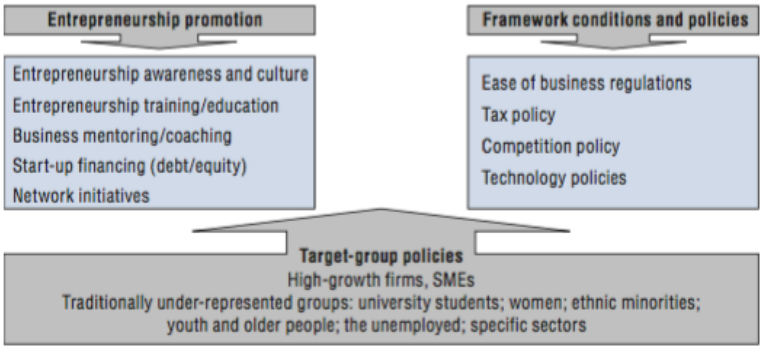

Figure 4: An entrepreneurship policy framework. Source: (OECD, 2014)

In particular, the first group includes innovative entrepreneurship promotion programs in order to raise awareness in the society; training and education initiatives (e.g. business plan competitions, students' simulations of startups projects); mentoring programs to help new entrepreneurs (e.g. business incubators, accelerators); network initiatives to strengthen the abilities and chances of entrepreneurs through knowledge spillovers. The second group pertains programs to facilitate the access to finance, both debt and equity finance (e.g. startup grants and loans, programs to support venture capital and business angels etc.). In the third grouping, there are measures to simplify business regulations (e.g. startup administrative compliance or bankruptcy legislation); special taxation and social contribution regimes for new firms; competition policy for new entrants (e.g. antitrust measures). Finally, the fourth area of action deals with tailored entrepreneurship policies for underrepresented groups such as university students, women, minorities, older people and the unemployed (OECD, 2014). Starting from

this general policy framework, innovative entrepreneurship has been encouraged by countries in various ways (with more or less effort) generating different outcomes. Figure 5 reveals the 20 best global startup ecosystems.

Figure 5: The Global Startup Ecosystem Ranking. Source: (Compass, 2015).

It can be noted, without surprise, that US is the leading country due to its major number of successful startup ecosystems (Silicon Valley, New York City, Los Angeles, Boston, Chicago, Seattle and Austin). Hence, its innovative public policies deserve a special attention to comprehend how they contribute to creating such a "Startup Eden". Furthermore, the global report ranks three European countries in the best positions: The United Kingdom[7], Germany and France. This encourages the thesis to further evaluates the implementation of the EU innovation policies in general and the ones of those States in particular. To sum up, the aim of the chapter is to reveal the innovative legislations in support of startups and their successful impact on the creation of fertile startup frameworks. Finally, the comparative overview will be useful to the future discussion of the Italian specific policy in order to better comprehend what Italy could learn from the others to

[7] Although the United Kingdom is not a member state of European Union anymore, the current work considers it as part of Europe for the purposes of the analysis. Indeed, its startup's policies were formulated and implemented before the decision of exit that was taken on the 23rd of June 2016.

improve its ecosystem.

2.2 A successful strategy: "Startup America" Initiative

The American administration took concrete actions to improve the environment for high-growth startups focusing on four key areas: unlocking access to capital; connecting mentors and entrepreneurs; reducing barriers and accelerating innovation (Startup America, n.d.).

2.2.1 Expanding access to capital: The Jobs Act

On the 5th of April 2012, the *Jobs* (Jumpstart Our Business Startups) *Act* was introduced in order to allow startups to raise capital more efficiently accelerating their growth while maintaining important protection for American investors. What are the provisions of this groundbreaking policy?

Firstly, the creation of a new category: "Emerging Growth Companies" (EGC). To have this status, a company should be privately held and have less than $1 billion in revenues. It can keep the EGC status for a maximum of 5 years or until it does not exceed $1 billion gross revenue. According to the Act, the emerging companies are exempted from ordinary regulations and tax burdens. Secondly, the legislation allows advertising and general solicitations of potential investors (previously prohibited). In substance, the American companies, now, can advertise the capital offer received on newspapers, magazines, websites, television, radio and seminars. This change offers a new level of transparency and democratization to finance by giving investors more choices and allowing entrepreneurs to raise capital more efficiently. Also, it institutionalizes the crowdfunding[8]. Today, startups can raise up to $1 million per year from small investors through web platforms,

[8] Crowdfunding consists in the use of small amounts of capital from a large number of individuals to finance a new business. Crowdfunding takes advantage of the networks of friends, family through social media and websites to spread the word about a new business and attract investors. It has the potential to increase entrepreneurship by expanding the pool of investors from whom funds can be raised beyond the traditional banks and venture capitalists. (Crowdfunding, n.d.).

democratizing and easing the access to capital. Investors are protected by the requirement that crowdfunding has to occur through platforms that are registered and controlled by the Government.

The further provision included in the Act is a relaxed Initial Public Offering (IPO). "IPO On-Ramp"[9] makes it easier for young high-growth firms to go public giving them more flexibility to plan their access to public markets and incentivize the employment. Indeed, this provision enables a company to retain its private status while it is growing without being forced to undertake prematurely a public offering.

To conclude, the rationale of the *Jobs Act* is to allow entrepreneurs to have more capital due to less complex procedures, creating more startups and hiring new employees. The amount of funds that can be invested in innovative companies is expanded. The lack of restrictions on advertising potential investors and the institutionalization of crowdfunding allow early-stage companies to successfully solicit investments from a larger amount of investors. Prior to the *Jobs Act*, the potential investor pool for private offers was limited to wealthy investors with a minimum net worth of $1 million. Today, anyone with a positive net worth is legitimized to invest capital through a private placement. Thus, more investors can take part. Also, companies can remain private for a longer period. They can increase capital without going public and the limit of allowed shareholders before the public registration is extended from 500 to 2,000. This enables such companies to support their balance sheets and to remain private enterprises until the suitable time for going public. Finally, the EGCs have the ability to compensate employees with stock instead of the salary (U.S. Cong., 2012). The provisions included in the *Jobs Act* can be considered the key of the fertile startups ecosystem in the US.

[9]IPO is the first sale of stock by a company to the public. A company can raise money by issuing debt or equity. If the company has never issued equity to the public, it's known as an IPO (Investopedia, n.d.).

2.2.2 Connecting Mentors and Entrepreneurs

Recognizing the lack of experience that early-stage startups could face, the American administration departments launched tailored mentorship programs such as incubators and accelerators to match experienced mentors with companies all over the country. These mentors provide targeted advices on revenue, employee growth and financing achievements allowing startups to "stay afloat" and accelerate their success. To mention few of these initiatives, the *Entrepreneurial Mentor Corps program* is focused on clean energy startups while *incubators by the Departments of Veterans Affairs* are established to help Veterans launching their own business to be reintegrated in the society. The public mentorship programs are copious (SBA.gov., n.d.).

Also, the Department of Education and Labour is committed to advance innovative entrepreneurship education into colleges, universities and low-income youth in order to provide the main guidelines and prepare future generations to innovative high-tech entrepreneurship. To this aim, it organizes challenges to invite students to have innovative solutions to educational issues preparing a business plan for a new company or NGO that would develop it (U.S. Department of Education, n.d.).

2.2.3 Reducing Barriers

The American Government acted to reduce several barriers to foster and stimulate its startup ecosystem and enable the innovative companies to develop without obstacles. Firstly, America provides specific visas to foreign entrepreneurs who want to launch a company and to foreign students who desire to stay in the country after graduation to establish their own innovative business. Moreover, the administration helps skilled and experienced laid-off workers allowing them not to lose their unemployment benefits. Indeed, the *self-employment assistance program* (SEA) authorizes American entrepreneurs with a potential business idea to receive unemployment benefits as long as they work full-time to develop and launch their

own innovative business (The White House, n.d.). The American public effort to reduce barriers for the development of innovative business is also present in implementing policies that make the student loan burden more manageable for young entrepreneurs - *Pay as You Earn program* (U.S. Department of Education, 2012). Finally, the SBA reinvented the Small Business Innovation Research website allowing innovative companies to access all information, related to federal agencies, for events, funding opportunities and more.

2.2.4 Accelerating Innovation

Being aware of the importance of R&D to foster innovation, American Government has worked to accelerate the innovation process in several ways. It dictated all federal agencies with research facilities to ease the transfer of innovations from the laboratory to the market making more effective the funds that every year the federal Government invests in R&D. The collaboration between private and public researches eases innovative companies grants for R&D, spurring innovation. For instance, National Science Foundation launched the *Innovation Corps* stimulating an innovative ecosystem that combines scientific discoveries with entrepreneurial and business communities (NSF Innovation Corps., n.d.).

Furthermore, *the American Invents Act* - passed under Obama administration- introduced a new patent system that assists companies and investors to focus on innovation and job creation instead of facing costly delays and litigations regarding the acquisition of patents rights. This legislation reduces patent application waiting time and embraces a faster innovation process (U.S. Cong., 2011).

2.2.5 The positive impact of the "Startup America" Initiative

Even before the financial crisis, the quota of innovative American companies that

were launched and survived was already in decline. It was clear that the flowering of young companies was headed in the wrong direction and the public policies in support of innovation were outdated (Case, 2014). The aim of the "Startup America" policy was to revitalize the American economy starting from the fast-growing, young companies that have been considered by the Economics of Innovation theorists the engines of growth due to their ability to better embrace innovation. Does the American Government initiative succeed in its goal?

Since the launch of the policies included in the Startup America Initiative the progresses were significant. The benefits of the Government action are visible today. The young companies have more access to capital demonstrated by the Initial Public Offering that is up (IPO Center, 2016). This is a signal that high-tech companies go public more easily and expand their business. It also indicates that innovative companies increased their survival rate. In addition, more people are involved and work in startups than ever before. In short, it is the evidence that the strategies to improve the startup culture, the attempts to connect mentors and entrepreneurs and the initiatives to accelerate innovations are working.

Furthermore, recent data published by the National Venture Capital Association revealed another positive trend: the venture capital ecosystem deployed $58.8 billion across the United States in 2015, marking the second highest full year total in the last 20 years. Hence, the amount of venture capital flowing to startups increased and some regions saw an explosion of growth (this is confirmed by the Figure 5 where various American environments beyond the Silicon Valley are ranked in the top positions). The effect is clear: while Silicon Valley remains the dominant center of high-tech more and more capital is flowing to the rest of the country that has historically been starved of essential investments. Entrepreneurs in 47 states raised venture capital in 2015. This is a testament to the reach of the venture capital industry and the increasing strength of startup financing ecosystems across America through the *Jobs Act* that facilitates the access to capital and extends the pool of investment possibilities (National Venture Capital Association, 2016). The greater chances to receive financial supports allows a larger number of startups

to constantly grow and survive enabling them to unveil their potential benefits: positive contribution to American economy and additional employment opportunities.

2.3 Innovation Policies in Europe: aiming at a "European Silicon Valley"

The United States has been consistently more innovative than Europe. Between 2007 and 2010 the US Innovation Index was more than 33% higher compared to the European one. Europe has always lagged behind North America in term of hosting an innovation-friendly ecosystem. Nonetheless, over recent years, it has been noticed a decreasing gap between American and European innovation performance. In 2014, differences became smaller: The US Innovation Index was 22% higher than the European one. Hence, the trend reveals promising signs of improvement for Europe and a process of convergence towards United States that remains stable in high levels of innovation (Directorate-General for Internal Market, Industry, Entrepreneurship and SMEs et al., 2015). The enhancement of an "Innovation Union"[10] is ascribable to the establishment of several policies adopted at the beginning of 2014. The *EU Framework Programme for Research and Innovation* - better known as Horizon 2020 - set strategic directions to build a European innovation policy able to foster new entrepreneurship, research activities and innovation in the member states. The disruptive innovation power of startups began to be considered more seriously among policymakers aiming to stimulate a productive European startup ecosystem (Osimo, & The Startup Manifesto Policy Tracker Crowdsourcing Community, 2016).

2.3.1 EU Framework Program for Research and Innovation (Horizon 2020): The Entrepreneurship 2020 Action Plan

[10]Innovation Union is the European Union strategy to create an innovation-friendly environment that makes it easier for unique ideas to be turned into products and services that would bring economic growth and jobs.
Retrieved June 28, 2016, from http://ec.europa.eu/research/innovation-union/index_en.cfm

The EU Framework Program for Research and Innovation (Horizon 2020) is the new EU funding plan for research and innovation, running from 2014 to 2020 with a €80 billion budget. Implemented by the European Commission and various internal directorate generals, Horizon 2020 includes the support for innovative companies. Briefly, the program is built on three main "pillars": *Excellent Science* focuses on basic scientific researches; *Industrial Leadership* - managed by DG Enterprise with a budget of €14 billion - contains special efforts for innovative business funding and gives risk financing (€2.8 billion) through loans from the European Investment Bank; finally, the third pillar is *Societal Challenges* that funds potential solution to social and economic problems (European Commission, 2011).

In line with the purpose of this research thesis, the chapter is going to focus on the second pillar's initiatives that are planned to implement a European startup ecosystem. Indeed, the *Entrepreneurship 2020 Action Plan* is one of the programs that provides policies to boost startups' growth spurring European economic development and job creation. The use of European structural funds is crucial to implement the strategy. The Entrepreneurship 2020 Action Plan is decisive to unleash entrepreneurial potential, to remove existing obstacles and to revolutionize the culture of entrepreneurship in Europe. It aims to ease the creation of new businesses and to erect a more supportive environment for entrepreneurs. It focuses on three areas of intervention: entrepreneurial education and training to support growth and business creation; strengthening framework conditions for entrepreneurs by removing existing barriers and sustaining companies in crucial phases; fostering the culture and nurturing a new generation of entrepreneurs (European Commission, 2013).

With regard to the first area of action, the plan boosts national entrepreneurial training education for young people and adults by using structural funds resources in line with the national job plans. Notably, it makes use of the *European Social Fund* (ESF) as an education tool for those who are not engaged in education, employment or training. It takes advantage of the training possibilities available under the *European Agricultural Fund for Rural Development* (EAFRD). Also, it

promotes entrepreneurial learning modules for young people participating in national Youth Guarantee Schemes (European Commission, 2013).

To implement the second area of intervention pertaining the creation of an environment where entrepreneurs can flourish and grow, the plan eases the access to finance, supports entrepreneurship in the crucial phases, provides less stringent bankruptcy procedures and the reduction of regulatory burdens. The most relevant programs to accelerate startups growth are the financial supports for testing new technologies, strengthening venture capital, business angel investments, incubators and loans for high-potential innovative companies. The reinforcement of these sectors increases the quality and financial returns of startup projects. Entrepreneurs need funds to commercialize R&D and test innovative business models. Backed measures for these areas are guaranteed by the European Commission under the Programme for the Competitiveness of Enterprises and SMEs (COSME), the SMEs Instruments and the European Structural Funds.

1) *COSME* with a budget of €2.3 billion supports companies in improving access to finance in the form of equity and debt; easing the access to market; enhancing framework conditions for the competitiveness and sustainability of "Union Enterprises"; promoting entrepreneurship and entrepreneurial culture (Regulation (EU) No 1287/2013, 2013).

2) *The SME Instrument* tends to promote European innovation leaders, investing and supporting potentially cutting-edge businesses. The SME Instrument is designed to support innovation and the internationalization of innovative companies through grants and loans. The SME Instrument provides a budget of almost €3 billion aiming to introduce highly innovative products and services to the market. It is organized in three phases, with the goal of transforming ideas into concrete solutions (European Union, Executive Agency for SMEs, 2011):

The phase 1 - "Idea to concept" - lasts 6 months and includes a non-repayable grant worth €50,000 to evaluate the technical feasibility and potential of innovative business models. The phase 2 - "Concept to Market-Maturity"- lasts 1-2 years. The

Commission grants co-funding loans for companies to develop and test their innovations. The value of the loan is between €500,000 and €2.5 million. This phase focuses on the creation and development of prototypes models that would be competitive on the market. The result that companies should achieve at this stage is the development of a new product, process or service that is competitive in the global market. Finally, the Phase 3 - "Prepare for Market Launch"- supports companies to facilitate the marketing of innovative products and services through networking initiatives, training and mentoring.

3) *The European structural funds for Innovation*. Europe makes available through its cohesion policy the use of structural funds' resources to set up supportive schemes for innovative companies in its member states' regions. They are the European Social Fund (ESF), the European Regional Development Fund (ERDF) and the European Agricultural Fund for Rural Development (EAFRD). In particular, the latter ensures access to financing of entrepreneurship at an early stage of innovative business in agriculture.

Finally, the last intervention area of the Plan is nurturing the culture of entrepreneurship in Europe. The European Commission establishes several initiatives to spread the word through events that include meetings with entrepreneurs, case studies, lectures, workshops and much more (European Commission, 2013).

2.3.2 Trends and development of the European Startup Ecosystem

It is essential to evaluate the role that the European political regulations play in the national startup ecosystems in order to understand if EU startup policies are on the right track contributing to the development of national startup frameworks, especially in those countries with fragile infrastructures. In fact, the commitment of Europe should also be the fulfillment of supportive policies for feeble realities enabling them to grow through aids and spillover effects. Doing so fosters the economic growth and the employment of European developing countries. It, also, generates incremental benefits for the strongest environments through a larger

market where to sell their innovative products. If well supported by EU incentives, member states' startups can positively play their role of job creators and engines of economic growth increasing the overall prosperity in Europe and strengthening its position at the international level. Hence, measuring the trends of the EU innovation strategies allows managing future unified policies tailored on startups. The European Startup Monitor lies its *raison d'être* in understanding the impact of European policies in support of innovative startups. According to the last report, the current situation is clear: the European startup ecosystem is growing at a fast speed but still need to be improved.

Most of the European startups, 48.5%, are in a startup stage meaning that they overcame the phase in which founders are still developing their business idea and have not generated revenue. The 23.9% of startups are in the growth stages where they have reached market maturity and a solid revenue growth. Only 1.6% of startups are in the later stage where they are established in the market. This is not so unexpected due to the recent age of the strategies. The European Startup Monitor proves that startups are important engines of jobs. In fact, each startup accounts for a gross impact of employment of 12.9 jobs after 2.5 years. Also, European startups provide a considerable number of full times jobs as well as the opportunities for the development of professional careers in the form of internships and student jobs.

With regard to the financing aspect, most European startups indicate that their major capital source is their own savings (69.1%) followed by the support from friends and family (25.1%). In the third place there are public funding and subsidies (21.9%). Finally, business angels support (21.3%). This means that the access to finance needs to be improved at the European level. Moreover, overall 8 of 10 startups in Europe generated revenue in the last fiscal year (81.9%). Among these one, more that half generated up to €150,000.

To conclude the European startup environment is rated as satisfying however, there is room for improvements. The biggest challenges are sales, raising capital, product development, more unified political regulations and financial supports. An

important evidence is inferred from the report: The United Kingdom, Germany and France are the most flourished startup ecosystems. Nonetheless, this outcome is attributable to their specific regulatory frameworks rather than the European Union support (European Startup Monitor, 2015). The Startup Europe Partnership (SEP) monitor[11] confirms the evidence of the European startup monitor examining the scaleups startups, meaning the startups that able to raise over than $1 million and increasingly grow in Europe. The SEP mapping database identified a total of 990 scaleups in five countries: the United Kingdom, Germany, France, Italy and Spain. Among these five countries, UK leads far ahead with 399 scaleups followed by Germany and France. The 990 scaleups of these five countries managed to raise a total of $23 billions of capital. Differences among the European countries in the amount of capital raised are even bigger than the differences in terms of number of scaleups. UK scaleups alone raised nearly half of the total amount (1.7 times more financing than German startups and 3.6 times more than France). Nonetheless, France and Germany host almost the same number of scaleups and they are able to compete with the UK. Hence, the SEP report is a further confirmation of the leader startup ecosystems in Europe: UK, Germany and France. In the following paragraph, the chapter will analyze their innovative policies (Startup Europe Partnership (SEP), 2015).

2.4 United Kingdom: "Innovate UK"

Since the late 1970's, UK innovation policy has been working on improving the environment to promote and support general R&D investments, innovation and new innovative business. According to the Global Startup Ecosystem Ranking, the United Kingdom is the first country in Europe in term of successful environment for startups. Certainly, the leading position has a multiplicity of reasons however,

[11] Established by the European Commission in January 2014 at the World Economic Forum in Davos, SEP is the first pan-European platform dedicated to transforming European startups into scaleups by linking them with global corporations. In 2015, the SEP published the SEP monitor to present the evidence of the European scaleups startups.

it is not a mere fortuity that the most successful startup ecosystem in Europe is at the same time the one that has the oldest policies in support of innovative entrepreneurship (Compass, 2015).

The availability of risk capital for high potential young companies has always been a key policy issue for UK Government in the field of promoting economic development through the growth of innovative enterprises. UK Government recognized the necessity to developed policies to stimulate investments from private citizens and economic agents by providing incentives. To this aim, the Enterprise Investment Scheme (EIS) and Venture Capital Trusts (VCTs) were established (Cowling, Bates, Jagger, & Murray, 2008).

Introduced in 1994, the EIS helps small higher-risk unquoted companies to raise external growth capital. It offers a range of tax relieves for private individuals who invest in shares in these companies. Any person who invests under the scheme is able to take an income tax reduction based on the amount invested. The VCTs were introduced in 1995. They are designed to increase the supply of finance to unquoted, higher risk companies by encouraging individuals to invest in young enterprises indirectly through a managed fund structure. In fact, VCTs are a tool for private investors who desire to invest in a portfolio managed by a professional investment manager. Over the years, policy evaluations indicated that EIS and VCTs investments have a positive effect on the capacity building of recipient companies. Hence, the UK Government still count on these schemes to unleash the access to capital (Cowling et al., 2008).

In 2007, UK launched "Innovate UK", a governmental agency that works to enable the development of an innovative ecosystem and support the high-tech companies. It determines which technology drives future economic growth. It funds the strongest opportunities, connects innovators with great ideas and help them to launch and build successful businesses (Innovate UK - Gov.UK., n.d.).

Two of the latest policies of UK Government in support of innovative companies

concern the crowdfunding and R&D tax credit schemes. Firstly, the new regulatory framework for crowdfunding - regulation PS14/4- was adopted on 01 April 2014. It promotes crowdfunding as an alternative financing method for individuals and businesses, while offering protections to investors (similar to the American Jobs Act). Secondly, there are two R&D tax credit schemes which differentiate between the size of the company. Both allow companies an enhanced tax deduction for their R&D expenditure (Osimo, et al., 2016).

2.4.1 The impact of UK innovation policies on its Startup Ecosystem

The United Kingdom has one of the most vital startup ecosystems worldwide. A lively cultural scene attracts young businesses. *Tech Nation 2016*, a study co-finance and co-sponsored by the UK Government, is the most comprehensive analysis of the UK's digital tech economy. It demonstrates the efficacy of its policies on the startup ecosystem, especially the financial strategies. It reveals that the UK's digital tech industries are growing 32% faster than the rest of the UK economy, meaning an easy access to capital. In addition, it shows how these industries are driving economic growth, employment and regional development. The English startups are creating employment opportunities and accounting for 1.56 million jobs across the UK. The increasing of UK digital skills is also thriving employment beyond the tech sector. This demonstrates one of the main assumption of the theorists of the Economics of Innovation: innovation in a specific sector stimulates innovations in other areas that are not technologically involved (Tech City UK, 2016).

2.5 Germany: "The High-Tech Strategy"

Germany has the second thriving startup scene in Europe. It hosts a multitude of tech entrepreneurs and digital startups. The German Government has shown its support for startups in the "High-Tech Strategy" providing the infrastructure for creative ideas to prosper and turn into successful new businesses.

Launched in 2006, The High-Tech Strategy has represented the first public support to build an innovative ecosystem in Germany. The initiative combined the resources of all Government ministries, around €4 billion per year, to develop innovative technologies. The objectives and programs were updated in the new "High-Tech Strategy 2020" launched in July 2010. Built on the successes of the first strategy, this initiative aimed to further intensify conditions for innovation in the country giving room to the main agents of change: startups. The public programs "EXIST", "IKT Innovativ", "INVEST" and "High-Tech Gründerfonds" are helping to increase the numbers of startups and support them especially in the early phases of new technological developments. Also, a crowdfunding legislation is implemented (Federal Ministry of Education and Research, 2014).

1) Led by the Federal Ministry of Economy and Energy, the funding program EXIST encourages university students to start their business before they graduate and guides them after their degree. It can be grouped in 3 measures. The "EXIST promotion of university-based startups" supports technology startup teams in university environments. It, also, provides for the development of a culture of entrepreneurship at universities and research institutions. "The EXIST Business Startup Grant" supports students, graduates and scientists in preparing innovative startup projects. Finally, the "EXIST Transfer of Research" funds what it is necessary to prove the technical feasibility of startup ideas to prepare the launch of the business (Faas, H., 2014).

2) The Federal Government, through funding program "INVEST, Subsidy for Venture Capital", allows innovative startups to have better access to venture capital funds. It awards investment subsidies to business angels who invest in startups and young companies. To enable INVEST incentives to have their full effect, the subsidies are exempted from taxation (Federal Ministry of Education and Research, 2014).

3) The "High-Tech Gründerfonds" provides initial financing for newly-established

tech companies and supports them with know-how and networks. The High-Tech Gründerfonds is able to offer significant funds through its extensive connections with worldwide venture capital actors and powerful private investors.

4) Also, "Gründerwettbewerb IKT Innovativ", is an effort aimed at significantly increasing the numbers of innovative startups in the information and communications technology (ICT) sector. It is a competition among ICT startups to receive founded feedback on their own ideas. The outstanding plans can be awarded with seed money. In addition, advising support is provided through a broad network of experts.

5) Finally, a crowdfunding regulation, set out in the Small Investor Protection Act, came into force in 2015.

2.5.1 The effectiveness of the High-Tech Strategy on the German Startup Ecosystem

The European Monitor for Germany reveals its successful startup ecosystem. There is sufficient initial financing for startups. Business angel investments are on the rise. This would be the proof of EXIST and INVEST programs' success. On the contrary, it has been noticed the difficulty of further capital funds related to advanced stages. Also, it has been demonstrated that startups in Germany are significantly contributing to job creation and generate substantial revenues for the economy. Another interesting result is that founding a startup is a clear career choice. Many startup entrepreneurs do not consider a job position of an employee in a traditional company as a viable alternative. This is the success of the programs that promote innovative entrepreneurial culture. To conclude there is always a room for improvement however, Germany is on the right track especially with the programs for universities (Ripsas & Hentschel, 2015).

It is interesting to dedicate few lines to a comparative analysis of the two leading European countries for digital startups: UK and Germany. The German ecosystem

is much younger than the English one. Berlin has always had conventional technology companies however the sector of internet firms is only about five years old. Thus, Germany is a tech toddler while UK is a teenager. Yet, there are big differences in the urban environment in which both ecosystems exist. For instance, London is expensive and fast-moving while Berlin offers lots of open space, good value for money and a Mediterranean speed of life. Beyond the differences, the ecosystems have some features in common. They are comparable in size; Germany has a similar support infrastructure to UK (e.g. co-working spaces, accelerators etc.); both environments are also decidedly international (numerous startups in both cities were founded by immigrants).

To conclude, the United Kingdom is the European leader in the field of digital startups. However, some traits should be considered with regard to the future development of the ecosystems and a potential switch in trends. In Germany, for instance, the innovative firms do not have to share the city's economic stage with other knowledge-heavy industries which dominate the United Kingdom. In the long term, this can be a competitive advantage for the German ecosystem. Indeed, it is easier to attract the best, most talented people who will be directed to the startups world without being in competition with champions like Facebook and Google that recruit the highest number of digital high-skilled figures in UK (The Economist, 2013).

2.6 France: "La French Tech"

Launched in 2013 by the French Government, *La French Tech* initiative is aimed at fostering and supporting the French startup ecosystem. Under this policy, the Government enhances already existent public funding for startups by providing €200 million to private initiatives in order to speed up the growth of French digital companies. It makes €15 million available for reinforcing the attractiveness of France as one of the major high-tech nations at the international level. La French Tech is supported by a team, the French Tech Mission, which works closely with the Ministries of Economy and Finance, Foreign Affairs and the General

Commission for Investment. Its partners are the national operators that under the French Tech coordinate their funding actions for startups. For instance, the Deposit and Business Bpifrance (BPI), France's public investment bank. In particular, the BPI is a key player in the local investment scene, providing more than €1 billion per year in investment funding for a wide range of innovative companies. France also has a system of subsidies and grants available for early-stage innovative companies, designed to facilitate entrepreneurs to initiate their first business (La French Tech, 2013). Beyond the public sector funding, the French Government has set up other policies to support the national startup ecosystem. The following lines report the main actions.

1) Tax incentives for new businesses. France introduced a specific status for young innovative companies "*Jeunes entreprises innovantes*" in the 2004 Finance Act. This allowed France to gain a groundbreaking position in tax incentives policies for innovative companies and to be awarded as the third startup ecosystem in Europe (Compass, 2015). France's favorable tax scheme is not new however, what has changed is the stabilization of the tax code. Previous financial instability had led to regular tax code changes, making investors and entrepreneurs insecure. The enhanced French Tech Initiative has led to big increases in both confidence and growth. In particular, the *Jeunes Entreprises Innovantes* (JEI) allows new companies with JEI status not to pay costly social taxes for their first eight years of operation. Also, the R&D tax credit *Crédit d'Impôt Recherche* provides fiscal exemptions for startups engaged in research and development activities.

2) *Crowdfunding legislation.* In 2015, the French Government changed legislation concerning the generation of capital through crowdfunding. Under the new rules, startups can raise up to €1 million per year through crowdfunding campaigns. This is a considerable increase from the previous limit of €100,000. The legislation also removed earlier restrictions around the type of companies that are able to raise such funds and eased administrative burdens surrounding crowdfunding initiatives (The Autorité des Marchés Financiers, 2015).

3) *Centers of excellence.* France's *pôles de compétitivité* (competitiveness clusters) represent a government initiative to support the rise of French tech entrepreneurs. These clusters are support systems designed to help startups and foster collaboration among all the agents of innovation. There are currently 71 clusters. Each group contains both large and small firms, relevant research bodies and educational institutions. These clusters present advantages for startups connecting them with SMEs, other entrepreneurs and larger companies within the same space (Bloch, 2016).

4) *French Tech Ticket.* It is a new visa package to encourage extra-European entrepreneurs to launch tech startups in Paris. Through this "startup" visa, foreign entrepreneurs are eligible for support including a work visa, renewable grant money, office space in an incubator, mentoring and English speaking advisor programs. The initiative is still limited and it is not having a huge effect on the overall French tech system however, it is a showcase for the country's growing culture of innovative entrepreneurship and another positive demonstration of the government's effort for the growth of the tech sector (La French Tech, 2013)

Lastly, on the 26th of January 2016, the French National Assembly adopted a law "Towards the Digital Republic." It intends to tackle many of the uncertainties faced by tech startups and to further simplify rules. Time will tell us about the effects.

2.6.1 The French startup-friendly ecosystem

Although there is always room for Government enhancements, the French startup ecosystem highlights a great progress. As a consequence of the Government's support for the rising tech sector, France is a friendly environment for new high-tech businesses. The numbers are the evidence of the success.

Tax incentives for new business conduce to greater innovation. Since 2004, there

have been $987 million[12] in tax exemptions for 4.500 young innovative enterprises. In addition, since the reform of the research tax credit in 2008, France has been the country that offers businesses the most generous R&D tax treatment. In 2012, almost 20.000 companies benefited from France's research tax credit. The number of R&D investments increased. Through the French Tech initiative $245 million were invested in private-sector initiatives to help digital companies grow faster and succeed internationally. Almost $18 million were given to support labs and attract foreign talent, entrepreneurs and investors. Paris alone hosts more than 4.000 tech startups with 100.000 square meters of co-working spaces. There are more than 50 private accelerator programs in France. Hence, it is reasonable to conclude that French Government stimulates a vivid startup environment through its policies (La French Tech, & Business France, 2015).

2.7 Conclusions

Suitable public policies in support of innovative startups are the principal ingredients for the development of thriving ecosystems where the agents of innovation can unveil their role of economic growth architects and job creators. Successful strategies deserve attention in order to be ideal models to generate spillover effects. The purpose of the chapter has been to evaluate the policies in support of potential high-growth, young companies with regard to the most successful startup ecosystems (according to the latest Global Startup Ecosystem Ranking). The comparative overview has been used as a tool to highlight the friendliest public measures to set innovation in motion.

Firstly, we have analyzed the "America Startup" Initiative, the supportive policy of the leading startup ecosystem in the world. The evaluation highlighted the

[12] The official report from the French Government evaluates the funds in American Dollars.

effectiveness of a measure that facilitates the access to capital to innovative companies and extends the pool of investment opportunities: The American Jobs Act. Since its launch, the United States registered an increase in the amount of venture capital flowing to startups and various regions saw an unprecedented explosion of growth.

Secondly, it has been noticed that three European countries were positioned in the top 20 of the global ranking. This has encouraged deeper attention for European policies wondering if the integrated regulation framework had a role in the outstanding outcome. It has been shown a great progress in terms of measures in support of startups and a process of convergence towards The United States. However, the path of Europe is still long and a more unified political regulation framework for startups is needed. This has led to conclude that the success of the three European ecosystems, namely the United Kingdom, Germany and France is influenced by their specific regulatory initiatives. Hence, the successive paragraphs have been focused on their policies.

The United Kingdom has been found to have similar traits to the American environment, especially in its attention to making risk capital available to high potential young companies in order to promote their development. The Enterprise Investment Scheme and Venture Capital Trusts have been demonstrated to have a positive effect on the capacity building of startups. Whilst the German High-Tech strategy has been recognized successful especially in the funding program EXIST that encourages university students to start their business before they graduate and guides them after their degree. Also, the fact that many startup entrepreneurs do not consider to be an employee in a traditional company as a viable alternative is the symptom of a strong innovative entrepreneurship culture in Germany. Finally, France's tax incentives policies for innovative companies has been shown as the more efficient to stimulate the growth and success of startups in France. In prticular, the *Jeunes Entreprises Innovantes* (JEI) and the R&D tax credit.

Being aware of the extreme complexity of causes that surround the policies

evaluation, rough conclusions could be inferred from this international overview. Investing in facilitating the access to capital has been demonstrated the key factor for the growth and survival rate of innovative startups. Companies need funds to commercialize R&D, test their innovative products and scale-up. This assumption is demonstrated by the supremacy of the countries that adopt these successful strategies: United States and the United Kingdom. While entrepreneurial promotion programs and solid tax incentives for startups are, also, effective strategies in countries primarily based on a stronger social state and a more fragile risk investment attitude such as Germany and France. The aforementioned policies could be used as models for other countries that aim to stimulate the growth of startups generating economic prosperity and job creation in their environment. To conclude, this comparative overview is extremely useful to understand the validity of the Italian political regulation. The following chapter will get to the heart of the research thesis analyzing the Italian Startup Act.

CHAPTER 3
Italian Startup Act: an innovative industrial policy for economic growth and job creation

3.1 Introduction

The previous chapter has illustrated the most prolific strategies in support of innovative startups that contributed to the development of thriving innovative ecosystems. United States, UK, Germany and France have enabled the growth of high-tech, young companies and fostered their beneficial impact on their countries. How is Italy acting with regard to this field? Is there an Italian specific legislation to nurturing the startup ecosystem and encouraging the role of young firms as the primary engine of job creation and economic dynamism?

The absence of our country from the top 20 global startup ecosystems is an evidence that Italy lags behind compared to these fertile places (Compass, 2015). Nevertheless, since 2012, it is making efforts to be competitive through the establishment of tailored startup policies. The Italian Startup Act encompasses diversified measures for the establishment and growth of high-tech startups. The policy is in constant evolution and recent legislative provisions have improved the supports. In few years, the Italian Government has provided a clear and comprehensive definition of innovative startups and has launched new instruments to sustain their whole life-cycle, including alternative ways to remunerate employees, facilitations for the access to capital, investments and assistance in the process of internationalization (Osimo et al., 2016).

The present chapter is dedicated to the Italian regulatory framework in support of innovative startups. Firstly, the Italian productive structure is introduced to better comprehend the rationale of the measures undertaken. Secondly, the report "Restart, Italia!" is presented. Elaborated by a task force of twelve experts set up by the Minister of Economic Development, the report has greatly contributed to the

formulation of the policy. Subsequently, the main legislative measures are analyzed. In particular, the original package of strategies included in the Law 221/2012 (The Italian Startup Act) that provides the definition of innovative startups; the criteria for eligibility; an evidence-based approach to monitor the implementation and the impact of the policy. Moreover, the facilitations for the Italian startups and further strategies that are not directly included in the original legislative package are introduced. Lastly, conclusions of the chapter will be drawn.

3.2 "Restart, Italia!"

The Italian productive structure has always been based on the essential activity of its small and medium enterprises (SMEs). In Italy, the percentage of such firms is the highest compared to the main industrialized countries. Moreover, the tradition of self-employment is extremely widespread as it can be noticed in Figure 6 that illustrates the self-employment rate in 2014 among the OECD countries.

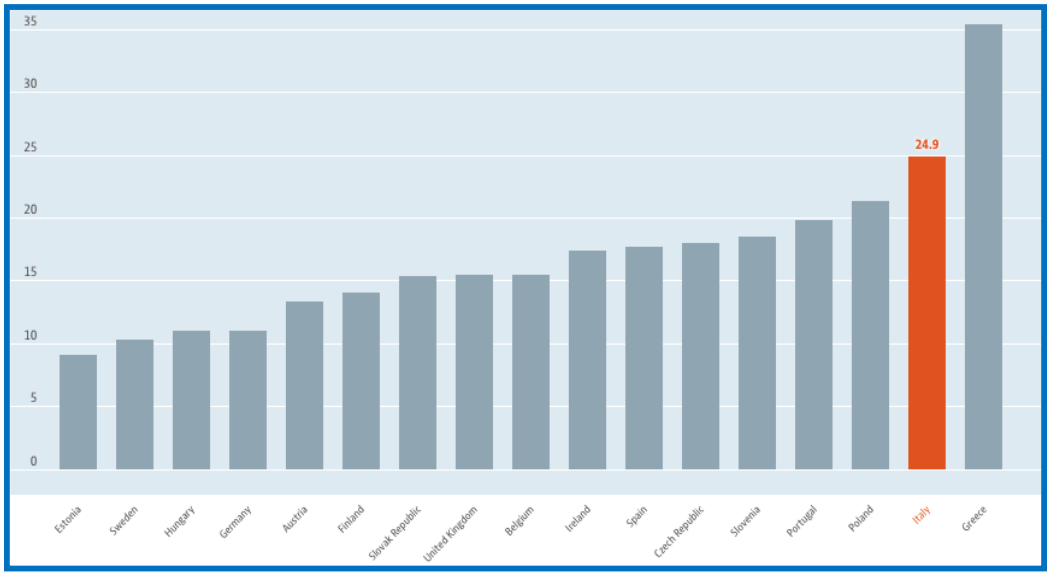

Figure 6: Self-employment rate, 2014. Source: Labour Force Statistics: Summary tables

Based on traditional sectors (textile, leather, shoes, furniture and mechanics), the Italian productive system has historically been characterized by some specific features: high levels of self-employment culture but a mediocre cultural background of entrepreneurs (very often self-made-men); the firm's owner is usually the

founder; the ownership belongs to one or two subjects; the prevalence of familial relationships; a focus on provincial and regional markets; finally, a very close contact with the territory.

The Italian SMEs have traditionally had satisfying performances during recession phases. They generally held up better than the larger ones under economic slowdowns and uncertainty. Nonetheless, in the last critical recession, they tremendously suffered for their outdated structures that were not suitable anymore to the changing and competitive environment. The Italian SMEs have revealed a modest attitude to the dimensional growth (mainly for entrepreneurs' cultural limits); a low productivity of labor and capital; undercapitalization and high dependence on the banking system; intergenerational problems (60% of Italian entrepreneurs has an advanced age, 50-70 years old, and 20% is over 70 years); large utilization of low-skilled workers; modest propensity to the internationalization; feeble tendency to invest in R&D and in innovation; finally, heavy administrative and fiscal burdens (Ministero dello Sviluppo Economico, 2015).

Hence, the last economic crisis greatly affected the Italian environment hindering the growth and the job creation in the country. The requirement to "restart Italy" became compelling. Taking advantage of the solid Italian self-entrepreneurship nature, the Government became aware that restarting from youth, innovation and a new generation of companies (startups) would have been a viable alternative to rethink and adjust the productive structure finding new solutions to old problems. In April 2012, the Minister of Economic Development, Corrado Passera, established a Task Force of twelve experts. The objective was to reflect on how to turn Italy into a friendlier place for the development of innovative startups. Indeed, the report highlighted that the growth of startups would not have pertained to one specific sector but would have contributed to innovation and development in the real economy. Startups would have spurred the revival of Italian productive sectors and been a stimulus for traditional businesses, in particular SMEs, restoring their effectiveness on the country's economy. The Report further argued that a strong support for startups would have had a relevant impact on the Italian society allowing

a greater focus on "*the development of a culture of innovation and entrepreneurship, social mobility, transparency and meritocracy as well as attracting talented people and capital from abroad"* (Task Force, 2012, p. 3).

The manifesto "Restart, Italia!" focused on the concept of innovative startup; the measures to support the three stages of their life-cycle (launching, growth and maturity); and the strategies to address problems of the Italian economic system. It highlighted the need for a simplified process to found new companies; funds and places available for the establishment of startups; exit strategies and bankruptcy; support for all those actors who can favor the starting up and growth of new innovative enterprises. Also, the report proposed the introduction of a mechanism to evaluate the impact of these new measures.

Here is the beginning of the Italian "adventure" to create favorable conditions for the establishment and development of innovative enterprises. The report "Restart, Italia!" lied the foundations of the current regulatory framework that aims to deal with the outdated Italian productive structure and build a resistant startup ecosystem in order to significantly increase the economic growth and employment in our country; foster a knowledge spill-over in the whole economic system and supports a new Italian production oriented towards high-tech and high-skilled sectors. The ensuing paragraphs will report in detail the Italian legal framework regarding innovative startups.

3.3 Regulatory Framework: "Further urgent measures for Italy's economic growth"

The Decree Law 179/2012 (Decree 2.0) on "*Further urgent measures for Italy's economic growth"* converted into Law 221/2012 is the original regulatory framework to foster a fertile startup environment in Italy. It goes beyond a simple law-making effort. It represents a new way of thinking the industrial policy-making through the public intervention for innovative entrepreneurship. Mainly known as the Italian Startup Act, the corpus of regulations provides a detailed definition of innovative startups and other relevant entities of the ecosystem. It establishes new

instruments related to the life-cycle of innovative companies, supporting them in the launch, growth-development and maturity stages.

The policy for innovative startups constantly evolves following the rhythms of the changing environment. In particular, more recent legislative measures "Decree on Labour", turned into Law 99/2013 and the "Investment Compact", turned into Law 33/2015, have improved the range of interventions in favor of innovative startups. Also, other additional strategies, not included in the former package of regulations, have broadened the framework of governmental initiatives currently in place to support innovative enterprises and their ecosystem (DG for Industrial Policy, Competitiveness and SMEs, 2016). Figure 7 lists and synthesizes the most recent regulatory steps that integrate the original Italian Startup Act.

	Date of Regulation:	Description
1	20 March 2014	Publication in the Official Gazette of the Ministerial Decree of 30 January 2014 concerning tax concessions for investment in innovative startups.
2	11 June 2014	Publication of Circular 16/E by the Italian Revenue Agency, giving details about the tax aspects of the "startup package".
3	24 June 2014	Launch of the Italia Startup Visa programme.
4	11 December 2014	Launch of the *Decreto Flussi* (Flows Decree) 2014, whose explanatory circular introduces the Italia Startup Hub programme.
5	13 November 2014	Publication in the Official Gazette of the Ministerial Decree of 24 September 2014 refinancing, as well as changing certain structural features, of the Smart & Start programme.
6	24 March 2015	Approval of Law 33/2015 converting Decree-Law No. 3 of 24 January 2015 (Investment Compact), introducing new benefits for innovative startups (6.a.), launching the policy on innovative SMEs (6.b) and other measures applicable to both categories (6.c.).
7	27 May 2015	A decree from the Minister of Economic Development introduced the Technical Committee for the monitoring and evaluation of policies in favour of startups and innovative SMEs.
8	22 June 2015	A decree of the Directorate General for Market Competition, the Consumer, Supervision and the Technical Regulations of the Ministry of Economic Development changed the registration procedures for companies by introducing the special section of the Register of Companies dedicated to innovative SMEs and a new simplified mechanism for converting innovative startups into innovative SMEs.

Figure 7: Regulatory changes from March 2014 to September 2015. Source: Ministero dello Sviluppo Economico, 2015.

3.3.1 The Italian Startup Act: definitions, criteria of eligibility and an "evidence-based" strategy

Before analyzing the backing measures provided by the Italian Startup Act and the

supplementary legislations, it is reasonable to introduce the section of the law where the recipients and the criteria for eligibility are defined. Also, the cutting-edge "evidence-based" approach contemplated by the policy deserves attention.

The provisions of Law 221/2012 apply to:

1) **New-established companies** that present a clear connection to technological innovation, regardless of their sector. A startup is defined as a new innovative company that aspires to grow rapidly and is not circumscribed to a local market. Instead, it is driven by a strong international ambition, it is based on a team with different skills, it has a strong drive towards innovation and it grows not by improvisation but through a structured and continuous planning process (The Italian Startup Act, 2012). These companies have to meet the following requirements in order to have access to the customized beneficial measures:

- be newly-established or active for less than 5 years;
- have their headquarters in Italy or in another European country however at least one production branch in Italy is required;
- have a turnover lower than €5 million per year;
- no distribution of profits;
- produce and commercialize innovative goods or services with a high technological value;
- not to be the result of a merger, and acquisition of a company or branch;
- have an innovative orientation, evaluated according to the following three criteria: minimum 15% of the company's expenses attributable to R&D activities; at least 1/3 of the total employees are Ph.D. students, holders of a Ph.D. or researchers or 2/3 of the total workforce must have achieved a Master's degree; finally, the enterprise is the owner of a registered patent or software. The company has to meet at least one of these conditions to be considered innovative (DG for Industrial Policy, Competitiveness and SMEs, 2016).

2) **Already existing companies** that were established before the coming into force

of Law 221/2012 and meet the aforementioned requirements. These entities have access to the special section of the Companies Registry as well. They benefit from the same facilitations of the newly established startups however, these benefits apply for a 4-year period if the company was established in the 2 previous years, for a 3-year period if the company was established in the 3 previous years, and for a 2-year period if the company was established in the 4 previous years (Agenzia delle Entrate § Circular n. 16/E, 2014).

3) **Innovative startup with a social goal**. They operate in specific areas with a social value according to the Italian legislation[13].

4) **The startup incubators or accelerators.** They are defined according to specific requirements in order to provide appropriate structures that are able to offer efficient support and assistance for startups.

According to the Act, special sections of the Register of Companies are created *ad hoc* at the Chambers of Commerce in order to allow the self-registration of innovative startups (with and without social goals) and certified incubators. The control is *ex-post* by the competent authority that verifies the fullfilment of all the requirements. Companies have to update two times per year the information provided at the registration and demonstrate once a year to respect the criteria. The sanction for their negligence is the withdrawal of the special status of innovative startups and the correlated benefits (DG for Industrial Policy, Competitiveness and SMEs, 2016).

A cutting-edge provision, introduced by the law, is the creation of an "evidence-based policy" built on a "regime of publicity". This means the availability of all the information to the public and the commitment by the responsible authorities to report the impact of the policy through quantitative and qualitative analyses of the data. Concerning the issue of transparency, the regulation on startups provides for

[13] The Decree-Law no. 155 of 24 March 2006 (article 2, paragraph 1) regulates social enterprises and define the social area of action: social work, healthcare and social care, education and training, environmental protection, social tourism, undergraduate and postgraduate education, cultural services etc. (Dgls 155/06).

a public electronic format of the special innovative startup register that is updated weekly by the Chamber of Commerce System. Furthermore, the publicity of the data has been implemented through the instrument *#ItalyFrontiers*, established last 13 November 2015. *#ItalyFrontiers* gives to innovative startups the opportunity to manage a public profile. Each company can upload a wide range of information concerning the development of the business, the characteristics of the team, the type of products or services offered, capital obtained etc. The data are available to everyone.

With regard to the evidence-based approach, the Italian Startup Act establishes a structured system to monitor and evaluate the new policy through the Monitoring and Evaluation Committee that is compelled to analyze the data on the performance of the policy and draw up annually a report to the Parliament on the impact of the measures. Also, the Italian Ministry of Economic Development publishes bimestrial reports on the status of the access to capital for innovative startups through the already mentioned *Fondo di Garanzia per le piccole e medie imprese* (Guarantee Fund for SMEs); trimestral reports on the trends related to the special section of the register such as employment dynamics, financial performances and the distribution of innovative companies along Italian regions; finally, it drafts four-monthly reports on the performance of the Italian Startup Visa/Hub programs.

The analysis and evaluation of public policies represent activities that are vital for the State. Being aware of the policies' outcomes allows a real improvement in the effectiveness of the choices made. Although Italy dictated these activities as mandatory for all its policies guaranteeing specialized structures which operate within entities and institutions, they are rarely implemented. Thus, the application of an evidence-based strategy for the policy on innovative startups is a giant revolution in the Italian public administration environment. It is the testament that the innovative startup policy does not impact merely on the economic development and job creation. As Schumpeter predicted more than 70 years ago, an innovation in a sector (in this case the Italian startup ecosystem) stimulates the innovation in other areas (in such context, it is circumscribed to the approach of the administration dealing with innovative startups).

3.3.2 Supportive measures for the Italian innovative startups

The Italian supportive measures in favor of innovative startups guide the young, high-potential growth companies in every aspect of their life-cycle and try to overcome the obstacles to their development. The present paragraph is comprehensive of all the beneficial measures established by the Law 221/2012 and the integrated regulatory acts considering all the updates. It has been tried to follow a logical order according to the life-cycle phases of the startup: launch, growth-development and maturity stages. Hence, firstly the measures that are relevant to the launch and growth of innovative enterprises will be mentioned. Subsequently, the initiatives useful to support them in the following stages (the maturity and the eventual failure) will be introduced.

1. *Digital signature for registration.* Innovative startups will be able to overcome the complex procedure of incorporation and its delays through a tailored standard model with a digital signature (Decreto Legge 3/2015).

2. *Cuts to red tape and fees*. Innovative startups are exempted from the conventional payment of taxes provided by the registration process to the company register, as well as the payment of the annual fee to the Chambers of Commerce.

3. *Flexible corporate management.* The most significant benefits are present when innovative startups are incorporated as S.r.l. For instance, it is possible to create shares that do not enable to vote or allow it in a non-proportional way according to the participation; also, there is the possibility to offer to the public the capital shares.

4. *Extension of terms for covering losses.* Innovative, high-risk companies might register losses during their first years of activity. If the available capital is insufficient, such losses may impact on the company's share capital. To avoid this obstacle to the growth of innovative, young company, a 12-month extension is applied to innovative startups, during which the capital can be reduced proportionally to the losses.

5. *Exemption from regulations on dummy companies*[14]*:* regulations concerning non-operational companies and companies registering systematic losses do not apply to startups. In case they cannot register appropriate revenues, they are exempted from fiscal penalties applied to the dummy companies, such as the computation of a minimum income.

6. *Easier compensation for VAT credits.* Through this initiative, startups may receive relevant benefits in terms of liquidity during the delicate phase of investment in innovation (Decreto Legge 3/2015).

7. *Tailor-made labor law.* Innovative startups comply with the fixed-term contracts regulation included in the Italian Jobs Act. However, they can benefit from some exemptions. Hence, they can hire human resources on a fixed-term contract for maximum 36 months. However, innovative startups can also hire employees through fixed-term contracts of any duration, even shorter, which can be renewed easily and for a larger number of times. Moreover, as an exception to general regulation, innovative startups with more than 5 employees are not required to follow an equal number ratio between fixed-term and open-ended contracts as the other enterprises.

8. *Opportunity to adopt dynamic salaries.* Without affecting what have been established by collective agreements, employees of innovative startups have the right to establish a variable salary according to the efficiency/profitability of the company, the productivity of the employee or other parameters related to the performance. Also, it is possible the remuneration through stock options and work for equity scheme, meaning that innovative startups may offer to employees and suppliers (e.g. lawyers and accountants) capital shares as a way of remuneration. This eases the life of innovative startups and their eventual lack of liquidity in the development stages.

[14] A dummy company is an entity created to serve as a front or cover for one or more companies. It can have the appearance of being real but lacks the capacity to function independently. (Dummy Corporation Definition, n.d.).

9. *Tax credit for employing highly qualified workforce.* Innovative startups will benefit from a tax credit of 35% of the company's total cost for hiring permanent high-skilled employment.

10. *Tax incentives for corporate and private investments in startups.* Individuals who invest up to €500.000 can benefit of 19% of tax credit. While legal entities that invest up to €1.8 million have 20% of fiscal deduction. These incentives apply both on direct and indirect investments in startups. The latter occur through other companies that invest in startups. Tax concessions are greater if the investment concerns startups with a social goal (25% tax credit for private individuals or 27% fiscal deduction for legal entities).

11. *Equity crowdfunding platforms.* In 2013, Italy was the first country in the world to regulate equity crowdfunding portals in order to increase the access to capital for innovative companies. In 2015, the already mentioned "Investment Compact" has introduced important amendments to simplify the utilization.

12. *Simplified and free access to Guarantee Fund for SMEs.* Innovative startups can have a simplified access to the Government fund that eases the grant of bank loans. The public fund supports the access to finance from the banks for innovative startups covering 80% of the bank loans up to a maximum of €2.5 million. It, also, provides for a simplified fast-track procedure.

13. *Support to the process of internationalization provided by the Italian Trade Agency.* The Italian Trade Agency offers legal, corporate and fiscal assistance; access to international fairs and initiatives that encourage the matching of innovative startups with international potential investors. The commitment of the public agency intends to support innovative startups to overstep the national borders and undertake an international growth. A Startup service card, created by the Agency, grants 30% reductions on its assistance services.

14. *Fail-fast procedure.* Innovative startups have a much higher failure rate

compared to the ordinary enterprises. To avoid the trap of the liquidation process, the regulatory framework provides faster and simplified procedures for the bankruptcy process. This allows startup entrepreneurs to restart quickly a new business project without suffering from financial and reputational costs. In essence, startups are considered non-failed entities.

3.4 Additional initiatives in support of the Italian startup ecosystem

Over the years, the Italian Government, namely the Ministry of Economic Development, adopted a series of additional strategies that are not directly included in the package of regulations. These measures integrate the policies to encourage the launch and growth of Italian startups and the development of a more fertile ecosystem.

1. *Smart&Start Italia*. Introduced in September 2014, the initiative is a financing scheme for innovative startups based in Italy. The financial support is up to €200 million and it covers 70% of the total expenses of the startup. Some preferential treatments are addressed to startups where a majority of employees are women or under 35 years old. Also, when the innovative startup is based in the South of Italy (e.g. Basilicata, Calabria, Campania, Puglia, Sicilia) further incentives are provided.

2. *Italia Startup Visa/Hub*. Launched in June 2014 by the Ministry of Economic Development with the collaboration of the Ministry of Foreign Affairs, the Ministry of Labor and Social Policies and the Ministry of Interior, Italia Startup Visa is a policy dedicated to extra-European entrepreneurs in order to attract foreign investments and a high-skilled workforce in Italy. It is a simplified visa mechanism for extra-EU applicants who plan to open an innovative startup in Italy or join a pre-existing one. Instead, the Italian Startup Hub, launched in December 2014, regards simplified visa procedures for those extra-EU individuals who already have a residence permit, however, they want to stay beyond its expiration to launch an innovative startup in Italy. Thus, their permit will be converted in a visa “for

entrepreneurs in an innovative startup" benefitting from faster immigration procedures.

3. *Contamination Labs*. The Ministry of Economic Development in collaboration with the Ministry of Education established creative spaces in order to offer university students from the South of Italy (Campania, Puglia, Calabria and Sicily) a stimulating environment in which they can develop innovative ideas and spread the startup entrepreneurship culture in the less developed area of the territory (Indeed, "Contamination" Labs).

The following measures in favor of technological innovation apply to all the Italian enterprises and not merely to innovative startups. It has been chosen to mention them for their relevant incentives that can foster the growth of new innovative enterprises. The provisions are included in the Budget Law 2015.

4. *Tax credit for R&D*. Companies that invest up to €5 million in R&D per year can benefit from a 25% tax exemption on the annual cost of their R&D activities. The fiscal benefit increased up to 50% when R&D investments focus on high qualified employees, researches activities in collaboration with universities or research organization etc. (L. 190/2014, art. 1, paragraph 35).

5. *Patent Box.* This initiative provides for fiscal benefits on income generated from the use of intellectual property. Companies can have an exemption from taxes up 50% of the income that derives from the commercial use of patents. Tax benefits on intellectual property represent a powerful measure for the attraction of R&D investments (L. 190/2014, art. 1, paragraphs 37-45).

To sum up, the creative Figure 8 illustrates the overall beneficial measures established by the Italian Government in support of the demonstrated engines of economic growth and employment.

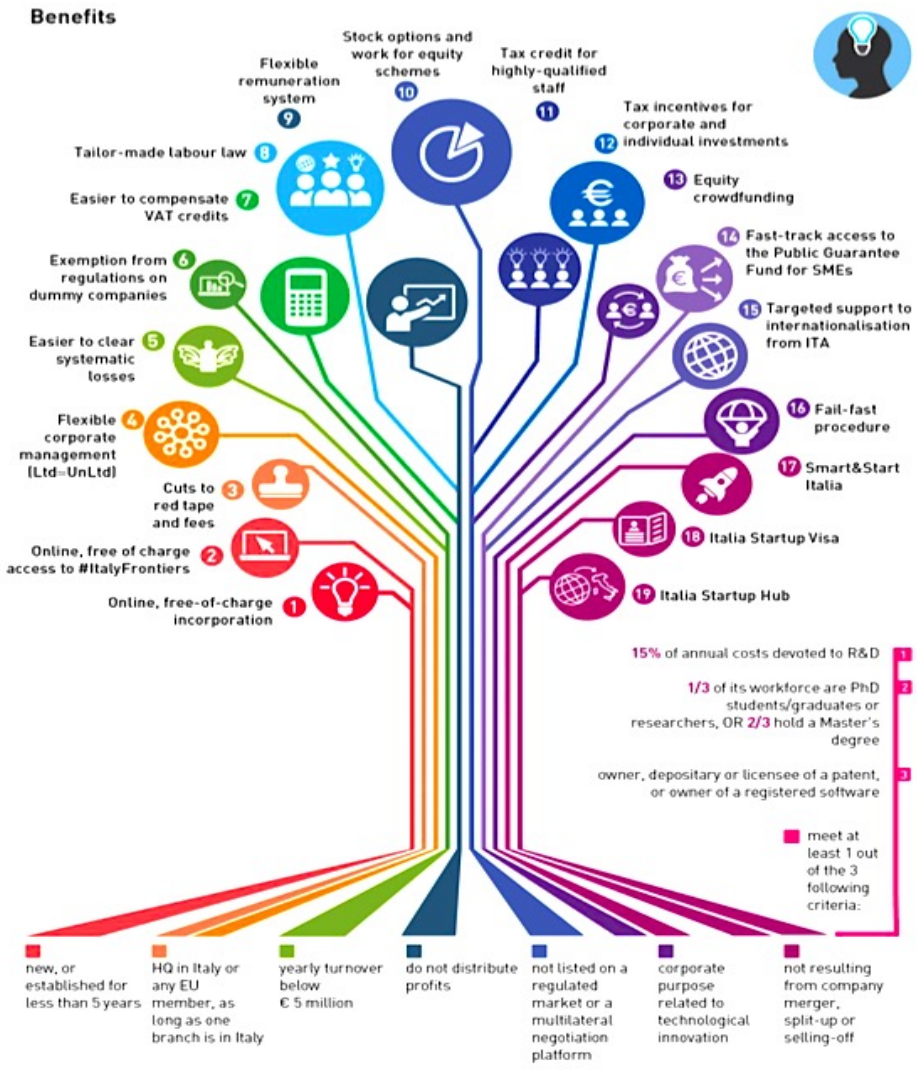

Figure 8:The benefits for the Italian innovative startups. Source: DG for Industrial Policy, Competitiveness and SMEs, 2016.

3.5 Conclusions

The commitment of the Italian Government in order to strengthen the new generation of entrepreneurship is evident. Strong public investments and regulatory strategies in support of innovative startups have been extensively reported in the chapter. They generally follow the rationale of the innovative policy framework such as facilitating the access to capital, fiscal exemptions, incentives to the R&D activities, public funds, mentoring programs for startups etc. In principle, the Italian

Startup Act is as good as the international best practices. The initiatives aim to the pursuit of sustainable development, strengthening the competitiveness of the economy and the creation of new jobs based on the centrality of innovation, which is unanimously recognized by international economic experts as a fundamental driver of economic growth. Also, they tend to stimulate social and cultural improvements. The evidence-based approach, strongly promoted by the Italian Startup Act, is a signal of changes in attitude compared with the past. Hence, through the public support for startups, there is a will to metaphorically embody a change not only in business but also, in a broader sense, at the cultural and social level (Ministero dello Sviluppo Economico, 2015).

Beyond such noble objectives and charming strategies, is the Italian startup policy effective, or is it an idealistic corpus of recommendations? Which was the impact of the Italian legislation so far? Does it enable innovative startups to spur innovation? Is it capable of creating new jobs and stimulate greater prosperity in the Italian economy? Could the feeble aspects of the Italian productive system be improved through the presence of innovative enterprises or the change does not apply to the reality? Is it worthwhile to invest in these policies, or should the Italian Government merely focus on other strategies to restart the Italian ecosystem? To conclude, is the Italian Startup Act contributing to overcome the dark side of economic recession?

The ensuing chapter will try to find an answer to these complex questions starting from the data collected on the performance of innovative companies. An analysis of the policy impact will be attempted, aiming at understanding and assessing the effectiveness of the Italian regulatory framework in support of innovative startups.

CHAPTER 4

Evaluating the effectiveness of the Italian Startup Act

4.1 Introduction

Being effective is the main purpose of a public policy, enabling it to solve the set of problems for which it was designed. The effectiveness occurs when the expected objectives are achieved or they are going to be achieved. To investigate if the policy produced or is producing the desired outcomes, an evaluation is required comparing what has been accomplished and what was planned. This process is crucial allowing decision makers to understand whether the policy has successfully reached its goals or - if a complete evaluation is still not feasible - it is on the right path towards its objectives. Indeed, the evaluation policy cycle includes two relevant activities to analyze the effectiveness of the polical measure: the *in itinere evaluation* and the *ex-post evaluation*[15]. The *in itinere evaluation* is defined as all those techniques used to examine the performance of the policy during its implementation process. While, the e*x-post evaluation* includes all the practices that analyze the final outcomes, outputs and the impact of a public policy on the targeted environment (La Spina & Espa, 2011).

The work aims at assessing whether the Italian policy in support of innovative startups is on the right track towards the achievement of its objectives as officially declared in the Law 221/2012: "*Italy's Startup Act aims to create favorable conditions for the establishment and the development of innovative enterprises in order to contribute significantly to economic growth and employment, especially*

[15]The policy cycle, also, involves the *ex-ante evaluation,* a process that supports the preparation of proposals for new public policies. Its purpose is to gather information and carry out analyses that contribute defining objectives, to ensure that they can be met and that the instruments used are cost-effective. The *ex-ante evaluation* is a provision of the potential effectiveness of the policy. It is fundamental before the design of the policy, however, it does not contribute to the final analysis of its effectiveness.

youth employment. It also fosters a knowledge spill-over in the whole economic fabric and, more specifically, supports a new Italian production oriented towards high-tech and high-skill sectors. Not only that: supporting innovative entrepreneurship contributes to greater social mobility; strengthens the links between universities and businesses; makes people more inclined to take business risks; and contributes to making the country more attractive for foreign capital and talents" (DG for Industrial Policy, Competitiveness and SMEs, 2016, p.3).

In line with these premises, the attention will be concentrated on examining how the Italian Startup Act is contributing to the establishment of innovative enterprises and their impact on the economic growth and employment of the country. Indeed, the causal correlation between thriving startup ecosystems and successful economies has been abundantly debated. Missing a reasonable time span to investigate the data, the *ex-post evaluation* is not feasible yet. Also, economic growth and job creation are long-term objectives that required a fair temporal extension to realize. Hence, it has been decided to carry out an *in itinere evaluation* focusing on how the policy is being realized. The methodology of the analysis chosen to interpret the available information is a temporal comparison between the empirical evidence from moment T1 (when the first generation of data was registered) to moment T2 (when the last generation of data was detected).

Following the aforementioned technique, the chapter, firstly, will concentrate on evaluating the broad impact of the Italian Startup Act on the economic growth and job creation through its support to the establishment of innovative startups. To this aim, three variables will be taken into consideration: the startup rate; the economic performances of these innovative agents and their job creation rate. Thus, the evolution of these three factors over the time will be examined comparing the information available from September 2014 to June 2016. The startup rate is the key indicator to observe the real effect of the policy. Hence, a counterfactual

analysis of the variable before and after the coming into force of the regulation will be reported in order to strengthen the reliability of the results[16].
Knowing the trends will allow us to interpret the policy implementation status; its impact on the establishment of innovative companies (through the startup rate) and their contribution to the economic growth and job creation of the country (through the analysis of their economic performances and job creation rate). The positive role of the Italian Startup Act in fostering a flourishing startup ecosystem and its long-term contribution to economic growth and job creation will be demonstrated.

After having discussed the general impact of the policy, the second section of the chapter will analyze the implementation of the specific measures to identify the practices that are currently contributing to the effectiveness of the policy and the strategies that require improvements or changes. The aim of a more specific examination is to suggest recommendations meant to improve the Italian Startup Act and enabling it to better guide Italy towards economic prosperity and higher employment rates. Finally, conclusions of the chapter will be drawn.

4.2 The impact of the Italian Startup Act on the economic growth and job creation

This paragraph sketches an *in itinere evaluation* in order to answer the ensuing questions: Is the Italian startup policy effective? Is it capable of creating new jobs and stimulate greater prosperity in the Italian economy through supporting the establishment and development of innovative startups? It worthwhile to invest in this policy, or should the Italian Government merely focus on other strategies to restart the Italian ecosystem?

[16]The counterfactual analysis will not be carried out for the economic performance and the job creation indicators due to its irrelevance. The direct impact of the policy is on the establishment and development of the innovative startups. Although the economic growth and job creation are the expected outcomes, they are consequential effects of the policy. Indeed, the Italian Startup Act aims to nurture the Italian innovative ecosystem thus enabling the potential high-growth, young firms to contribute to the prosperity and employment of our country.

Three set of indicators will be considered:

- *The startups rate* (which is the dependent variable whose value is expected to be on the increase): it indicates the total number of innovative firms (newly founded or active for less than 5 years) that are registered to the special section of the Register of Companies, together with their geographic distribution over the Italian regions. A diachronic analysis of the startup rate will be attempted by examining the variation of trends between T1 (September 2014) and T2 (June 2016). The information inferred from this indicator includes the evolution of the number of startups in the ecosystem, their joint stock[17] and their geographical location in relation to the overall Italian companies with shared capital[18]. It aims to evaluate the impact of the Italian Startup Act on the main objective: fostering the establishment and development of innovative startups in the Italian environment and spurring a competitive startup ecosystem. The startup rate is the key indicator to observe the real effect of the policy. Hence, a counterfactual analysis of the variable before and after the coming into force of the regulation will be also reported.

- *The economic performance:* it includes the total production value of innovative startups, their R.O.I (Return on Investments) and the R.O.E (Return on Equity) that will be defined more diffusely in paragraph 4.2.2. Finding out the evolution of the startups productivity, their revenue-generating and investments capabilities, the economic performance variable has been chosen as an indicator to measure the impact of the Italian Startup Act on the second objective: the contribution of these high-tech, young firms on the long-term economic growth of the country.

[17]Capital funds held in common and usually divided into shares between owners.
[18]The data referred to the total of the Italian companies with shared capital (juridical registered as limited companies, a company limited by guarantee etc.) that do not meet the requirements to be classified as innovative startups.

- *the job creation rate*: It pertains the number of employees, shareholders (presumably directly involved in the company as partner-workers) and the youth employment rate of the innovative startups. This variable has been identified to demonstrate that the Italian Startup Act is having a noteworthy effect in terms of employment through encouraging the establishment of innovative startups. In essence, the fulfillment of the third objective of the Policy.

4.2.1 The increasing number of startups and their geographical distribution over the territory: The Italian startup rate

At the end of September 2014, the number of innovative startups registered at the special section of the Register of Companies, according to the Law 221/2012, is 2.630. They represent the 0.18% of the total Italian companies with shared capital. On the whole, the joint stock of Italian startups is €106 million that correspond to almost €40.000 for each innovative enterprise (Infocamere, 2014).

Table 1: Number and dimensions of innovative startups in September 2014

N° innovative startups	2.630
N° companies with shared capital	1.478.286
Total joint stock declared by startups	€106.242.437
Total joint stock declared by the overall Italian companies with shared capital	€ 3.424.551.172.144
% of Italian startups over the total companies with shared capital	0.18%

Source: Infocamere, 2014.

When we examine the geographical distribution of the Italian startups over the territory (considering the regional allocation) in relation to the absolute value, we

find that Lombardy is the Italian region that hosts the major number of innovative startups at the end of September 2014. In particular, 570 innovative startups, meaning the 21.7% over the total Italian startups. According to the September 2014 regional ranking, Lombardy is followed by Emilia Romagna with 287 startups (10.9% of the total); Lazio with 242 (9.2%); Veneto 207 (7.9%) and Piedmont with 187 startups (7.1%). If we consider the number of startups in relation to the total companies with shared capital of the region (precisely, per 10.000 companies), the outcomes are different: Trentino-Alto-Adige is ranked as the Italian region with the highest rate of startups with regard to the overall amount of companies with shared capital of the region. Exactly, 67 innovative startups every 10.000 companies with shared capital. On the contrary, following these criteria, Lombardy registers merely 18 innovative startups per 10.000 companies (Infocamere, 2014). Finally, evaluating the rate of startups with regard to the population density of each region, we find out that Trentino-Alto-Adige is still ranked first (11.27%) followed by Marche (6.77%), Emilia Romagna (6.45%) and Lombardy (5.70%).

Table 2: Geographical distribution of startups over the Italian regions (Classification by the 10 best regions) in September 2014

Region	**Absolute Value**	**% on the total population of the region**	**% on the total national startups**	**% over the total companies with shared capital of the region (x 10.000)**
1. Lombardy	570	5.70	21.67	18.45
2. Emilia Romagna	287	6.45	10.91	26.81
3. Lazio	242	4.11	9.20	9.82
4. Veneto	207	4.20	7.87	18.44
5. Piedmont	187	4.23	7.11	26.52
6. Tuscany	183	4.88	6.96	18.76
7. Campania	150	4.00	5.70	10.71

8. Trentino-Alto-Adige	119	11.27	4.52	67.37
9. Apulia	111	2.71	4.22	15.02
10. Marche	105	6.77	3.99	28.62

Source: Infocamere, 2014.

The most recent empirical evidence registered at the end of June 2016 - two years later the first generation of data observed- reveal increasing and promising trends. The number of innovative startups registered at the special section of the Register of Companies is 5.943. The startups represent the 0.38% over the total amount of companies with shared capital. The overall joint stock declared by the innovative startups is €328.4 millions that correspond with an average of €55.000 for each innovative enterprise (Infocamere, 2016).

Table 3: Number and Dimensions of innovative startups in June 2016

N° innovative startups	5.943
N° companies with shared capital	1.570.861
Total joint stock declared by startups	€ 328.442.969
Total joint stock declared by the overall Italian companies with shared capital	€ 3.301.102.399.822
% of Italian startups on the total companies with shared capital	0.38%

Source: Infocamere, 2016.

Observing the geographical distribution of the Italian startups over the Italian regions with regard to absolute values, Lombardy still occupies the leading position hosting the major number of innovative startups, 1.285, meaning the 21.6% of the overall startups over the national territory. It is followed by Emilia Romagna with 703 (11.8%); Lazio 601 (10.1%); Veneto 450 (7.6%) and Piedmont 387 (6.5%). At the bottom of the ranking, Basilicata with 46 innovative startups, Molise with 73 and Valle d'Aosta, 11. When evaluating the startup rate in relation to the total

amount of companies with shared capital in a region, Trentino-Alto-Adige maintains the first position with the highest rate of innovative startups, 100 startups for each set of 10.000 companies with shared capital. It is followed by Marche with 73; Emilia Romagna with 63 and Friuli-Venezia-Giulia with 62 (Infocamere, 2016). Lastly, if we consider the rate of startups with regard to the population density of each region, Marche gained the first place.

Table 4: Geographical distribution of startup over the Italian regions (Classification by the 10 best regions) in June 2016

Region	Absolute Value	% on the total population of the region	% on the total national startups	% over the total companies with shared capital of the region (x 10.000)
1. Lombardy	1285	12.84	21.62	0.40
2. Emilia Romagna	703	15.80	11.83	0.63
3. Lazio	601	10.21	10.11	0.23
4. Veneto	450	9.16	7.57	0.38
5. Piedmont	387	8.79	6.51	0.53
6. Campania	370	6.32	6.23	0.24
7. Tuscany	330	8.81	5.55	0.32
8. Marche	282	**18.27**	4.75	0.73
9. Sicily	276	5.44	4.64	0.30
10. Apulia	222	5.44	3.74	0.27
11. Trentino-Alto-Adige	**191**	**18.03**	**3.21**	**1.00**

Source: Infocamere, 2016

Aiming to examine the evolutionary trends of the startup rate from September 2014 to June 2016, the following lines will focus on a comparative analysis of the data.

Table 5: %Variation of number and dimension of innovative startups between September 2014 and June 2016

	September 2014	**June 2016**	**% variation (2014/2016)**
N° innovative startups	2.630	5.943	+125.97 %
N° companies with shared capital	1.478.286	1.570.861	+6.26 %
Total joint stock declared by startups	€106.242.437	€ 328.442.969	+209.14 %
Average joint stock per startup	€40.000	€55.000	+ 37.50 %
Total joint stock declared by the overall Italian companies with shared capital	€ 3.424.551.172.144	€ 3.301.102.399.822	-3.60 %
% of Italian startups on the total companies with shared capital	0.18	0.38	+111.11 %

In general terms, the number of startups registered at the special section of the Register of Companies and beneficiaries of the supportive measures has disproportionately grown over the period under analysis. Also, their joint stock and their presence with regard to the ordinary companies with shared capital considerably increased. In particular, the average joint stock per startup has registered a growth of 37.5% meaning the development of these companies beside their numerical evolution.

To confirm that these positive trends depend on the specific political measures, the startup rate before the coming into force of the Law is considered. Observing the

available data between 2009 and 2012, the number of registered startups in Italy was distributed as following:

Table 6: Number of Startups before the coming into force of the Law

Year	**N° of Startup**	**% Variation**
2009	1	
2010	38 (+37)	Not relevant
2011	300 (+262)	+689,47%
2012	515 (+215)	+ 71,67 %

Source: Special Section of the Register of Companies, Italian Ministry of Economic Development.

While after the coming into force of the Law (December 2012), these are the trends:

Table 7: Number of Startup after the coming into force of the Law

Year	**N° of Startup**	**% Variation**
2013	942 (+427)	+82,91%
2014	**3179 (+2.237)**	**+237,47%**
2015	5143 (+1964)	+61,78%
June 2016	5943 (+800)	Not relevant[19]

Source: Special Section of the Register of Companies, Italian Ministry of Economic Development

A strong and sudden growth in the the startup rate is registered before and after the coming into force of the Italian policy. As inferable from the data, there is not a steady and defined evolution. Therefore, it is extremely hard to evaluate the hypothetical growth of the startups without the law and compare it to the startup rate after the coming into force of the regulation in order to obtain the net contribution of the policy. Observing the values (discontinuous but positive), it is plausible that there would have been a sort of growth as well. However, the trends

[19] All the other values have been calculated considering the data till December of the year in question. The evidence is referred to June 2016, thus, it is not comparable.

post-2012 clearly shown (more visible in the absolute terms) the catalyst effect of the Law 221/2012 on the establishment of Italian innovative startups. Only the 8.6% (515) of the young firms were created before the 2013 while the remaining 91.4% (5943) saw the light of the day after the Act. Although the net impact is not computable with precision, it is reasonable to conclude that the Italian Startup Act is positively affecting and nurturing the startup ecosystem supporting the establishment of new innovative startups which declare an increasing joint stock.

Other observations can be drafted looking at the geographical distribution trends over the Italian regions from September 2014 to June 2016 in terms of absolute value.

Table 8: Regional trends in term of absolute value between September 2014 and June 2016

Regional Ranking - September 2014	**Regional Ranking - June 2016**
1. Lombardy	1. Lombardy
2. Emilia Romagna	2. Emilia Romagna
3. Lazio	3. Lazio
4. Veneto	4. Veneto
5. Piedmont	5. Piedmont
6. Tuscany	**6. Campania**
7. Campania	7. Tuscany
8. Trentino Alto Adige	**8. Marche**
9. Apulia	9. Sicily
10. Marche	**10. Apulia**

We notice homogeneous outcomes with the leadership of Northern regions. This follows the traditional economic differentiation of the Italian territory where the

South has always lagged behind in term of innovation and economic growth (the already established startups before the coming into force of the Law were - without any surprise - mostly located in the North). Even though the 2016 ranking sees Campania, Sicily and Apulia gaining ground, the data revealed strong regional disparities with regard to the Italian startup environment. This suggests the requirement of specific actions tailored for the southern regions. For instance, public agencies for the economic development traced on the Irish model (The Industrial Development Authority) could be a potential solution (La Spina, 2015). This aspect will be abundantly debated in the last chapter when some recommendations will be drafted to improve the policy.

To conclude, Figure 9 and Figure 10 thoroughly illustrate the Italian regional disparities in terms of establishment and development of innovative startups.

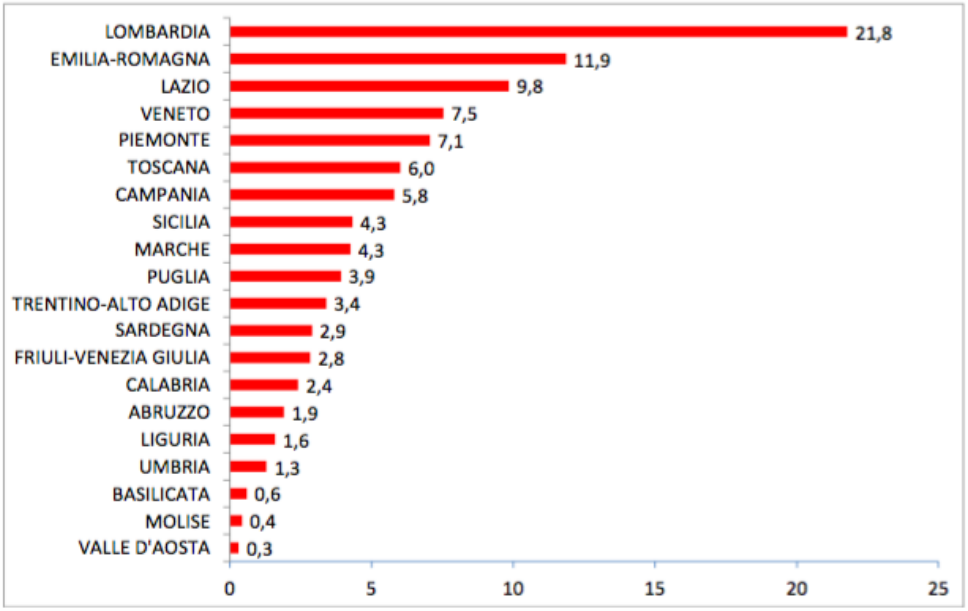

Figure 9: Ranking of Italian regions by percentage of the total number of innovative startups. Source: Ministero dello Sviluppo Economico, 2015.

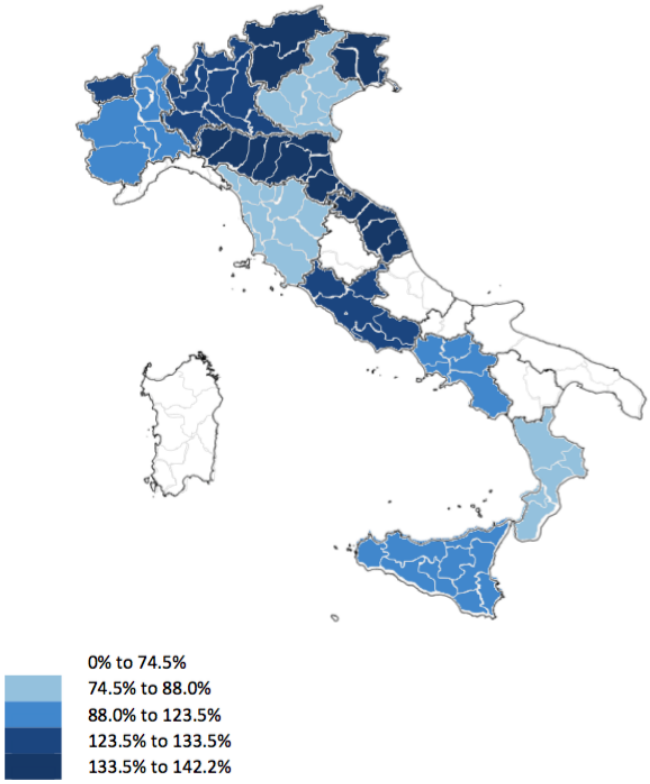

Figure 10: Innovative startups per thousand currently trading companies (Italy index = 100). Source: Ministero dello Sviluppo Economico, 2015.

4.2.2. The economic performance of the Italian startups: Production Value, R.O.I and R.O.E

The economic performance of Italian startups has been chosen as an indicator to measure the contribution of these high-tech, young firms on the long-term economic development of the country. Indeed, evaluating the evolution on their productivity, revenue-generating and investments capability allows to roughly draw conclusions on their role: Will the Italian startup be economic engines or prosperity barriers?

Being an *in itinere evaluation*, the following analysis aims to demonstrate the evolution of the economic performance of innovative startups supporting their potential long-term benefit on the economic growth of the country. The information is inferred from the financial statements of innovative startups and they are merely

available for the year 2013 and 2014. Hence, the potential growth of their economic performances can be approximately examined and further analysis will be required. Nonetheless, the evaluation of startups' economic performances through the study of the total production value, the R.O.I (Return on Investments) and the R.O.E (Return on Equity) discloses interesting and promising trends[20].

Before starting the analysis of the data, it is reasonable to define the economic indicators that are going to be observed in order to facilitate the reading and the interpretation of the outcomes:

1. *Total Production Value*: represents the value of goods or services produced by the overall companies in their activity sectors. The total production value measures the revenues of the companies thereby indicating their economic performances. If the total production value of innovative startups increases over the time, it will determine the economic growth of whole country.

2. *Return on Investment (R.O.I)*: a performance indicator used to evaluate the value of an investment or to compare the efficiency of a number of different investments. R.O.I measures the amount of return on an investment relative to the investment's cost. This variable allows comprehending the revenue-generating and investment capability of innovative startups. The increases of R.O.I over the time proves higher levels of economic performances with regard to high-tech firms and major contribution to the long-term economic growth of Italy (Investopedia, 2003).

3. *Return on Equity (R.O.E)*: the amount of net income returned as a percentage of shareholders' equity. The R.O.E. measures a corporation's profitability by revealing how much profit a company generates with the

[20]The tables are built by the author according to the available data of the Italian Chambers of Commerce. In addition, the %variation between the T1 and T2 are calculated for the purposes of the thesis.

money shareholders have invested. Fast growing companies are expected to show a higher R.O.E (Investopedia (ROE), 2003).

In 2013, the total production value of the Italian innovative startups is almost €184 millions (the value was calculated referring to innovative startups with an available financial statement: 1.400). It is quite usual that startups register net losses during the first fiscal year due to the burden of the debts at the beginning of their activities. In light of these premises, 57.4% of innovative startups, in 2013, registered losses while 42.6% presented net profits. The R.O.I and R.O.E register negative values with regard to the total amount of innovative startups. However, they record positive rates in relation to the startups with a net profit. These values are higher in the innovative startups rather than in the other companies with shared capital. Hence, when startups register net profits their revenue-generating power (and thus their beneficial incidence on the economy) is much more effective than the other companies. Moreover, for each euro of production, the startups with net profits generate €0.33 as added value, while the other companies produced only €0.22 added value (Infocamere, 2014). This indicates an evidence of the economic advantage delivered by startups with a net profit.

Table 9: Startup Economic Performance Indicators - 2013

	Total Italian Startups	**Italian Startups with net profits**	**Total Italian Companies**	**Italian Companies with net profits**
Total Production Value	€183.768.452	**€110.064.038**	1.637.555.1333.680	**1.233.897.746.731**
R.O.I	-0.15	**0.12**	0.02	**0.05**
R.O.E	-0.28	**0.21**	0.01	**0.10**
Added Value	0.13	**0.33**	0.20	**0.22**

Source: Infocamere, 2014.

Observing the same indicators for 2014, the total production value of the Italian innovative startups is €325.58 millions (the value was calculated referring to innovative startups with an available financial statement: 2.860). The 56.5% of startups register net losses while 43.5% registered net profits. The R.O.I and R.O.E still record negative values with regard to the total amount of innovative startups. On the contrary, they achieve positive rates in relation to startups with net profits. The indexes are still higher in the innovative startups rather than in the other companies with shared capital. In addition, for each euro of production, the startups with net profits still generate €0.33 as an added value while the other companies, €0.22 (Infocamere, 2016).

Table 10: Startups Economic Performance Indicators - 2014

	Total Italian Startups	**Italian Startups with net profits**	**Total Italian Companies**	**Italian Companies with net profits**
Total Production Value	€325.583.485	**€194.264.373**	€2.113.369.731.368	**€1.584.884.891.758**
R.O.I	-0.12	**0.10**	0.02	**0.02**
R.O.E	-0,28	**0.21**	0.03	**0.03**
Added Value	0.15	**0.33**	0.21	**0.21**

Source: Infocamere, 2016.

The trends seem to be steady over the period considered. The reason is quite obvious: the time span is relatively close (2013-2014). Nonetheless, the comparative analysis of the data – illustrated in Table 11 - reveals promising developmental paces.

Table 11: Comparison of Startups Economic Performance between 2013 and 2014

	Italian Startups with net profits 2013	**Italian Startups with net profits 2014**	**% Variation (2013-2014)**
Total Production Value	€110.064.038	€194.264.373	+76.5%
R.O.I	0.12	0.10	-16.67%
R.O.E	0.21	0.21	No variation
Added Value	0.33	0.33	No variation

The startups with net losses have registered a decrease while the net profits ones have grown (+2.11%) and their total production value increases (+76.5%). The R.O.E and the added value maintain constant rates while the R.O.I decreased indicating a lack of return on investments. Here, there is nothing to be worried about. Indeed, investments hardly generate revenues in a such reduced time span. The R.O.I outcomes could lay a veil of suspicion on the innovative startups. However, observing the variable trend of the other companies with net profits, the results are even worst burying the skepticism.

Table 12: Comparison of the Companies' Economic Performance between the 2013 and 2014

	Italian Companies with net profits 2013	**Italian Companies with net profits 2014**	**% Variation (2013-2014)**
Total Production Value	€1.233.897.746.731	€1.584.884.891.758	28.45%
R.O.I	0.05	0.02	-60%
R.O.E	0.10	0.03	-70%
Added Value	0.22	0.21	- 4.55%

Overall, the analyzed indicators concerning ordinary companies with shared capital register a remarkable decrease in absolute terms (except for the total value of production) and in comparison with the startups' performance between 2013 and 2014. Hence, the trends are in favor of the agents of innovation. High-growth, young firms are the "restarting point of Italy". The Government should constantly have this in mind understanding the huge potential of the Italian Startup Act on the establishment and development of these innovative actors. Through their growth as well as the increase of their economic performance (that it is currently happening) they will contribute to the economic growth of Italy.

4.2.3 The job creation rate of the innovative startups

To demonstrate that the Italian Startup Act is having a noteworthy effect in terms of employment through encouraging the establishment of innovative startups, the paragraph will focus on the evolution of their job creation rate between September 2014 and June 2016. Attention will be paid on the number of employees, shareholders and the youth employment rate of the innovative startups.

According to data from the Chambers of Commerce, at the end of September 2014, the total of innovative startups (2.630) employed nearly 12.800 workers (10.600 shareholders who are directly involved in the company as partner/workers – and 2.200 employees). The number of employees for each innovative startup is, on average, 2.7. While the number of shareholders is, on average, 4 for each innovative startup. These values are proportionally higher than those which can be found in ordinary companies with shared capital (Infocamere, 2014)

Table 13: Employment rate of innovative startups in September 2014 with regard to the total companies with shared capital

	Innovative Startups	**Overall Italian companies with shared capital**
Total n° workers	12.800	11.896.379
N° employees	2.200	8.199.696
N° shareholders	10.600	3.696.683
Average N° employees	2.7	14
Average N° shareholders	4	2

Source: Infocamere, 2014.

In 2014 - by analyzing the human capital factor - it is possible to notice that the 26.5% of innovative startups have a prevalence of young workers (aged under 35). On the contrary, only 6.44% of ordinary companies with shared capital have the prevalence of young people employed. This suggests that innovative startups have a relatively high orientation to involve young workforce and they can better contribute to overcoming youth unemployment (Infocamere, 2014).

Table 14: Innovative startups with the prevalence of young workers in relation to ordinary companies with shared capital - September 2014

	September 2014
% of innovative startup with young workers over the total	26.54%
% of ordinary companies with young companies over the total	6.44%

Source: Infocamere, 2014.

According to the data of the Chamber of Commerce, at the end of June 2016, the total of innovative startups (5.943) employed nearly 54.283 workers (23.045 shareholders who are directly involved in the company as partner/workers– and 8.193 employees). The number of employees for each innovative startup is, on average, 3.48. While the number of shareholders is, on average, 4 for each innovative startup. These values are still higher for the innovative enterprises rather than the other companies with shared capital (Infocamere, 2016).

Table 15: Employment rate of innovative startups in June 2016 with regard to the total companies with shared capital

	Innovative Startups	**Overall Italian companies with shared capital**
Total n° workers	54.283	12.023.825
N°employees	8.193	8.267.626
N° shareholders	23.045	3.756.199
Average N°employees	3.48	14.31
Average N°shareholders	4	2.6

Source: Infocamere, 2016.

In June 2016 - by analyzing the human capital factor - the 22.3% of innovative startups have a prevalence of young workers (aged under 35). On the contrary, only

6.7% of ordinary companies with shared capital have the prevalence of young people employed (Infocamere, 2016).

Table 16: Innovative startups with the prevalence of young workers in relation to ordinary companies with shared capital - June 2016

	June 2016
% of innovative startup with young workers over the total	22.3%
% of ordinary companies with young companies over the total	6.7%

Source: Infocamere, 2016.

Carrying out a comparative analysis of the data collected in term of job creation rate between September 2014 and June 2016, interesting outcomes can be highlighted.

Table 17: Comparative employment rate of Innovative startups (September 2014-June 2016)

	Innovative Startups (2014)	**Innovative Startups (2016)**	**% variation (2014-2016)**
Total n° workers	12.800	54.283	+324.09%
N° employees	2.200	8.193	+272.41%
N° shareholders	10.600	23.045	+117.41%
Average N° employees	2.7	3.48	+28.89%
Average N° shareholders	4	4	No variation

Table 17 illustrates the giant growth of innovative startups' job creation rate between September 2014 and June 2016. This suggests a relevant contribution of these innovative agents to the long-term employment rate of the country. Following

this fast-growing path, startups can create a higher amount of jobs in several sectors. The lack of variation in the average number of shareholders while considerably increasing the employees' average per company indicates a dimensional growth of innovative startups that need more workforce implying their tendency to survive and develop.

In order to better understand the relevance of the outcomes observed, Table 18 shows the employment rate growth of the ordinary companies with shared capital over the same time span (September 2014- June 2016).

Table 18: Comparative employment rate of ordinary companies with shared capital (September 2014- June 2016)

	Ordinary (2014)	**Ordinary (2016)**	**% variation (2014-2016)**
Total n° workers	11.896.379	12.023.825	+1.07%
N° employees	8.199.696	8.267.626	+0.83%
N° shareholders	3.696.683	3.756.199	+1.61%
Average N° employees	14	14.31	+2.31%
Average N° shareholders	2	2.6	+30%

The results are evident: the percentage of employment rate growth between September 2014 and June 2016 is considerably lower for the ordinary companies with shared capital rather than the innovative startups. Hence, it is reasonable to conclude that the startups which significantly grow - thanks to the benefits guaranteed by the policy- are responsible for a large contribution to the job creation. In closing, Figure 11 summarizes the growth of employment rate of innovative startups from September 2014 to June 2016.

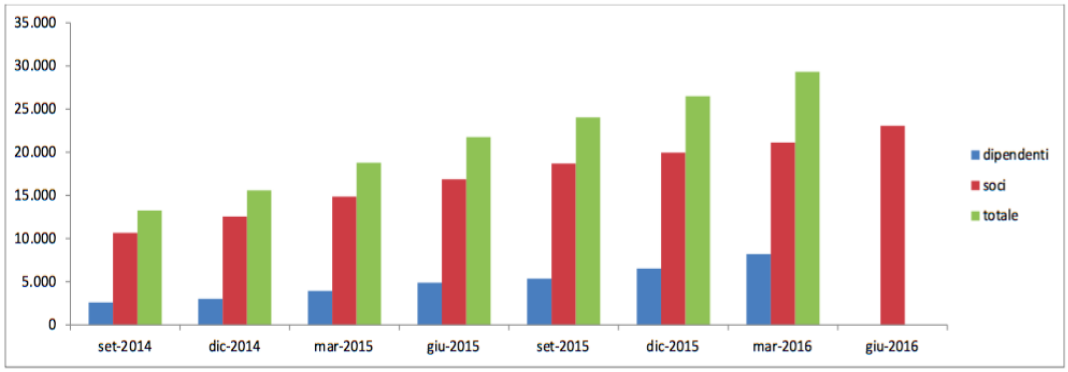

Figure 11: Employment growth rate in the innovative startups (September 2014- June 2016. Source: Infocamere, 2016.

4.2.4 The potential effectiveness of the Policy

In light of the *in itinere evaluation* carried out above, it is possible to answer the questions lied on the table at the beginning of this section: is the Italian startup policy effective? Is it capable of creating new jobs and stimulate greater prosperity in the Italian economy through supporting the establishment and development of innovative startups? It worthwhile to invest in this policy, or should the Italian Government merely focus on other strategies to restart the Italian ecosystem?

In line with the data available, the Italian startup policy is proving to be effective due to a demonstrated correspondence between the planned objectives and the outcomes. Indeed, the Italian Startup Act is revealing to support the establishment and development of innovative startups through the increase of the startups rate between September 2014 and June 2016. The total amount of innovative firms that are registered to the special section of the Register of Companies has considerably grown (+125,97 %). Their presence over the total companies with shared capital substantially increased (+111.11%). Also, their average joint stock recorded 37.5% of growth meaning their development beside the numerical evolution. Although it is plausible to imagine a sort of growth in the number of innovative startups also without the regulation, the comparative evaluation of the startup rate before and

after the coming into force of the Law confirms the catalyst effect of the Law 221/2012 on the establishment of Italian innovative startups. Only the 8.6% (515) of the young firms were created before the 2013 while the remaining 91.4% (5943) were born after the Act. This strengthens the validity of our conclusions.

Secondly, the Italian Startup Policy is contributing to increase the economic performances of these companies. Between 2013 and 2014, innovative startups with net profits increased (+2.11%) together with their total production value (+76.5%). Hence, these high-tech, young firms are proving their potential contribution to the long-term economic growth of the country.

Lastly, the Italian Startup Act is having a noteworthy effect in terms of employment. Indeed, the job creation rate of innovative startups considerably increased between September 2014 and June 2016. The overall amount of workers in the startup sectors substantially boosted (+324.09%). Also, the average number of employees for one startup increased (+28.89%). Besides the job creation capacity, the latter evidence also suggests the dimensional growth of these firms demonstrating that the increment of the employment is not only ascribable to the proportional establishment of new startups but also to the development of the already existing ones that require more workforce.

To conclude, it is worthwhile investing in this policy. According to these growth trends, the Italian startups ecosystem will constantly grow leading to a thriving economy and higher employment rate. Nonetheless, a specific phenomenon deserves particular attention: the geographical allocation of the Italian startups. Homogeneous trends can be noticed with the leadership of the Northern regions. While the South of Italy still lags behind. It is extremely important to disclose the economic engine power and the job creation potential of the innovative startups also in Southern regions. They would increasingly bring an added value in those territories in terms of innovation, economic development and employment. Since the notorious structural deficiencies of the South to create a positive environment where startups can be established and grow, tailored political strategies are required.

The idea - carried out by La Spina (La Spina, 2015) - of public agencies for the economic development and industrial policy modelled on the Irish experience (The Industrial Development Authority) could also fit for the innovative startups of the South. It will be abundantly debated in the last chapter when some recommendations will be drafted to improve the policy.

4.3 The measurable outcomes of the Italian Startup Act's single strategies

The positive outcome of the overall set of regulations included in the Italian Startup Act has been thoroughly discussed above. The impact of the Policy on the Italian economic growth and employment have not yet been fully disclosed due the long-term nature of such objectives and the young age of the startup measures. However, the Act is on the right path towards the fulfillment of these goals. To deeply understand the potential effectiveness of the Italian Startup Act, the implementation of its sectorial strategies deserves attention. By doing so, we can highlight the practices that are currently working and the ones that are not so effective. The aim of a more specific examination is to formulate reasoned recommendations to improve the policy reducing the risk of unexpected and damaging results.

Not all the measures introduced by the Law 221/2012 allow a quantitative evaluation of the performances. According to the available sources and data collected, the analysis below will include the following strategies[21] (Ministero dello Sviluppo Economico, 2015):

[21]Their examination has already been addressed in Chapter 3. However, each specific paragraph will briefly report a description of the political measure in question to facilitate the reading.

- Cuts to Red Tape and Fees;
- Tax credit for employing high qualified workforce;
- Tax incentives for Corporate and Private Investments in startups;
- Equity crowdfunding platforms;
- Simplified and Free Access to the public Guarantee Fund for SMEs;
- Smart & Start Italia;
- Italia Startup Visa/ Hub.

4.3.1 Cuts to Red Tape and Fees

According to the measure, innovative startups are exempted from the conventional payment of taxes provided by the registration process to the Company Register, as well as the payment of the annual fee to the Chambers of Commerce.

To prove the effectiveness of this strategy, the analysis is circumscribed to the innovative startups already-established before the coming into force of the Italian Startup Act and thus complying with the previous legislation. By doing so, we can compare the impact of the new regulation. The cuts to red tape and fees have been demonstrated to be a significant savings for the companies. Indeed, it has been estimated that, if they could have benefitted from these measures since they were established, they would have saved, on average, €525 each in the first year of registration in the Register of Companies, and €435 in the following four years (Ministero dello Sviluppo Economico, 2015).

4.3.2 Tax credit for employing high qualified workforce

The subsidy for hiring high qualified workers is a tax credit amounting to 35% of the expenses sustained by the company. It is limited for a maximum period of one year and an annual limit of €200.000. In particular, the company's costs covered by the subvention are the salaries. Subsidies are granted to innovative startups after a required application. The only constraint for companies is that the jobs must be maintained for at least two years.

Analyzing the hired qualified staff between June and December 2012 (the only data available) the Ministry of Economic Development has granted the provision of credits on behalf of 12 innovative startups (8 in the North, 3 in the Centre, 1 in the South). In the period under analysis, these companies hired 17 highly qualified employees on open-ended contracts requiring a total loan of €160,000 (€13,300 per company). The average annual cost per employee amounted to almost €27,000. The average age was 34 years, with a minimum of 28 and a maximum of 45. Bearing in mind the limits of the assumptions due to the shortage of data available for a longer time span, the effectiveness of this strategy can be demonstrated through the positive outcomes of the policy in such short period (June - December 2012). (Ministero dello Sviluppo Economico, 2015). The work leaves an open window to further analyses.

4.3.3 Tax incentives for Corporate and Private Investments in startups

The difficulties to receive grants from banks - in particular for high-risk companies such as startups - have led to additional strategies in order to facilitate the access to capital for innovative companies. Private equity and venture capital investments are the main alternatives to bank loans (also the equity crowdfunding that will be debated in the next paragraph). They are forms of financing that pertain the temporary acquisition of shares in companies through capital transactions. Once sold over the medium-long term, the shares create a capital gain. In particular, they concern risk investments for companies in the initial phase or consolidation capital in sectors with high growth potential. In line with the international practices, the

Italian Startup Act set up tax incentives for corporate and private investments in startups to encourage risk investment's habits.

According to the Law 221/2012, individuals who invest up to €500,000 can benefit from 19% of a tax credit. While legal entities that invest up to €1.8 million have 20% of fiscal deduction. These incentives apply both on direct investments in startups (in the case of indirect investments through other companies that invest in startups). Tax concessions are greater if the investment concerns startups with a social goal (25% tax credit for private individuals or 27% fiscal deduction for legal entities).

Even though these incentives are acceptable, the alternative forms of investments are not registering relevant trends in Italy. In 2014, the total amount of investments in private equity remained significantly below the levels recorded in other countries such as France, Germany, and the United Kingdom. Italy's contribution to the European total investments in startups is 1.7%, highlighting decreasing results, compared to 35% in the UK, 21.5% in France and 13.8 % in Germany. Also, Italian venture capital contribution over the European market significantly decrease from 1.3% in 2013 to 0.9%. (Ministero dello Sviluppo Economico, 2015).

According to the data provided by AIFI, the Italian association of private equity and venture capital, early stage funding registered a slowdown both in terms of the number of transactions, which reduced from 158 in 2013 to 106 in 2014 (a decrease of 33%) and in the amount invested, which decreased by 48% (€43 million in 2014 compared to €81 million in the previous year). The average investment fell by 21% - from €513.000 in 2013 to €406,000 in 2014 (AIFI, 2015).

The explanation of these declining trends lies the foundation on the nature of the Italian venture capitalists (VCs). The low risk tendency of the Italian VCs leads to finance mature startups with advanced commercial and technical features (a finished product, customers, track records in the market etc.). They prefer investing safely on more tangible assets that are based on stable businesses. Italian VCs have a speculative orientation for exit stages rather than the initial ones. Their attitude is

an obstacle to the establishment of new innovative startups and differentiates them from the successful American VCs. They have a great propensity towards risk and they are able to integrate multiple companies in their portfolio betting on a great performance from the most promising startup, thus, covering the other failure investments in smaller companies. The capital gain generated stimulates the support for a larger number of startups and their development. Hence, the American investors interpret the effective role of VCs: expert investors in new ventures. This is one of the crucial reason for the thriving American startup ecosystem (Klofsten, Lo Nigro, Venezia, Zambuto, Chiappini & Corbetta, 2015).

In the Italian context, tax incentives on corporate and private investments are necessary, however, not crucial to encourage a conformational change in the Italian VCs. Hence, policy measures to spur risk investments habits and reassure investors while funding startups should be undertaken together with tax incentives. In the following chapter recommendations to improve this strategy will be drafted.

4.3.4 Equity crowdfunding platforms

Since the coming into force of the regulation pertaining equity crowdfunding platforms, many operators registered their online portals to the competent authority (CONSOB) in order to increase the financial access of innovative startups. Through equity crowdfunding platforms, startups can directly collect capital from private individuals contributing to improve the fundraising. Despite being the first country that regulated the phenomenon, the impact of the Italian equity crowdfunding is still limited in terms of capital raised and companies involved. This is demonstrated by a comparative analysis of the empirical evidence collected between March 2015 and August 2016.

According to the first generation of data available in March 2015, a total of 18 offers has been published on the portals. On average, the capital requested amounted to approximately €342,000 per project. Among the 18 offers, 4 were successful; 7 were unsuccessful. The total of equity capital raised up till March 2015 is €2.3 million (Ministero dello Sviluppo Economico, 2015).

Comparing the latest data available, updated to August 2016, the Crowdfunding Observatory in Milan reveals 17 portals that entered in the Register. A total of 55 offers were displayed on the operating portals. On average, the capital fundraising target amounted to approximately €307,391 per project. Among the 55 available services, 21 ended successfully (52.5%), while, 19 had closed without success (47.5%) and 15 were still in progress. The total equity capital raised up to now is €5.758.659 (Osservatori Entrepreneurship & Finance, n.d.).

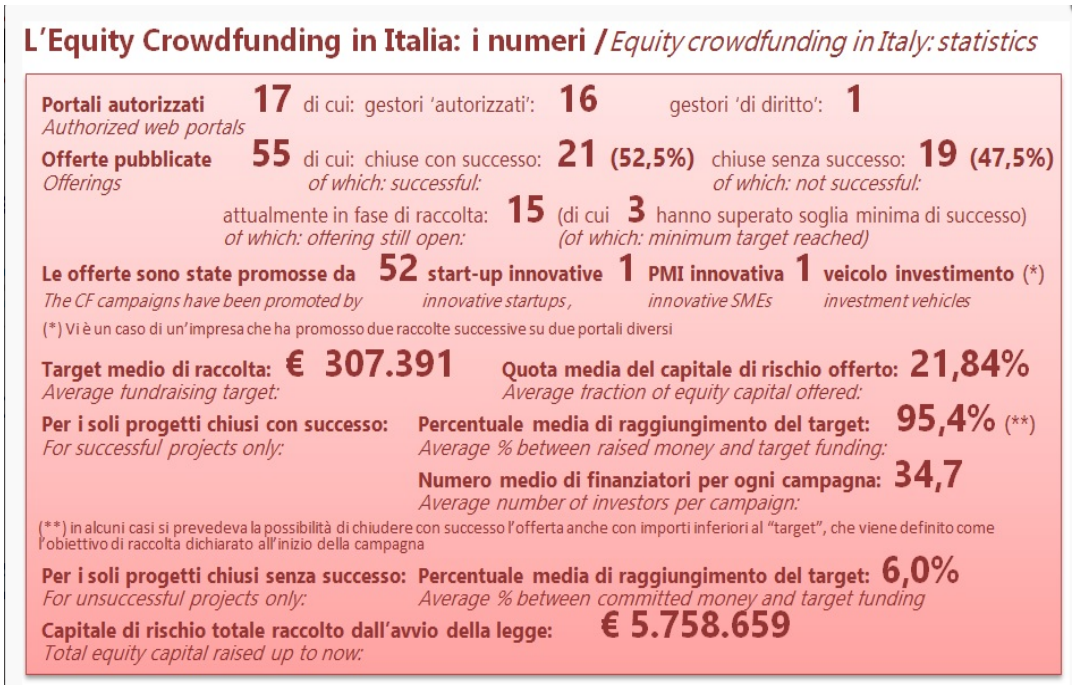

Figure 12: Equity Crowdfunding in Italy. Source: Milan Polytechnic University - Observatory on Crowdfunding).

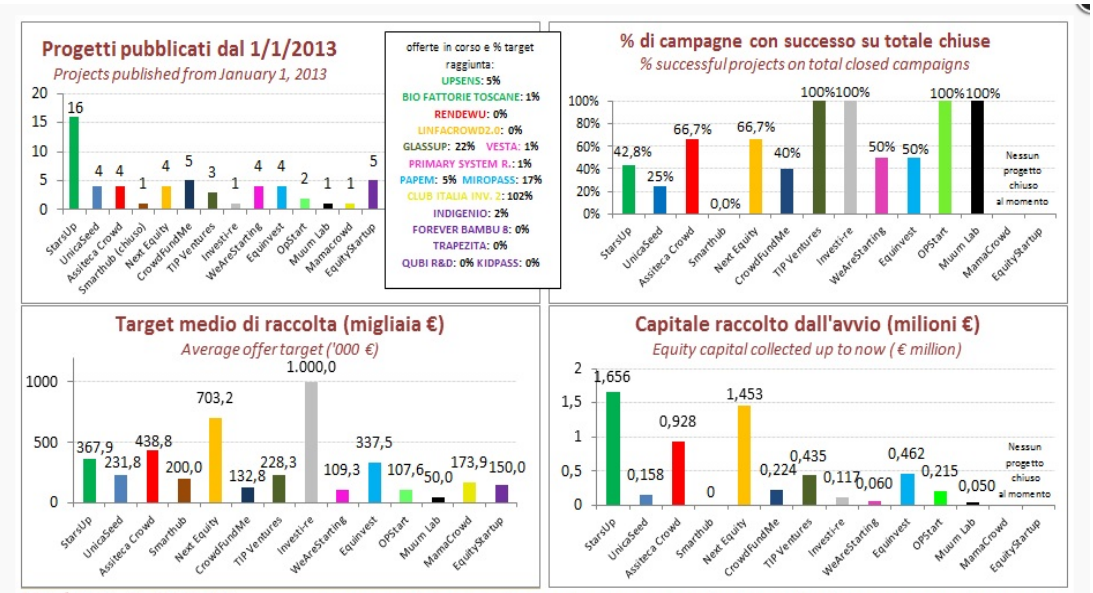

Figure 13: Equity Crowdfunding Italy in graphics. Source: Milan Polytechnic University - Observatory on Crowdfunding.

The impact of the legislation concerning the equity crowdfunding shows some improvements between March 2015 and August 2016. However, the market has not yet found a way to ensure meaningful development. Also, in this case, the explanation lies in the underdeveloped risk investments culture of the Italian environment.

4.3.5 Simplified and Free Access to Guarantee Fund for SMEs

Law 221/2012 provides innovative startups a simplified access to capital through the Guarantee Fund for SMEs (Fondo di Garanzia per le Piccole e Medie Imprese), a governmental fund that eases the bank loans' grant. The public fund facilitates the access to bank funding for innovative startups covering 80% of the bank loans up to a maximum of €2.5 million. It, also, provides for a simplified fast-track procedure. In contrast with the alternative form of financing, the access to debt capital is revealing growing trends. Comparing the effectiveness of the financing strategies provided by the Italian Startup Act, the simplified and free access to the Guarantee Fund for SMEs has been demonstrated the most successful to facilitate the access to capital for innovative startups (Klofsten, Lo Nigro, Venezia, Zambuto, Chiappini & Corbetta, 2015). Indeed, observing the evolution of the trends between

April 2015 and June 2016, it is reasonable to assume the effectiveness of the instrument.

In April 2015, the number of loans granted to innovative startups through the Guarantee Fund amounts to 526. Overall, Innovative startups have received €172.075.001. The total sum guaranteed is €135.354.836 (Divisione VII PMI, Startup e Reti d'Impresa, 30 aprile 2015).

Concerning the regional distribution of the loans, Table 19 shows the evidence observed up to April 2015.

Table 19: Regional Distribution of Loans - April 2015

Region	**N° Loans**	**Amount (€)**
Lombardy	137	80.125.534
Emilia Romagna	58	13.301.438
Veneto	58	10.496.351
Piedmont	40	7.647.253
Friuli-Venezia Giulia	38	5.499.640
Lazio	31	8.323.883
Trentino-Alto-Adige	29	6.403.000
Campania	25	5.675.052
Tuscany	22	4.341.180
Marche	18	2.611.125
Abruzzo	14	9.160.000
Sicily	13	2.827.500
Apulia	10	5.095.000
Calabria	10	1.227.545
Liguria	8	3.500.000

Molise	5	525.000
Umbria	4	4.110.500
Sardinia	3	1.005.000
Valle d'Aosta	3	200.000

Source: Divisione VII PMI, Startup e Reti d'Impresa, 30 aprile 2015.

In June 2016, the data registered a relevant increase. The number of loans granted to innovative startups through the Guarantee Fund amounts to 1.653. Overall, innovative startups have received €417.990.236 from the fund. The total sum guaranteed is €327.017.034 (Divisione VII PMI, Startup e Reti d'Impresa, 30 giugno 2016).

Pertaining the regional distribution of loans, Table 20 highlights the data registered up to June 2016.

Table 20: Regional Distribution of Loans- June 2016

Region	**N° loans**	**Amount (€)**
Lombardy	430	157.402.154
Emilia Romagna	204	46.853.938
Veneto	184	38.914.646
Piedmont	123	21.046.348
Lazio	**112**	**20.801.583**
Friuli-Venezia Giulia	92	17.506.640
Campania	**91**	**15.909.470**
Trentino-Alto-Adige	88	15.363.000
Marche	**66**	**13.795.725**
Sicily	**59**	**15.553.860**
Tuscany	55	**8.756.180**
Abruzzo	31	17.356.000

Apulia	31	8.523.000
Liguria	**28**	**6.585.000**
Umbria	**19**	**7.660.500**
Calabria	16	2.790.590
Sardinia	13	1.726.400
Molise	6	825.000
Valle d'Aosta	4	220.202
Basilicata	**1**	**400.000**

Source: Divisione VII PMI, Startup e Reti d'Impresa, 30 giugno 2016.

Bold regions registered the greatest evolution over the period under analysis. Surprisingly, Tuscany decreased the amount of loans with regard to the national average. Moreover, Figure 14 indicates the ability to access to the Guarantee fund by innovative startups with regard to the total amount of startups per region.

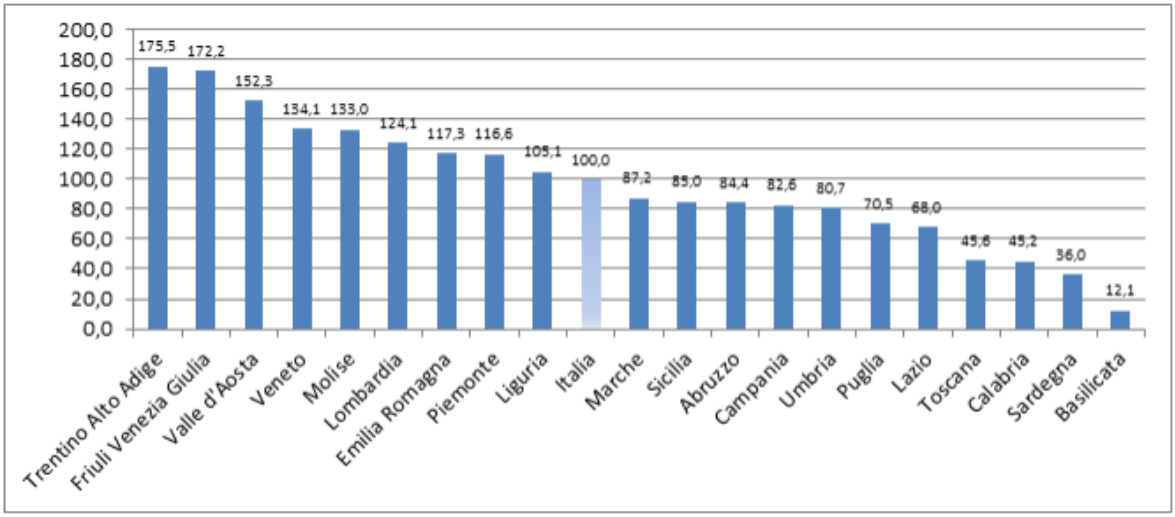

Figure 14: Access to the Guarantee fund by innovative startups with regard to the percentage of total startups per region- June 2016. Source: Infocamere e Mediocredito Centrale

To conclude, analyzing the trends in term of the number of loans granted to innovative startups from the Guarantee Fund and their amounts between April 2015 and June 2016, the growth of the phenomenon and the effectiveness of the instrument are evident.

Table 21: %variation of the number of loans granted from the Guarantee Funds and their amount between April 2015- June 2016

N° Loans (April 2015)	**N° Loans (June 2016)**	**%N° Loans (April 2015/June 2016)**	**Amount Loans (€) 2015**	**Amount Loans (€) 2016**	**%Amount (€) (April 2015/June 2016)**
526	1.653	**+214.26%**	172.075.001	417.990.236	**+142.91%**

The number of startups benefitting from this instrument has registered a relevant increase. Their access to capital and their development has been facilitated by the measure. Hence, the simplified and free access to the Governmental fund is proving to be effective and the only functioning solution to finance innovative startups since the decreasing trends of the tax incentives for private equity investments and the irrelevant results of the equity crowdfunding.

In light of the regional distribution of the loans over the Italian territory, the trends show a linear evolution. Without any surprise, the access to the Guarantee Fund is more frequent for innovative startups located in the Northern Regions. According to the analysis[22], the North of Italy is always leading the ranking while the South registers a lower tendency to access the instruments confirming the Italian regional disparities.

4.3.6 Smart & Start Italia

Smart & Start Italia and the Italian Startup Visa/Hub programs are additional strategies not directly included in the original package of regulations. However, these measures integrate the policy to encourage the launch and growth of Italian startups and the development of a more fertile ecosystem. Thus, the analysis of their implementation seems to be important.

[22] It evaluates the ability to access the Guarantee Fund for innovative startups with regard to their total per region.

Since the structural disparities between North and South of Italy, the Minister of Economic Development launched (6 March 2013) a new incentive program for businesses to develop the digital economy and promote innovation in the South. Initially named Smart & Start, the program was run by Invitalia, the National Agency for promoting inward investment and business development. It supported the creation and development of businesses, including high-tech companies in the regions of Basilicata, Calabria, Campania, Apulia, Sardinia and Sicily by assigning an overall budget of €203 million.

Evaluating the impact of the program, 55% of total applications were received within the first three months. Over 40% of applications came from Campania, pointing out a knowledge of these incentives by the entrepreneurs and academics of the area. However, only 136 applications were received from innovative startups (10.9% of total applications). This evidence can be explained by the limited number of innovative startups located in South of Italy.

Subsequently, the Minister of Economic Development ended the initiative of Smart & Start and introduced a new edition of the subsidiary measures, covering the entire national territory: the Smart & Start Italia. The instruments revealed successful outcomes nonetheless, it did not contribute reducing the disparities over the Italian territory.

From February to July 2015, 856 requests for subsidies were received. The 52% of applications involved supporting the development of existing innovative startups. More than €460 millions of subsidies were requested, and distributed. In July 2015, 625 applications have been assessed, 131 were eligible for subsidies. The 131 applications generated investments of more than €63.2 million. The total subsidies that amounted to €65.8 million were distributed as following: Centre-North: €49.1 million and South: €16.2 million (Ministero dello Sviluppo Economico, 2015).

To conclude, Smart & Start and Smart & Start Italia registered significant outcomes, however, their objective to support the innovative development of the South has not been achieved. The startup ecosystem of the South of Italy requires

tailored programs and the exclusive attention of committed authorities on the growth of the area.

4.3.7 Italia Startup Visa/ Hub

Launched in June 2014 by the Ministry of Economic Development with the collaboration of the Ministry of Foreign Affairs, the Ministry of Labor and Social Policies and the Ministry of Interior, Italia Startup Visa is a policy dedicated to extra-European entrepreneurs in order to attract foreign investments and a high-skilled workforce in Italy. It is a simplified visa mechanism for extra-EU applicants who plan to open an innovative startup in Italy or join a pre-existing one. Instead, the Italian Startup Hub, launched in December 2014, regards simplified visa procedures for those extra-EU individuals who already have a residence permit, however, they want to stay beyond its expiration to launch a high-tech company in Italy. Thus, their permit will be converted in a visa "for entrepreneurs in an innovative startup" benefitting from faster immigration procedures. The comparative analysis of the outcomes between December 2015 and April 2016 will disclose the implementation status of the programs.

In December 2015, the Italian Startup Visa program, launched on the 24th of June 2014, registered 61 applications: 18 were received in 2014, 43 in 2015. The average age of the candidates was 34 years (Ministero dello Sviluppo Economico, 31 dicembre 2015). The applications came from 18 different countries and Russia was identified as the leader for number of requests (the denominator represents the total number of nominations per country, the numerator the number of positive outcomes):

1. Armenia: 1/1
2. Argentina: 1/1
3. Australia: 1/1
4. Brazil: 3/3
5. China: 0/2
6. South Korea: 0/1

7. Egypt: 1/1
8. Japan: 3/3
9. Iran: 1/1
10. Israel: 1/1
11. Lebanon: 0/1
12. Nepal: 1/1
13. Nigeria: 0/1
14. Pakistan:0/5
15. **Russia: 14/20**
16. United States: 3/7
17. Ukraine:10/10
18. Uzbekistan: 0/1

Relatively to 61 applications, 40 were successful (65,6%) whilst 11 were rejected due to the weakness of the business plan or lack of innovativeness, and 6 were considered inadmissible missing the minimum financial or innovation requirements. Among the 40 accepted applications, 32 resulted in the issuance of a visa.

The ranking of the Italian regions chosen by the Visa holders was:

1. Lombardy: 19
2. Piedmont: 3
3. Friuli-Venezia-Giulia: 3
4. Campania: 2
5. Umbria: 2
6. Liguria: 2
7. Tuscany: 2
8. Calabria: 1
9. Emilia Romagna: 1
10. Abruzzo:1
11. Lazio: 1

12. Apulia: 1
13. Sicilia: 1
14. Trentino-Alto-Adige: 1

Still, observing the empirical evidence of the Italian Startup Hub Program in December 2015 (one year after the launch on the 23rd of December 2014) 5 applications have been received so far. The locations chosen by the candidates were: Lombardy (2); Piedmont: (1); Sardinia (1); and Calabria (1). (Ministero dello Sviluppo Economico, 31 dicembre 2015).

Now, paying attention to the last generation of data in April 2016 with regard to the Italian Startup Visa program, 100 applications were received: 18 in 2014, 43 in 2015, 39 only in the first 4 months of 2016. Hence, the first quarter of 2016 has recorded the major number of applications registering a giant increase of 62.5% compared the last quarter of 2015. The average age of the candidates is 35 years (Ministero dello Sviluppo Economico, 30 aprile 2016). The nominations came from 28 countries, 10 more than December 2015. However, Russia is still the first nation for number of applications received (the denominator is the total number of nominations per country, the numerator is the number of positive outcomes):

1. Afghanistan:0/2 (new)
2. Argentina: 1/2
3. Armenia: 1/1
4. Australia: 1/1
5. Brazil: 3/3
6. China: 1/4
7. South Korea: 0/1
8. Egypt: 1/1
9. Philippines: 0/1 (new)
10. Japan: 3/3
11. India:0/3 (new)
12. Indonesia: 3/3 (new)

13. Iran: 1/3
14. Israel: 1/1
15. Lebanon: 0/1
16. Moldavia: 0/2 (new)
17. Nepal: 1/1
18. New Zeland: 1/1 (new)
19. Nigeria: 0/1
20. Pakistan:3/11
21. **Russia: 24/22**
22. South Africa: 0/2 (new)
23. Thailand: 1/1 (new)
24. United States: 7/12
25. Ukraine:10/10
26. Uzbekistan: 0/1

Relatively to 100 applications, 62 resulted in the issuance of visas, whilst 22 were rejected due to their incompleteness.

The ranking of the regions by the Visa holders were:

1. Lombardy: 23 (+4 compared to December 2015)
2. Piedmont: 6 (+3)
3. Friuli-Venezia-Giulia: 3
4. Campania: 1(-1)
5. Umbria: 2
6. Liguria: 5 (+3)
7. Tuscany: 2
8. Calabria: 1
9. Emilia Romagna: 1
10. Abruzzo:1
11. **Lazio: 6 (+5)**
12. Apulia: 1 (+1)

13. Sicily: 1
14. Trentino-Alto-Adige: 1 (-1)

Lazio followed by Lombardy, Piedmont and Liguria are the regions with a major increase of visa issued. While, evaluating the Italian Startup Hub Program in April 2016, the trends did not change since December 2015: still 5 applications have been received so far.

To conclude, the Italian Startup Visa program recorded successful trends being on the right path to increase foreign investments and the amount of high-skilled workforce in Italy. The evolution is shown in Figure 15. On the contrary, the Italian Startup Hub did not register any improvement. The explanation of this low rate lies in the inability of the Italian public administration to communicate and coordinate the different actors involved lengthening the waiting times and making the procedures considerably difficult. Indeed, from a bureaucratic perspective, the Italian Startup Hub process is a challenge: the front office is maintained by the Ministry of Economic Development, but three other Ministries (Foreign Affairs, Interior and Labour) are involved behind the scenes, as well as embassies and consulates and police stations. Hence, better communication among the authorities involved can help to provide for improved outcomes.

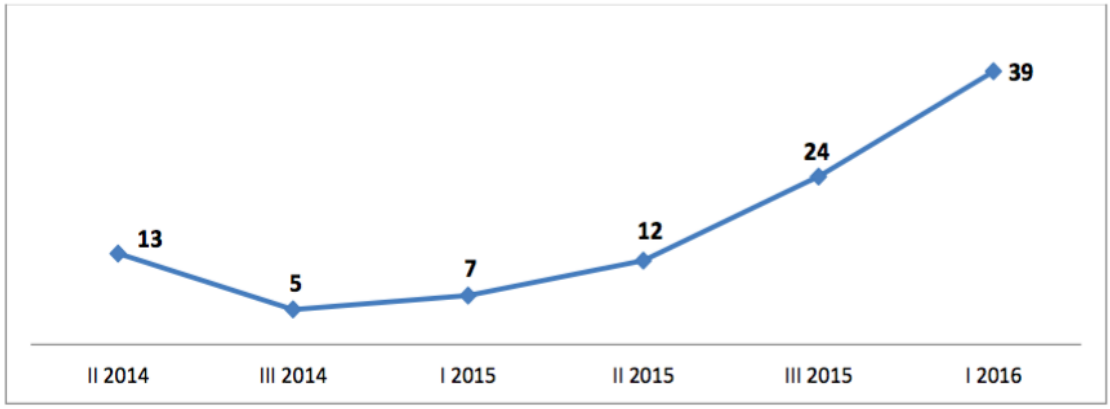

Figure 15: Italian Startup Visa Applications' Evolution. Source: Italia Startup Visa 2016

The geographical distribution of the applications is extremely interesting to observe. The North of Italy has resulted in the most desired location for foreigners to establish their innovative company. This evidence is not surprising due to the major efficiency of the system and the better quality of life perceived in the Northern regions highlighting a correlation between the attraction of foreign investment and the proper environment to support innovative entrepreneurship.

4.3.8 Findings of the Analysis

The focus on the single strategies of the Italian Startup Act has allowed to deeply identify the measures that are currently guiding the development of the startup ecosystem towards the economic prosperity and higher employment rates in our country. At the same time, the evaluation highlights the weakest strategies. It is important to specify that the reason for the ineffectiveness of some section of the policy is attributable to the difficult environment they have to deal with. In fact, theoretically, they are as good as the corresponding international practices. However, the Italian ecosystem requires other interventions to address certain problems.

Firstly, it has been proved the effectiveness of the *"Cut to Red and Tape Strategy"* that generates relevant savings for innovative startups at the beginning of their activity. Hence, it facilitates the establishment of these companies contributing to a thriving Italian startup ecosystem. Secondly, it has been demonstrated the positive impact of the "*Tax credit for employing high qualified workforce*" that encourages startups to hire qualified and young workforce being relevant for the job creation purposes.

Concerning the financing strategies to facilitate the access to capital for innovative startups, the "*Simplified and Free Access to Guarantee Fund for SMES"* has revealed to be the most effective and unavoidable practice to the achievement of the goal. Indeed, the Government support is crucial in financing innovative startups and it is showing growing results. It is essential due to the weakness of the Italian Startup Act's policies to foster alternative financing methods. In fact, "*Tax*

incentives for Corporate and Private Investments in startups" has shown not to encourage the private equity investments. The incentives are useful, however, they do not play a crucial role due to the low-risk attitude of the Italian VCs. Since the reluctance of this sector, tax incentives are not sufficient to change the Italian investors' habits and encourage the capital transactions needed by early-stage startups. Also, the *"Equity Crowdfunding Platforms"* as an alternative access to capital for innovative startups are not giving the desired outcomes.

Finally, considering the additional measures, the subsidies provided by the "*Smart & Start Italia"* program reveals to be more effective for the North of Italy. The Italian Startup Visa program is proving to grow significantly in the last period contributing to the establishment of foreign startups and high-skilled workforce in our country. On the contrary, the Italian Startup Hub has shown to be ineffective due to the lack of coordination among the responsible authorities and the heavy bureaucratic burdens.

To conclude, the analysis of the single strategies reveals three weak aspects of the Italian startup ecosystem behind the ineffectiveness of the related practices:

- **The inadequacy of the tax incentives for corporate and private investments in startups** unveils the resistance of the Italian VCS to invest in risky assets. Thus, tax reliefs are not enough to develop a thriving VC environment.

- **Smart & Start Italia is unsuitable to stimulate the development of innovative startups in the South**. Regional disparities regarding the establishment of these high-tech companies, their growth rate and their financial access capabilities are evident. The brightness of the North blurs the South. Hence, tailored political initiatives for the Southern regions are required.

- **The failure of the Italian Startup Hub** highlights the lack of coordination among the Italian competent authorities. To be attractive at the international level, Italy needs additional simplified procedures of the public administration.

These aspects need to be strengthened in order to ensure startups as the economic engines and job creators of the country. The following chapter of the thesis will attempt some policy advices to address these recoverable issues.

4.4 Conclusions

Public support in favor of innovative startups is often disapproved by those skeptical thinkers who do not recognize the potential common benefit of these economic engines. Considering startups as toys of a capitalistic system led by the United States, they believe that the Government should focus on other important and "social" strategies to restart the country. They strengthen their position with the argument that the survival rate and the economic performances of innovative startups are mediocre and do not substantially contribute to the economic growth and job creation in the country. This chapter (in general, the thesis) has been a counterargument to these positions. Through an *in itinere evaluation* of the policy's performance in support of innovative startups, it has been proved that it worthwhile to invest in it.

The first section of the chapter has concentrated on evaluating the broad impact of the regulations included in the Italian Startup Act on the establishment and development of the innovative startups and, thus, indirectly on the economic growth and job creation. To this aim, three variables have been considered: the startup rate; the startup economic performances and their job creation rate. The evolution of these three factors over the time has been examined comparing the information available from September 2014 to June 2016. The result of the analysis has been clear: the Italian Startup Act is revealing to support the establishment and

development of innovative startups through the increase of the startup rate between September 2014 and June 2016. The total amount of innovative firms that are registered to the special section of the Register of Companies has considerably grown (+125.97%). Their presence over the total amount of companies with shared capital substantially increased (+111.11%). Also, their average joint stock recorded 37.5% of growth meaning their development beside the numerical evolution. Comparing the startup rate before and after the coming into force of the Law, a further evidence of the positive impact of the policy is found. Although it is plausible to imagine an increasing rate in the number of innovative startups also without the regulation, the Law 221/2012 reveals a catalyst effect on the establishment of Italian innovative startups. Only the 8.6% (515) of the young firms were created before the 2013 while the remaining 91.4% (5943) saw the light of the day after the Act.

Secondly, the Italian startup policy is contributing to increase the economic performances of these companies. Between 2013 and 2014, innovative startups with net profits increased (+2.11%) together with their total production value (+76.5%). Hence, these high-tech, young firms are proving their potential contribution to the long-term economic growth of the country. Lastly, the Italian Startup Act is having a noteworthy effect in terms of employment. Indeed, the job creation rate of innovative startups considerably increased between September 2014 and June 2016. The overall amount of workers in the startup sectors substantially boosted (+324.09%). Also, the average number of employees for one startup increased (+28.89%).

Once reported the general impact of the policy, the second section of the chapter has focused on the implementation of the single measures to deeply identify the practices that are currently contributing to the effectiveness of the policy and the strategies that require improvements or changes. Beyond the successful instruments responsible for the positive impact of the Act, three issues have been unmasked by the analysis. Primarily, the Italian VCs do not have a natural inclination to invest in risky companies at the beginning of their activity. Thus, mere tax incentives for

corporate and private investments in startups are not enough to spur a required change of attitude. Secondly, regional disparities over the Italian territory regarding the establishment of these high-tech companies, their growth rate and their financial access capabilities are evident. The brightness of the North blurs the South. Hence, tailored political initiatives for the Southern regions are required and the problem cannot be solved with national subsidies programs such as Smart & Start Italia. Finally, the lack of coordination among the Italian competent authorities and the rusty procedures of an inefficient public administration are attempting the effectiveness of the Italian Startup Hub, thus reducing the attraction of foreign investments. Highlighting the ineffective strategies of the Italian Startup Act has allowed identifying the problematics of our innovative ecosystem. These should be addressed through the improvement/change of the non-functional political measures in order to catalyze the proved successful impact of the Act on the Italian economic growth and job creation.

CHAPTER 5

Policy Recommendations

5.1 Introduction

Startup success is not a consequence of good genes or being in the right place at the right time. Success can be engineered by following the right process, which means it can be learned, which means it can be taught - Eric Ries.

Enjoying a thriving startup ecosystem is not a mere DNA factor. In line with Eric Ries[23], success can be engineered by following the "right procedures". In the current work, the right procedures have been identified in the appropriate public policies in support of innovative startups and the way they are implemented to stimulate an efficient environment.

Also, the right procedures "can be learned" and improved. By analyzing the implementation of the Italian Startup Act, it has been learnt the practices that are currently contributing to the effectiveness of the policies and the strategies that require improvements or changes. Three issues have been unmasked:

1. The Italian VCs do not have a natural inclination to invest in risky companies at their early-stage phase. Thus, mere tax incentives for corporate and private investments in startups are not enough to spur a required change of attitude.

2. The presence of regional disparities over the Italian territory with regard to the establishment of innovative startups, their growth, their job creation rate

[23]Eric Ries is a Silicon Valley entrepreneur and author of The Lean Startup, a book on the lean startup movement.

and their financial capabilities. Hence, the existing national subsidy programs are not effective.

3. Complex procedures and lack of coordination among the competent authorities to retain high-skilled workforce from all over the word and stimulate the internationalization of Italy. Thus, the Italian Startup Hub program requires a simplification.

Taking the cue from the rationale of a "learning by doing" process, the chapter will focus on drafting feasible policy recommendations to deal with the ineffective strategies of the Italian Startup Act that were unearthed.

5.2 Policy Recommendations

What can policymakers do to address the non-functional measures and improved the successful impact of the Italian Startup Act on the Italian economic growth and job creation?

1. **Strengthening the venture capital investment market** through encouraging Institutional Investors to make public equity investments; increasing tax incentives for corporate and private investments in startups; decreasing high capital gains tax rates which can deter venture capital investments; establishing Government-sponsored networks of investors to disseminate venture capital culture in Italy and Government-sponsored trainings for managers of successful Italian industries to launch their own venture funds.

2. **Creating a Public Development Agency in support of innovative startups in the South of Italy** to reduce startups regional disparities over the territory.

3. **Enabling the bureaucratic simplification for the Italian Startup Hub Program** to improve the internationalization of Italy

5.2.1 Strengthening the Venture Capital Investment Market

Countless talented Italian entrepreneurs have difficulties to benefit from alternative forms of financing in order to increase the access to capital and develop their potential high-growth firms. As abundantly reported in Chapter 4, the principal obstacle of a leading Italian startup ecosystem is the weak venture capital market due to the resistance of Italian VCs to invest in risky assets. It is not a mere fortuity if the most thriving startup environments such as the US and the UK are also the ones with the most flourished venture capital investment market. Indeed, this form of financing allows startups to receive a larger amount of capital and disclose their giant economic potential.

Being aware of the vulnerable sector, the Italian Government has recently created a €50 million venture capital fund, managed by Invitalia and being able to mobilize the same amount of resources from the private sector. The initiative is captivating however, it needs to be flanked with other supportive strategies in order to revolutionize the Italian venture capital attitude (Ministero dello Sviluppo Economico, 2015). The ensuing lines will attempt to draft some policy recommendations to improve the Italian venture capital market starting from three sectors: the investment regulations; the taxation provisions and the dissemination of venture culture.

1. Investment Regulations:

- **Encourage Institutional Investors to make public equity investments:** Institutional investors such as pension funds and insurance companies are discouraged in Italy from making private equity investments that are seen by regulators and the actors involved as too risky. However, a key to expanding the venture capital opportunities is to loosen cultural and legal restrictions. Italy should take inspiration from the US experience in the late 1970s and early 1980s, when legislative changes to the *Employee Retirement Income Security Act's* (ERISA) allowed pension funds to engage in riskier investments and fostered the American venture capital market. The rule stated that investments should be managed with the care of a prudent man, however, suggested that a risky investment imprudent in isolation may be acceptable in a portfolio context. Also, the UK could be taken as a model in this field. Indeed, constraints on insurance companies were loosened by the 1994 *Amendment to the Insurance Companies Regulation Act*. Thus, the Italian Institutional Investors should include venture capital investments in their portfolio. Since the reluctance of private VCs, Italy requires to start from the institutional-sponsored venture capital investment to build a track record of the positive returns on investments in private equity and encourage the reluctant investors to the world of risky but profitable assets (Science Technology Industry, n.d.).

2. Taxation:

- **Increasing tax incentives for corporate and private investments in startups**: by themselves, tax incentives do not change the investors' attitude, however, they are a useful stimulus. Hence, an increase of the fiscal benefit would be required. Even though they are acceptable in Italy, in other countries, such as the UK, they are higher, thereby, more effective. For instance, the UK *Enterprise Investment Scheme* provides for 30% tax relief for individual investors (compared to 19% of Italian individual investors).

Also, legal entities received 30% of tax relief through the UK *Venture Capital Trusts* scheme (compared to the 20% in Italy).

- **Decreasing high capital gains tax rates which can deter venture capital investments.** Together with tax credits, there are back-end incentives which provide capital gains tax relief on profits earned from venture investments. These tax breaks can be incentives for reinvestment. Examples include tax deferrals for corporations and individuals to encourage the reuse of capital gains into small firms or funds in the United States and the United Kingdom (Science Technology Industry, n.d.).

3. Venture Culture:

- **Government-sponsored networks of investors to disseminate Venture Capital Culture in Italy.** Italian investors, both private and public, lack the necessary expertise, culture and knowledge on private equity investing. Since this deficiency in the Italian environment, the Government should take advantage of the other countries experience in the field. Through the creation of networks between the Italian and foreigner investors, the Italian VCs could be educated.

- **Government-sponsored training for managers of successful Italian industries to launch their own venture funds**. The most thriving Italian firms could create their own funds facilitating the access to capital for startups. Indeed, in the thriving venture capital markets, ⅓ of the investments is carried out by large industrial groups that create venture capital funds. They invest in innovative startups with the aim to discover useful technologies and acquiring them. Thus, they take advantage of the venture capital investments as a sort of R&D activity (Startupbusiness, 2016). Training the Italian managers to follow these models will increase the venture capital culture in the Italian ecosystem; will foster the access to

capital for innovative startups and will spur the innovation process in the Italian traditional industries.

To conclude, the following box summarizes the policy recommendation to improve the Italian venture capital market.

Venture Capital Policy Recommendations for Italy
Investment Regulations: ● Encourage Institutional Investors to make public equity investments. **Taxation:** ● Increase tax incentives for corporate and private investments in startups ● Decrease high capital gains tax rates which can deter venture capital investments. **Venture Culture:** ● Government-sponsored investors network to disseminate Venture Capital Culture in Italy. ● Government-sponsored training for managers of successful Italian industries to launch their own venture funds.

5.2.2 A Public Development Agency in support of innovative startups in the South of Italy: how to reduce startups regional disparities

Industrial policies to sustain the less developed areas have often been established to reduce the structural gaps of territories that presents different level of economic development such as the Italian one. It has been noticed that the most successful practices of these tailored initiatives in support of poor regions have always involved the presence of powerful public agencies provided with long mandates, wide discretionary powers, independence from the political dynamics and a supra-regional organization (La Spina, 2015).

Having observed the regional disparities in term of the establishment rate, financial capabilities and the job creation opportunities of innovative startups in Italy, it is straightforward that a specific strategy for such underdeveloped areas is required. The aim is to "start-up" homogeneously the Italian territory without privileging only the promising regions of the North. Referring to the assumptions of the professor Antonio La Spina who demonstrated that the best practices for industrial policies in support of the less developed areas include the creation of public agencies (La Spina, 2015), the policy recommendation will concentrate on the creation of a public development agency specialized in supporting the establishment and growth of innovative startups in the South of Italy in line with the successful Irish model: The Industrial Development Authority (IDA).

The Irish Industrial Development Authority was created in 1949 to harmonize the underdeveloped areas. The jurisdiction of the Agency has always included territorial marketing; management of several economic aids; Research and Development; wide authority to identify the strategic sectors to support through investments. The strength of IDA was and, it still is, the centralization: the entrepreneurs have a precise reference point for their financial incentives and they received tailored aids according to their needs. Also, the IDA has always bet on risky investments in strategic sectors such the choice to invest in the production of software. After some organizational changes, the IDA, today, is maintaining its crucial role. It increases the investments coming from the emerging markets with a potential high-growth rate. It realizes tailored interventions in favor of innovative technological companies. It selects the most promising sectors and bet on them. The positive outcomes of the Authority's activity are translated into higher employment rate and economic development of the interested areas (La Spina, 2015).

How can the Industrial Development Authority model be adapted to harmonize the regional underdevelopment of the South-Italian startup ecosystem? A Public Development Agency completely focused on supporting the establishment and development of innovative startups in the South of Italy should be established meeting the following criteria:

- Broad authority and discretional power to invest in believed strategic sectors of the south encouraging the establishment of innovative startups in those fields.

- Tailored incentives and fiscal aids according to the needs of the single startups.

- Supra-regional structure. Although the coordination with the regional entities would still be required, this organizational model will allow the Agency to have a strategic overview of the whole activities avoiding long waiting times, the inefficient use of the funds, useless wastes, and enabling to allocate resources for the most profitable sectors

- Independence from the political and electoral cycle.

If so designed, the agency could help to reduce the regional disparities and allow the less developed part of Italy to start becoming competitive as well.

5.2.3 Further bureaucratic simplification for the Italian Startup Hub Program: Improving the Internationalization of Italy

The Italian Startup Visa and Hub programs were established in line with the acknowledgment that high-skilled immigration constitutes a crucial factor for the development of a competitive and innovative entrepreneurial environment. They were created to facilitate the attraction of human and financial capital from all over the world.

Aiming at pursuing the aforementioned goals, the programs revolutionized the ordinary procedure to grant entry visas and renew residence permits. In Chapter 4, it has been pointed out the effectiveness of the Italian Startup Visa and the unsuccessful results of the Hub program. It has been explained that the reason for

the different outcomes lies in the procedures of the Italian Hub that are subjected to the coordination of more actors compared to the Visa program. Although the Italia Startup Hub process closely recalls the modalities of the Visa, there are some differences that are responsible for the divergent results.

Firstly, applicants are required to send through email an accurate description of their business plan, and documentation certifying sufficient financial resources amounting at €50.000 to be invested in the creation of the new enterprise. Secondly, the Italia Startup Visa & Hub Committee will evaluate the quality of the applications received and, if accepted, it will release, a certificate of No impediment which will enable the conversion of the residence permit (Ministero dello Sviluppo Economico, n.d.). After having obtained the Certificate of No Impediment, other actors are involved complicating the procedures. Indeed, non-EU citizen must reserve a meeting with the competent Single Desk for Immigration. After having sent the request, applicants should wait for a confirmation email setting a date for the interview. The further step after the meeting includes the authorization to the conversion from the Single Desk for Immigration. Once received it, the candidates should go to an authorized post office in order to receive the conversion documents which they must fill and then send to the competent Central Police office. At the same post office, they will also set their final meeting when the residence permit will be released (Ministero dello Sviluppo Economico, n.d.).

Long waiting times, lack of coordination among the competent authorities and countless offices where the applicants should go to obtain the conversion of their residence permit are the main problems. Although already simplified, these long bureaucratic procedures discourage foreigners candidates that are used to a faster online process in their countries. Hence, the policy recommendation the thesis attempts to improve the procedures is to reduce the number of competent authorities centralizing the responsibility in the hand of the Ministry of Economic Development and allowing to digitalize every single step.

5.3 Conclusions

Through the *in itinere evaluation* of the Italian Startup Act's measures, three political strategies have revealed themselves to be ineffective, not having been able to generate the expected outcomes: Tax incentives for corporate and private investments in startups; Smart & Start Italia to foster the development of innovative startups in the South of Italy; finally, the Italian Startup Hub program. Their tenuous results have allowed disclosing relevant issues of the Italian Startup ecosystem: feeble Italian Venture Capital investment market; regional disparities over the Italian territory with regard to the establishment, development, job creation rate and financial opportunities of the Italian innovative startups; finally, long waiting times, lack of coordination among the competent authorities and bureaucratic burdens. If not fixed, in the long term, those critical issues can prevent the Italian Startup Act to foster its demonstrated successful impact towards economic prosperity and higher employment rates. Here is the rationale of the policy recommendations proposed in this chapter. Indeed, it has been tried to theorize some feasible solutions in order to improve the Italian policy allowing the innovative ecosystem to be competitive and disclose its positive contribution to "restart, the country".

To conclude, Table 22 summarizes the issues and the related policy recommendations drafted in the chapter in order to facilitate the reading.

Table 22: Policy recommendations of the Italian Startup Act

Ineffective political strategies	Issues unmasked	Policy Recommendations
1. Current tax incentives for corporate and private investments in startups	**Feeble Italian Venture Capital Investment Market**	**Strengthening Italian Venture Capital Investment Market:**

		- **Encourage Institutional Investors to make public equity investments.** - **Increase tax incentives for corporate and private investments in startups** - **Decrease high capital gains tax rates which can deter venture capital investments.** - **Government-sponsored investors network to disseminate Venture Capital Culture in Italy.** - **Government-sponsored training for managers of successful Italian industries to launch their own funds.**
2. Smart & Start Italia is unsuitable to stimulate the development of innovative startups in the South	**Regional disparities over the Italian territory with regard to the establishment, development, job creation rate and financial opportunities of Italian innovative startups**	**Public Development Agency in support of the establishment and development of innovative startups in the South of Italy meeting the following criteria:** - **Broad authority and discretional power to invest in believed strategic sectors of the south encouraging the establishment of innovative startups in those fields.** - **Tailored incentives and fiscal aids according to the needs of the single startups.** - **Supra-regional structure in order to avoid complex coordination among several entities.** - **Independent from the political and electoral cycle.**
3. The ineffectiveness of the Italian Startup Hub Program	**Long waiting times, lack of coordination among the competent authorities and bureaucratic burdens**	**Improve the procedures and foster the internationalization of Italy through reducing the number of competent authorities by centralizing**

		the responsibility in the hand of the Ministry of Economic Development and allowing the digitalization of each step.

CONCLUSIONS

The analysis developed seems to point out promising answers to the research questions brought on the table. Although it could be plausible that the number of Italian innovative startups would have increased also without the set of specific regulations, the trends clearly showed the catalyst effect of the Law 221/2012 on their creation. Hence, it is reasonable to conclude that the Italian Startup Act is being effective, enabling the establishment and development of innovative startups and, thereby, creating new jobs and greater prosperity in the long-term. It worthwhile investing in this policy. The feeble structures of the Italian productive system can be strengthened through the presence of innovative enterprises. If the weakest aspects are improved, the legislation will help the whole country to deal with outdated models and spur innovation also in the other sectors. Such conclusions have been reached through five stages thanks to the employment of a theoretical, comparative and diachronic analysis as a tool for evaluating the implementation of the policy.

The *first chapter* introduced the Economics of Innovation as the theoretical framework to rethink the outdated industrial models that hardly adapt to the current digital era. The approach sustains that innovation is the major force in the economic growth and young firms are the primary entities that better adapt to the new paradigm of prosperity. To strengthen the theory, the chapter has spotlighted empirical researches. According to the evidence-based studies, it has been demonstrated that a robust and innovative startup sector is the key to sustainable economic growth and job creation. For instance, the OECD has estimated that young firms generated almost half of the new jobs even if employed only 20% of the overall workforce. Moreover, the persuasive work of the Italian economist Enrico Moretti highlighted that the high-tech industries have the largest multiplier effect. For each new high-tech job in one American city, five additional jobs are created in that city over the next 10 years. If only a small number of startups is able

to be tremendously beneficial, it is simple to imagine how a larger amount of them (if well nurtured) can influence the whole economy of a country.

The studies unearthed another interesting observation: the cross-countries differences in the startups' dynamics. This was a clue to prove that the phenomenon is not spontaneous. It is influenced by several factors among which the ability of public policies to stimulate an efficient startup ecosystem stands out. The way they are formulated and implemented matters. If a country is not friendly enough to these actors, innovation will develop elsewhere and the hostile country will miss the successful strategy to solve the problems occurred during the crisis: lack of economic growth and unemployment.

The rationale of the first chapter was to stress the issue at stake. The huge "disruptive" power of startups to restart a country's economy can not be undermined as well as the formulation of proper public policies in their support. This implicitly explained why we chose to study the Italian policy comprehending whether or not our country is properly using this promising option to restart its damaged ecosystem.

Having clear the challenge, the purpose of the *second chapter* has been to evaluate the policies in support of potential high-growth, young companies with regard to the most successful startup ecosystems (according to the latest Global Startup Ecosystem Ranking). The comparative overview has been used as a tool to highlight the most-friendly public measures to set innovation in motion. Also, it has been introduced as a reference to comprehend the Italian specific policy.

Firstly, the "America Startup" Initiative has been analyzed. The evaluation highlighted the effectiveness of a measure that facilitates the access to capital to innovative companies and extends the pool of investment opportunities: The American Jobs Act. Since its launch, the United States registered an increase in the amount of venture capital flowing to startups and various regions saw an unprecedented explosion of growth.

Secondly, it has been noticed that three European countries were positioned in the top 20 of the global ranking. This has encouraged deeper attention for European policies wondering if the integrated regulation framework had a role in the outstanding outcome. It has been shown a great progress in terms of measures in support of startups and a process of convergence towards the United States. However, the path of Europe is still long and a more unified political regulation framework for startups is needed. This has led us to conclude that the success of the three European ecosystems, namely the United Kingdom, Germany and France is influenced by their specific regulatory initiatives.

The United Kingdom has been found to have similar traits to the American environment, especially in its attention to making risk capital available to high potential young companies in order to promote their development. The Enterprise Investment Scheme and Venture Capital Trusts have been demonstrated to have a positive effect on the capacity building of startups. Whilst the German High-Tech strategy has been recognized successful especially in the funding program EXIST that encourages university students to start their business before they graduate and guides them after their degree. Also, the fact that many startup entrepreneurs do not consider to be an employee in a traditional company as a viable alternative is the symptom of a strong innovative entrepreneurship culture in Germany. Finally, France's tax incentives policies for innovative companies has been shown as the more efficient to stimulate the growth and success of startups in France. In particular, the *Jeunes Entreprises Innovantes* (JEI) and the R&D tax credit.

Rough conclusions have been inferred from this international overview. Investing in facilitating the access to capital through venture and corporate financing has been demonstrated the key factor for the growth and survival rate of innovative startups. Companies need funds to commercialize R&D, test their innovative products and scale-up. This assumption is proved by the supremacy of the countries that adopt these successful strategies: USA and UK. While entrepreneurial promotion programs and solid tax incentives for startups are less but still effective strategies

as demonstrated by the German and French models.

The two chapters prepared the ground to introduce the crucial interest of the research: The Italian Startup Act's performances. Starting from the third section, the thesis has been focused on presenting the commitment of the Italian Government in support of innovative startups highlighting the results achieved so far.

The regulatory strategies of the Italian Startup Act have been extensively reported in *chapter three*. They generally follow the rationale of the innovative policy framework such as facilitating the access to capital, fiscal exemptions, incentives to the R&D activities, public funds, mentoring programs for startups etc. In theory, the Italian Startup Act is as good as the international best practices. The initiatives are built on the pursuit of sustainable development, on strengthening the competitiveness of the economy and the creation of new jobs based on the centrality of innovation. In practice, such theorization is not enough to demonstrate the real effectiveness of the Italian law.

Hence, *the fourth chapter* has attempted an analysis of the policy impact aiming at understanding and assessing the effectiveness of the Italian regulatory framework. The first section of the chapter has concentrated on evaluating the broad effect of the Italian Startup Act on the establishment and development of the innovative startups and thus, consequently, on the economic growth and job creation of the country. To this aim, three variables have been considered: the startup rate; the startup economic performances and their job creation rate. The evolution of these three factors over the time has been examined comparing the information available from September 2014 to June 2016. Also, with regard to the startup rate, the key indicator to observe the direct effect of the policy, a counterfactual analysis before and after the coming into force of the regulation has been carried out in order to strengthen the reliability of the results.

The outcomes of the analysis have been clear. Firstly, the Italian Startup Act is revealing to support the establishment and development of innovative startups through the increase of *the startup rate* between September 2014 and June 2016. The total amount of innovative firms has considerably grown (+125.97%). Also, their average joint stock increased (+37.5%) meaning the development of these companies beside their numerical growth.

It is plausible to imagine a sort of increase in the number of innovative startups also without the set of specific regulations. In fact, a strong and sudden growth in the startups rate was registered before and after the policy. The discontinuous trends did not enable to evaluate the hypothetical growth of the startups without the law and this prevented us to precisely estimate the net effect of the policy. Although the absence of a computable number, the trends post-2012 clearly shown the catalyst effect of the Law 221/2012 on the establishment of Italian innovative startups. Only 8.6% of the innovative startups were established before the regulation while the 91.4% of them has been created after its coming into force.

Secondly, the Italian startup policy is contributing to increase the economic performances of these companies. Between 2013 and 2014, innovative startups with net profits increased (+2.11%) together with their total production value (+76.5%). Hence, these high-tech, young firms are proving their potential contribution to the long-term economic growth of the country.

Lastly, the Italian Startup Act is having a noteworthy effect in terms of employment. Indeed, the job creation rate of innovative startups considerably grown between September 2014 and June 2016. The overall amount of workers in the startup sectors substantially boosted (+324.09%). Also, the average number of employees for one startup increased (+28.89%) indicating a dimensional growth of the already established innovative startups that need more workforce. This implies their tendency to survive and develop. To better understand the relevance of the outcomes observed, each indicator has also been compared to the performances of the ordinary companies with shared capital that do not benefit from the facilitations

of the Law. The trends always highlight more promising performances for innovative startups.

After having reported the general impact of the policy, the second section of the chapter has focused on the implementation of the single measures to deeply identify the practices that are currently contributing to the effectiveness of the policy and the strategies that require improvements or changes. Beyond the successful instruments responsible for the positive impact of the Act (Cuts to red tape and fees; tax credit for employing qualified workforce; simplified and free access to the public Guarantee Fund for SMEs; and, the Italia Startup Visa) three issues have been unmasked by the analysis. Primarily, the Italian VCs do not have a natural inclination to invest in risky companies at the beginning of their activity. Thus, mere tax incentives for corporate and private investments in startups are not enough to spur a required change of attitude. Secondly, regional disparities over the Italian territory regarding the establishment of these high-tech companies, their growth rate and their financial access capabilities are evident. Hence, tailored political initiatives for the Southern regions are required and the problem cannot be solved with national subsidies programs such as Smart & Start Italia. Finally, the lack of coordination among the Italian competent authorities is attempting the effectiveness of the Italian Startup Hub, thus reducing the attraction of foreign investments.

These non-functional political measures should be modified in order to foster the proved successful impact of the Act on the Italian economic growth and job creation. The *last chapter* has concentrated on drafting reasoned recommendations. Three potential solutions to the unearthed problems have been found:

- **Strengthening the Venture Capital Investment Market** through encouraging Institutional Investors to make public equity investments; increasing tax incentives for corporate and private investments in startups; decreasing high capital gains tax rates which can deter venture capital investments; establishing Government-sponsored networks of investors to disseminate Venture Capital Culture in Italy and Government-sponsored

trainings for managers of successful Italian industries to launch their own venture funds.

- **Creating a Public Development Agency in support of innovative startups in the South of Italy** to reduce startups regional disparities over the territory.

- **Enabling the bureaucratic simplification for the Italian Startup Hub Program** to improve the Internationalization of Italy through centralizing the procedures in the hands of the Ministry of the Economic Development and the digitalization of every step.

In closing, the Italian Startup Act is the anatomy of a successful implementation and the key to a potential prosperity. It is more than a set of regulations in support of high-tech companies. It embodies a challenge to rethink the outdated industrial models. It is a hope to spur innovation in the whole sectors starting from a more digital, transparent and righteous public administration. It is an attempt to open the mind of our country that is still bounded in its traditional and anachronistic reality.

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THE CONTRIBUTION OF THE ITALIAN STARTUP ACT TO THE COUNTRY'S ECONOMIC GROWTH AND JOB CREATION: THE ANATOMY OF A SUCCESSFUL IMPLEMENTATION

Summary

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ACADEMIC YEAR 2015/2016

TABLE OF CONTENTS

The objective of the present research is to evaluate the contribution of the Italian Startup Act to the country's economic growth and employment through the establishment and development of innovative startups.

The work is an analytical and conceptual attempt to answer very straightforward, yet challenging questions: Is the Italian startup policy effective, or is it a rhetoric corpus of recommendations? Does it enable innovative startups to spur innovation? Is it capable of creating new jobs and stimulate greater prosperity in the Italian economy? Finally, is it worthwhile to invest in this policy or the feeble aspect of the Italian productive system could not be improved through the presence of innovative enterprises?

The anatomy of a successful implementation is sketched through a detailed examination of the case study. Reasoned recommendations to improve the policy are drafted as well.

Introduction: The issue at stake

The economic environment is facing a transition phase from the industrial to the digital era. The unsuitableness of the traditional enterprises to the changing dynamics is demonstrated by their current inability to lift up productivity, growth and employment. The habitual organizational model has reached a point of diminishing returns. A solution to the issue is the disruptive innovation through the creation of new products and services. Indeed, some entities are proving to adapt and succeed in the new economy better than anyone else. They are the innovative startups - newly established companies that present a clear connection to the technological innovation.

A solid startup sector has been shown to be the key to a sustainable economic growth and job creation in current ages. Nonetheless, the development of these actors is not spontaneous. It is a consequence of good fertilizers. Undoubtedly, public policies in support of startups are one of them.

The issue at stake surrounding innovative enterprises is relevant and it can not be undermined by the governments that desire to revitalize their economic and employment conditions. The rationale of our thesis is, then, unveiled: understanding whether the Italian Startup Act - the national public policy in support of these companies - is appropriate enough to contribute to the economic growth and employment of the country through the creation of a solid startup structure. The analysis takes shape along five sections.

1. Economics of Innovation: New Paradigm of Growth

The *raison d'être* of the first chapter is to reveal the huge "disruptive" power of innovation and innovative startups to restarting a country's economy as well as the importance of formulating proper public policies in their support.

The Economics of Innovation is introduced as the founding theoretical assumption to justify the need to rethink the outdated industrial models. The approach sustains that innovation is the major force in the economic growth and young firms are the primary entities that better adapt to the new paradigm of prosperity. To strengthen the theory, the chapter presents empirical researches. A robust and innovative startup sector is confirmed as being the key to economic growth and job creation. For instance, the OECD has estimated that young firms generated almost half of the new jobs even if employed only 20% of the overall workforce.

Also, the persuasive work of the Italian economist Enrico Moretti highlighted that the high-tech industries have the largest multiplier effect. For each new high-tech job in one American city, five additional jobs are created in that city over the next 10 years. These reports lead reasonably to gather why innovation and startups deserve to be promoted. If only a small number of them is able to be tremendously beneficial, it is more than just the jobs in innovation that are at stake, it is the entire nation's economy.

The studies point out another interesting observation: the cross-countries differences in the startups' dynamics. Thus, their growth is not spontaneous. It is influenced by several factors among which the ability of public policies to stimulate an efficient startup ecosystem stands out.

These assumptions are supported quoting Mariana Mazzucato and her theories about an "Entrepreneurial State". "How many people know that the algorithm that led to Google's success was funded by a public National Science Foundation grant?" (Mazzucato, 2013, p. 19). It becomes clear the need to examine our policy in order to comprehend if Italy is properly using this promising option to restart its outmoded ecosystem.

2. Public Policies for Innovation: a comparative evaluation of the best international strategies in support of innovative startups

After having disclosed the crucial role of public intervention, the purpose of the second chapter is to evaluate the international policies in support of startups that are responsible for creating successful ecosystems and fostering economic growth and employment.

According to the 2015 Global Startup Ecosystem Ranking, the political strategies of USA, UK, Germany and France are analyzed. The comparative overview is used as a tool to emphasize the friendliest public measures to set innovation in motion. Also, it is introduced as a reference to comprehend the Italian specific policy.

Firstly, the *"America Startup"* initiative - the policy of the leading country- is examined. The effectiveness of *the Jobs Act* is proved. It is a measure that facilitates the access to capital to innovative companies and extends the pool of investment opportunities. Since its launch, the United States registered an increase in the amount of venture capital flowing to startups and various regions saw an unprecedented explosion of growth.

Secondly, it is noticed that three European countries are positioned in the top 20 of the global ranking. This has encouraged deeper attention for European policies wondering if the integrated regulation framework had a role in the outstanding outcome. It is shown a great progress in terms of measures in support of startups and a process of convergence towards the United States. However, the path of Europe is still long and a more unified political regulation framework for startups is needed. Thus, the success of the three European ecosystems, namely the United Kingdom, Germany and France, is influenced by their specific regulatory initiatives.

The United Kingdom has similar features to the American environment, especially in its attention to making risk capital available to young companies in order to promote their development. *The Enterprise Investment Scheme* and *Venture Capital Trusts* are the main supportive initiatives for venture capital investments. The evaluation demonstrates their positive effect on the capacity building of startups.

Whilst the German *High-Tech strategy* has been recognized successful especially in the funding program *EXIST* that encourages university students to start their business before they graduate and guides them after their degree. Also, the fact that many startup entrepreneurs do not consider to be an employee in a traditional company as a viable alternative is the symptom of a strong innovative entrepreneurship culture in Germany.

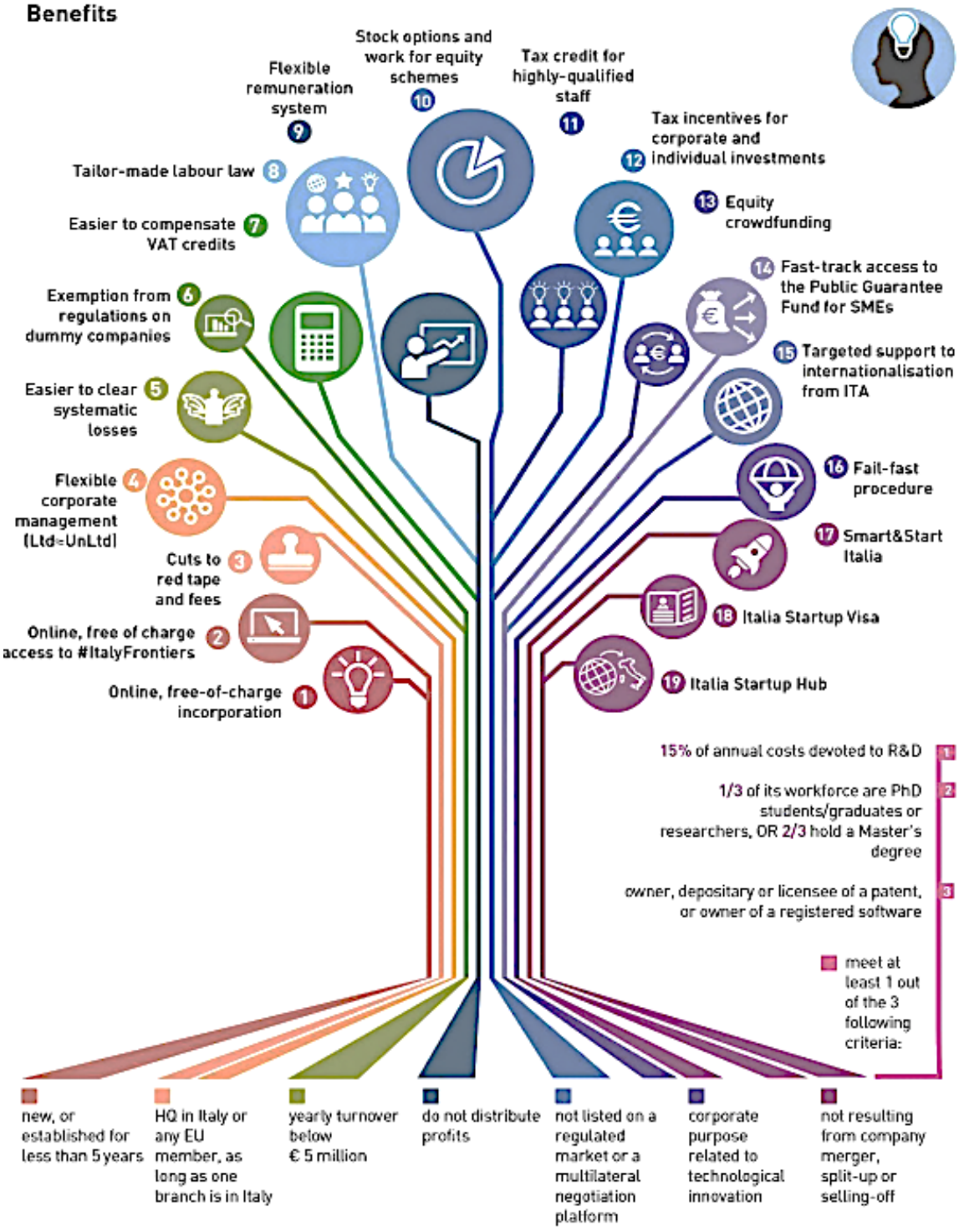
Finally, France's tax incentives policies for innovative companies has been shown as the more efficient to stimulate the growth and success of startups in France. In particular, the *Jeunes Entreprises Innovantes* (JEI) and the *R&D tax credit*.

To conclude, investing in facilitating the access to capital through venture and corporate financing is the key factor for the growth and survival of startups. Companies need funds to invest in R&D, test their products and scale-up. This assumption is proved by the supremacy of the countries that nurture these successful strategies: the USA and the UK. While the entrepreneurial promotion programs and solid tax incentives for startups are less effective, however still positive strategies as demonstrated by the German and French models.

3. Italian Startup Act: an innovative industrial policy for economic growth and job creation

The absence of our country from the top 20 global startup ecosystems is an evidence that Italy lags behind these fertile places. Nevertheless, it is making efforts to be competitive through the establishment of tailored policies. The third chapter is dedicated to the Italian regulatory framework in support of innovative startups – Law 221/2012 (The Italian Startup Act) - and other additional strategies.

The following figure thoroughly summarizes the criteria of eligibility (at the bottom of the image) to gain the status of an innovative startup. It, also, illustrates the overall legislative measures established by the Italian Government in their support (From number 1 to 19).


Benefits
Online, free-of-charge incorporation 1
Online, free of charge access to #ItalyFrontiers 2
Cuts to red tape and fees 3
Flexible corporate management (Ltd=UnLtd) 4
Easier to clear systematic losses 5
Exemption from regulations on dummy companies 6
Easier to compensate VAT credits 7
Tailor-made labour law 8
Flexible remuneration system 9
Stock options and work for equity schemes 10
Tax credit for highly-qualified staff 11
Tax incentives for corporate and individual investments 12
Equity crowdfunding 13
Fast-track access to the Public Guarantee Fund for SMEs 14
Targeted support to internationalisation from ITA 15
Fail-fast procedure 16
Smart&Start Italia 17
Italia Startup Visa 18
Italia Startup Hub 19
15% of annual costs devoted to R&D 1
1/3 of its workforce are PhD students/graduates or researchers, OR 2/3 hold a Master's degree 2
owner, depositary or licensee of a patent, or owner of a registered software 3
meet at least 1 out of the 3 following criteria:
new, or established for less than 5 years
HQ in Italy or any EU member, as long as one branch is in Italy
yearly turnover below € 5 million
do not distribute profits
not listed on a regulated market or a multilateral negotiation platform
corporate purpose related to technological innovation
not resulting from company merger, split-up or selling-off

4. Evaluating the effectiveness of the Italian Startup Act

In theory, the Italian Startup Act is as good as the international best practices. The initiatives are built on the pursuit of economic development, on strengthening the competitiveness of the country and the creation of new jobs based on the centrality of innovation. In practice, such theorization is not enough to demonstrate the real contribution of the Italian law. Hence, chapter four attempts an analysis of the policy impact aiming at assessing the effectiveness of the Italian regulatory framework.

Missing a reasonable time span to investigate the data, the *ex-post evaluation* is not feasible yet. Also, the economic growth and job creation are long-term objectives that require a fair temporal extension to realize. Thus, an *in itinere evaluation* is carried out examining the performance of the policy during its implementation process. The investigation's methodology is the temporal comparison of the empirical evidence from moment T1, when the first generation of data was registered, to moment T2, the last empirical sources.

The impact of the Italian Startup Act on the economic growth and job creation

The first section of the chapter evaluates the broad effect of the Italian Startup Act on the establishment and development of innovative startups and, consequently, on the economic growth and job creation of the country. To this aim, three variables are considered: the startup rate; the startup economic performances and their job creation rate.

The evolution of these three factors is examined comparing the information available from September 2014 to June 2016. With regard to the startup rate, the key indicator to observe the direct effect of the policy, a counterfactual analysis before and after the coming into force of the regulation is carried out in order to strengthen the reliability of the results. To better understand the relevance of the outcomes observed, each indicator is also compared to the performances of the

ordinary companies with shared capital that do not benefit from the facilitations of the Law. The trends always highlight more promising results for innovative startups. The outcomes of the analysis are clear.

Firstly, the Italian Startup Act is revealing to support the establishment and development of innovative startups through the increase of *the startup rate* between September 2014 and June 2016. The total amount of innovative firms has considerably grown (+125.97%). Also, their average joint stock increased (+37.5%) meaning the development of these companies beside their numerical growth. Instead, the rate of ordinary companies slightly increased (+6.26%) and their total joint stock even decreased (-3.60%).

Variation of the startup rate between September 2014 and June 2016

	September 2014	**June 2016**	**% variation (2014/2016)**
N° innovative startups	2.630	5.943	+125.97 %
N° companies with shared capital	1.478.286	1.570.861	+6.26 %
Total joint stock declared by startups	€106.242.437	€ 328.442.969	+209.14 %
Average joint stock per startup	€40.000	€55.000	+ 37.50 %
Total joint stock declared by the overall Italian companies with shared capital	€ 3.424.551.172.144	€ 3.301.102.399.822	-3.60 %
% of Italian startups on the total companies with shared capital	0.18	0.38	+111.11 %

It is plausible to imagine a sort of increase in the number of innovative startups also without the set of specific regulations. In fact, a strong and sudden growth in the startup rate was registered before and after the policy. The discontinuous trends did not enable to evaluate the hypothetical increase of the startups without the law and this prevented us to precisely estimate the net effect of the policy. Although the absence of a computable number, the trends post-2012 clearly shown the catalyst effect of the Law 221/2012. Only 8.6% of the innovative startups were established before the regulation while the 91.4% of them has been created after its coming into force.

Secondly, the Italian startup policy is contributing to increasing the *economic performances* of these companies. Between 2013 and 2014, innovative startups with net profits grew (+2.11%) together with their total production value (+76.5%). The R.O.I (Return on Investments) registered decreasing outcomes (-16.67%). This could lay a veil of suspicion on the innovative startups' output. Nonetheless, investments hardly generate revenues in such reduced time span. Also, observing the trends of the same variable on the ordinary companies with net profits, the results are even worst (-60%), burying the skepticism. Hence, these high-tech, young firms are proving their potential contribution to the long-term economic growth of the country.

Comparison of Startups Economic Performance between 2013 and 2014

	Italian Startups with net profits (2013)	**Italian Startups with net profits (2014)**	**% variation (2013-2014)**
Total Production Value	€110.064.038	€194.264.373	+76.5%
R.O.I	0.12	0.10	-16.67%
R.O.E	0.21	0.21	No variation
Added Value	0.33	0.33	No variation

Lastly, the Italian Startup Act is having a noteworthy effect in terms of employment. Indeed, the job creation rate of startups considerably grown between September 2014 and June 2016. The overall amount of workers in the startup sectors substantially boosted (+324.09%). Also, the average number of employees for one startup increased (+28.89%). This indicates a dimensional growth of the already established innovative startups that need more workforce, implying their tendency to survive and develop.

While observing the ordinary companies with shared capital, the overall number of workers lightly grew (+1.07%) together with the average number of the employees (+2.31%).

Comparative employment rate of innovative startups (September 2014- June 2016)

	Innovative Startups (2014)	**Innovative Startups (2016)**	**% variation (2014-2016)**
Total n° workers	12.800	54.283	+324.09%
N° employees	2.200	8.193	+272.41%
N° shareholders	10.600	23.045	+117.41%
Average N° employees	2.7	3.48	+28.89%
Average N° shareholders	4	4	No variation

The measurable outcomes of the Italian Startup Act's single strategies

After having reported the positive outcome of the overall regulations included in the Italian Startup Act, the second section of the chapter focuses on the implementation of the single measures to identify the practices that are currently effective and the ones that require changes. Beyond the successful instruments (*Cuts to red tape and fees; tax credit for employing qualified workforce; simplified and free access to the public Guarantee Fund for SMEs;* finally, *the Italia Startup Visa*) three issues have been unmasked by the analysis.

Firstly, the Italian Venture Capitalists do not have a natural inclination to invest in risky companies at the beginning of their activity. Thus, mere tax incentives for corporate and private investments in startups are not enough to spur a required change of attitude.

Secondly, regional disparities over the Italian territory regarding the establishment of these high-tech companies, their growth rate and their financial access capabilities are evident. Hence, tailored political initiatives for the Southern regions are required and the problem cannot be solved with national subsidies programs such as Smart & Start Italia.

Finally, the lack of coordination among the Italian competent authorities is attempting the effectiveness of the Italian Startup Hub, thus reducing the attraction of foreign investments.

These issues require to be addressed in order to catalyze the proved successful impact of the Act on the Italian economic growth and job creation.

5. Policy Recommendations: perspectives for the future

The last chapter strives for drafting some feasible advises to enhance the Italian Startup Act. How can policy makers deal with the ineffective measures?

I. Strengthening the venture capital investment market: The Italian venture capital market should be enhanced starting from three sectors: the investment regulations; the taxation provisions and the dissemination of venture culture.

- Firstly, institutional investors such as pension funds and insurance companies should be strongly encouraged by the law to make public equity investments.

- Secondly, tax incentives for corporate and private investments need to be increased as well as the reduction of high capital gains tax rates which can deter venture capital reinvestments.

- Also, Government-sponsored networks to connect Italian and foreigner investors should be created in order to educate our venture capitalists.

- Lastly, Government sponsored training for managers of successful Italian industries would be required to stimulate them to launch their own venture funds.

II. Establishing a Public Development Agency in support of the startups in the South of Italy: Since the observed regional disparities, a Public Development Agency focused on supporting the establishment and growth of startups in the South should be established. Taking the cue from the successful Irish model (IDA), the agency should meet the ensuing criteria:

- Broad authority and discretional power to invest in believed strategic sectors of the South encouraging the establishment of startups in those fields.

- Tailored incentives and fiscal aids according to the needs of the single startups

- Supra-regional structure allowing the Agency to have a strategic overview of the whole activities to avoid long waiting times, the inefficient use of the funds, and enabling to allocate resources for the most profitable sectors

- Finally, independence from the political and electoral cycle

III. Enabling the bureaucratic simplification of the Italian Startup Hub program:

- The number of competent authorities with regard to the Hub program should be reduced by centralizing the responsibility in the hand of the Ministry of Economic Development.

- Also, the overall procedures should be further digitalized in each step.

Conclusions: The anatomy of a successful implementation

The analysis developed discloses promising answers to the research questions brought on the table. Although it could be plausible that the number of Italian innovative startups would have increased also without the set of specific regulations, the trends clearly illustrate the catalyst effect of the Law 221/2012 on their creation. Hence, it is reasonable to conclude that the Italian Startup Act is

being effective, enabling the establishment and development of innovative startups and, thereby, creating new jobs and greater prosperity in the long-term. It is worthwhile investing in this policy. The feeble structures of the Italian productive system can be strengthened through the presence of innovative enterprises.

The Italian Startup Act is the anatomy of a successful implementation and the key to a potential prosperity. If the weakest aspects are improved, the legislation will help the whole country to deal with outdated models and spur innovation also in the other sectors. It is more than a set of regulations in support of high-tech companies. It embodies a challenge for a more digital, transparent and righteous public administration. It is an attempt to open the mind of our country that is still bounded in its traditional and anachronistic reality.

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