

POLITECNICO DI MILANO

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Master of Science in Management Engineering



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**WALL STREET AND MAIN STREET:
ANALYSIS OF THE CONTRIBUTION OF ITALIAN
HOUSEHOLDS TO THE REAL ECONOMY**

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Abstract (English version)

In an economic system, the real economy represented by enterprises producing non-financial goods and services is opposed to the financial economy, the set of players operating on financial markets. Now more than ever, their interdependence is called into question fostering the debate of whether the prosperity of the financial markets reflects the well-being of real economy firms. Indeed, a financial system has the primary role of allowing the meeting between capital demand and supply. On the one hand, companies producing non-financial goods and services seek resources for their investments in tangible and intangible assets, financial assets, working capital, human and technological resources; while on the other hand, small savers and institutional investors are looking for opportunities. The financial market should ideally support both actors, by allowing the former to offer products and services that create innovation and value, and the latter to find opportunities for return on capital. In this context, the key role is played by households, retail investors with a financial wealth capable of providing a concrete contribution to sectors in search of resources. This dissertation aims to deepen the contribution of households toward Italian non-financial enterprises by quantifying for the first time the stock of direct (through the subscription of securities, debt or equity) and indirect investments (through the collection of banks, intermediaries, mutual funds and insurance companies). The study developed a model based on the Leontief's input / output theory and applied to the Italian financial account system in order to have a comprehensive outcome that includes every institutional sector operating in the country. The analysis revealed a marked reduction in the stock of resources invested directly and indirectly by households in the real economy due to the increase of Italian public debt which led both families and financial intermediaries to move capital towards government debt securities. Moreover, has emerged that the segment of private families has increased its exposure to the real economy through direct investments but has decreased it in indirect terms following the same path of retail households.

Abstract (Italian version)

In un sistema economico l'economia reale rappresentata dalle imprese che producono di beni e servizi non finanziari si contrappone alla economia finanziaria, l'insieme degli attori che operano sui mercati finanziari. Tutt'ora più che mai la loro interdipendenza è messa in discussione a tal punto da far sorgere la domanda se la prosperità dei mercati finanziari rifletta un effettivo benessere delle imprese di economia reale. Un sistema finanziario ha infatti come ruolo primario quello di consentire l'incontro fra domanda e offerta di capitale. Da una parte le imprese produttive di beni e servizi non finanziari cercano risorse per i propri investimenti in immobilizzazioni tangibili, intangibili, finanziarie, capitale circolante, in risorse umane e tecnologiche; mentre dall'altra i piccoli risparmiatori e gli investitori istituzionali sono alla ricerca di opportunità di rendimenti. Il mercato finanziario, idealmente, dovrebbe supportare entrambi gli attori, con l'effetto di consentire ai primi di offrire prodotti e servizi che creano innovazione e valore, e ai secondi di trovare opportunità di rendimento del capitale. In questo contesto il ruolo chiave è svolto dalle famiglie, investitori retail dotati di un patrimonio finanziario in grado di portare un contributo concreto ai settori in cerca di risorse. La ricerca ha voluto approfondire il contributo delle famiglie nei confronti delle imprese non finanziarie italiane quantificando per la prima volta lo stock di investimenti diretti (attraverso la sottoscrizione di titoli mobiliari, debito o equity) e indiretti (attraverso la raccolta di banche, intermediari, fondi comuni e assicurazioni). È stato sviluppato un modello basato sulla teoria input / output di Leontief e applicato al sistema dei conti finanziari italiano al fine di avere un risultato comprensivo di ogni settore istituzionale operante nel Paese. Dall'analisi è emerso un evidente riduzione dello stock di risorse investite direttamente e indirettamente dalle famiglie in economia reale dovuta all'aumento del debito pubblico italiano che ha portato sia le famiglie che gli intermediari a spostare i capitali verso i titoli di stato. Inoltre, è emerso che il segmento delle famiglie private ha incrementato la propria esposizione nell'economia reale attraverso investimenti diretti ma la ha diminuita in termini indiretti seguendo un percorso simile alle famiglie retail.

Executive summary

This study aims to explore the topic of real economy in Italy, a theme that has gained growing interest in recent years. In the Italian context characterized by a growing country risk and by a recovery process that is still underway, a model based on Leontief's input / output matrix was developed to quantify for the first time the stock of resources invested in the Italian real economy by Italian households.

The research begins with **Chapter 1** which describes the Main street-Wall street dichotomy, the two sides of the same society that respectively represent the economy linked to production and the sphere of financial markets. Then is provided a precise definition of real economy based on the sector of activity according to the ATECO classification, in particular all productive sectors are included in the perimeter with the exception of the insurance, banking and public administration sectors. To identify the context in which real economy enterprises operate, an overview of the Italian and European situation is proposed by analyzing the national accounting indicators. Finally, is underlined the importance of SMEs that represent the backbone of the Italian economy; they constitute more than 99% of active businesses, employ two thirds of workers and are responsible for more than 50% of the national value added. Moreover, they play a key part to ensure innovation, economic growth, job creation and social integration.

Chapter 2 offers a detailed overview of the financing options of SMEs in relation to the nature of the financing itself. The Italian scenario is notoriously a bank-centric system and small and medium-sized enterprises encountered considerable difficulties in accessing bank credit since the financial crisis which led to a contraction in the offer, much stricter financial requirements and a strong increase of bank loan rejection rates. The credit crunch has led SMEs to adopt alternative financing methods, including asset-based financing, alternative forms of debt, the adoption of equity instruments and hybrid solutions between debt and risk capital. Among most popular alternative financing options, there is equity and lending crowdfunding, whose volumes double from year to year, offering as a concrete alternative to bank credit for innovative startups and SMEs. Venture capital investments in Europe have recorded encouraging figures since 2015, growing at a rapid pace after a period of stagnation that lasted for six years. In the Italian panorama, SMEs have found in the AIM Italia segment the opportunity to raise capital on financial markets despite not having all the necessary requirements for the regulated segment.

Chapter 3 provides a comprehensive review of the main policies supporting the real economy, promoted both at European and Italian level. At national level, the dissertation investigates PIRs with

their potential and problems that have led to negative investment flows since the beginning of 2019, minibonds allowing SMEs to appear on the bond market but it also stresses the role of regional financial institutions that represent the meeting point between the State and the needs of local businesses. Moreover, are explored forms of tax incentives for public listing and the benefits reserved for new businesses and innovative startups that allow to streamline bureaucratic processes and exploit state guarantees backing loans. The commitment to promote the flow of funds toward real economy enterprises is realized at European level with the Juncker plan, the seven-year financing program that, through the European Fund for Strategic Investments, is planning to mobilize € 500 billions of resources at the end of 2021. Another European option are ELTIF, closed-end alternative investment funds introduced in 2015 which can be a valid solution to PIRs for retail investors who want to support the country's economy and, at the same time, receiving an adequate return in the medium to long term. However, persisting structural and behavioral problems prevent the adequate flow of investments. Several institutional investors are still subject to the home bias phenomenon in both equity and debt instruments which prevents foreign investors from diversifying their portfolio investing in Italian products. In addition, the problems of information asymmetry severely affect the SME sector which do not have required collaterals and consequently they are denied the possibility of applying for bank loans despite having good projects. Furthermore, the Italian capital market is not sufficiently developed to provide long-term resources to non-financial firms as at the end of 2019 the ratio between stock market capitalization and GDP stood just at 36.4%, far lower than the figures of France and Germany. Finally, the theme of infrastructures is addressed, the enabling factor of each economy that promotes the well-being of citizens and support the development of local businesses. The studies available highlighted a decrease in Italian public expenditure on infrastructure both in absolute terms and in relation to the GDP; this infrastructural gap must be bridged in order to keep up with expectations on economic growth.

Chapter 4 is entirely dedicated to the topic of Italian households' saving. The chapter is articulated in two sections.

The *first part* presents Italian financial accounts describing the institutional players who carry out operations in Italy with their main investment activities; the household sector is analyzed highlighting all the financial instruments they have in their portfolio, stressing how deposits are the preferred form of savings. Of great relevance are even equity investments, which are mostly made up of participations in unlisted enterprises, a typical feature of economic systems with a large number of family-run businesses. Finally, insurance instruments and pension funds received particular attention from households in recent decades, making up 25% of the assets.

The *second part* of the chapter represents the innovative component of the dissertation. This is an unprecedented analysis carried out through the collaboration between Politecnico di Milano the Italian Association of Private Banking (AIPB) aiming at quantifying for the first time the stock of investments of Italian households in the real economy both in direct and indirect terms (through the intermediation of banks, investment funds, insurance companies and the remaining institutional sectors). The objective was achieved by constructing a use-purposes model deriving from the value model employed in Italy by *Brioschi et others (1990)* and applied to financial accounts in the reference period 2017 - Q2 2019. At this point, it was possible to address the following research questions:

1. *What is the amount of direct and integrated investments of Italian households toward Italian real economy represented by resident non-financial companies and how has the situation changed in the last 18 months?*
2. *What was the contribution of Private families and how does it differ from the contribution of the households sector as a whole?*

To be consistent with the definition of real economy proposed in *Chapter 1*, it was necessary to discern the contribution of Poste Italiane SpA from the results obtained as well as formulating assumptions on the allocation of the insurance and equity instruments to properly employ the model.

The research ends with **Chapter 5** in which the outcome obtained are discussed in detail, highlighting the strengths and weaknesses of the model proposed and suggesting recommendations to improve the situation described. In conclusion, are underlined some methodological limitations of the work generated by data availability constraints and are proposed some suggestions for possible future researches.

Chapter 1:

Real economy and the macroeconomic Italian context

1.1 Main street and Wall street

In the modern economy, terms as Wall Street and Main Street have become commonplace to indicate two very different aspects of the same society. The term Wall street derives from the famous avenue of New York known as the beating heart of the most important financial district in the world, consequently it is used to define everything related to the stock exchange and finance in general sense. It defines the set of people and organizations that deal with financial markets, the category includes investment banks, large corporations, brokerages and other financial institutions that move capital among financial instruments such as bonds, shares, insurance policies, mutual funds, derivatives but also mortgages and loans. It is the branch of the economy that does not actually produce anything but is necessary for the contribution of funds to society.

The other side of the economy is represented by Main street, a term used to define the real economy. It points to all sectors that produce non-financial goods and services referring to factories, land, buildings, goods, production, plants and everything related to production in general sense.

These two different realities are necessary to each other, the real economy asks for the essential capital for the proper functioning of the business, these capitals pass from the financial economy which is constantly looking for investments with adequate returns to satisfy its investors. Their relationship appears clearer when referring to the flow of funds introduced by the Central Bank (Rubessi, 2016) in the Quantitative Easing (QE) maneuver as a response to the financial crisis. Liquidity from the European Central Bank (ECB) is fed into the system through banks which transfer money to households and businesses through loans and investments. Companies benefit from funds to finance their operational and strategic activities, while thanks to bank loans, families have the opportunity to purchase goods and services. Money then, after passing through the real economy as an investment in activities and production, returns to the financial sphere through interest, profits on investments and repayment of loans.

In each financial system, these two segments must be correctly balanced for the proper functioning of the economy as well as being mutually supportive, however, they must be analyzed differently as they have different objectives and organizational structures. The literature on the topic has proposed

to understand the nature of correlation of the two sides of the economy, if the continuous growth of the financial markets contributes concretely to the real economy of the country or if the contribution of Wall street remains limited to the set of players operating in the financial sectors. An interpretation comes from John Makin (2013) who highlighted how in the years following the programs of QE by the Federal Reserve (FED), the annualized growth of the American GDP stood at 2.5% while the annualized earnings on equity markets stood at 46%. Therefore, if on one side the equity sector rises thanks to the inflow of money from the Central Bank, on the other side there is not the expected economic growth. This disappointment makes market falling again demanding for another round of QE. Therefore, this vicious circle fueled by QE tends increasingly to move the real economy away from the financial one.

Regarding to the levers of action of the financial sectors, it is essential to consider which policies and legislation are in place to encourage the flow of capital from savers to institutional sectors in search of capital to invest. However, even behavioral economics affect the relationship between Main street and Wall street. Through the wealth effect, agents who hold shares during a favorable period of financial markets will be more likely to spend as they will feel better off given the rise in share prices (and so in net worth). In addition to the wealth effect, wall street would have an impact on the real economy through two other channels (Malkiel, 1998). Large corporations that have benefited from the rise in shares can financing at a lower cost thus favoring their investments; in addition, the booming stock market implies the expectations effect which increases consumer and business confidence.

1.2 Definition of Real Economy

Despite the increasing interest in real economy manifested in last decade, there is still not an univocal definition of the topic that marks a clear boundary of what is considered real economy, as a consequence, the first step of the research is to choose a description of the subject in order to address properly the flows of funds. The obstacle in finding a conventional frame of the theme arises from the variety of financial instruments and the different ways they are employed.

As investments in real economy it's intended all those investments in financial instruments of any type, such as debt securities, shares or hybrids, both private and traded on regulated markets or MTF. Financial instruments can be held directly, through a management mandate or through the holding of parts of UCITS.

Only the financial flows directed towards non-financial companies resident in Italy, of any dimension, are considered, dedicated to manufacturing, agriculture and the provision of services, but excluding the whole financial sector that encompasses banks, insurance companies and financial companies.

The perimeter of real economy can be better empathized with ATECO classification for economic activities exercised by enterprises; relying on the latest version of the code (ATECO 2007) it's possible to define as real economy all the following sections:

- A: agriculture, forestry and fishing;
- B: mining of quarries and mines;
- C: manufacturing activities;
- D: supply of electricity, gas, steam and air conditioning;
- E: water supply; sewerage, waste management and remediation activities;
- F: constructions;
- G: wholesale and retail trade; repair of motor vehicles and motorcycles;
- H: transport and storage;
- I: accommodation and catering services;
- J: information and communication services;
- L: real estate activities;
- M: professional, scientific and technical activities;
- N: rental, travel agencies, business support services;
- P: education;
- Q: health and social assistance;
- R: artistic, sports, entertainment and entertainment activities;
- S: other service activities;

The list includes all sectors except for section K (financial and insurance activities), section O (public administration, defense and mandatory social insurance) and section U (extraterritorial organizations and organizations). Therefore, all funds intended to production in general sense are considered real economy, some examples are agriculture, manufacturing activities as well as energy and raw materials but also public utility services and the healthcare sector.

Investments in infrastructures located on the territory of the Italian State are also considered as flows towards the real economy, this category comprises works other than residential and non-residential

buildings, both new constructions and redevelopment. Examples are highways, streets, roads, railways, aviation field runways, bridges, elevated highways, tunnels and underpasses, waterways, ports, dams and other hydraulic works, carried out over long distances, communication and electric lines, urban ducts and cables and related works, construction for mining and manufacturing, sports and recreational facilities.

Finally, investments in real estate and real estate companies located on the national territory are included in the definition while investments in debt securities issued by the Italian State or by public entities are excluded.

1.3 SMEs in the European context

Analyzing the companies that are included within the definition of real economy implies analyzing the largest population of enterprises in Italy and Europe: small and medium-sized enterprises.

Small and medium-sized enterprises, briefly called SMEs, are companies characterized by the number of employees, the annual turnover and the book value of their assets. Micro-enterprises are characterized by less than 10 employees and a turnover class of less than € 2 million per year or a balance sheet value not exceeding € 2 million. Small businesses have between 10 and 50 employees and present an annual turnover of less than € 10 million or a balance sheet value not exceeding € 10 million. Finally, there are medium size enterprises with a number of employees ranging between 50 and 250 and with an annual turnover of less than € 50 million or with a balance sheet value not exceeding € 43 million. All other companies that present values higher than those indicated do not fall into the category and can be classified as large enterprises.

At the end of 2018, SMEs represented almost all European non-financial companies with a share of 99.8% while large enterprises represented only 0.2% of companies (EC, 2019-a). Micro-enterprises made up the most important portion of SMEs with as many as 23.32 million active companies in the non-financial business sectors (NFBS), followed by small SMEs counting 1.47 million enterprises and medium-sized SMEs with 235 thousand enterprises.

Regarding the geographical distribution among the EU-28 countries (*figure 1*), micro-enterprises constitute on average 93% of active companies, the country with the highest percentage is Greece with 97.4% while the country with the lowest percentage is represented by Germany with 82%. Small SMEs account for less than 10% of all enterprises in NFBS except for Austria (10.9%), Germany (15.1%) and Luxembourg (10.1%). Finally, medium-sized SMEs exceed 1.5% of the total of non-financial firms only in Austria (1.6%), Germany (2.4%) Denmark, Luxembourg (both 1.9%) and Romania (1.8%).

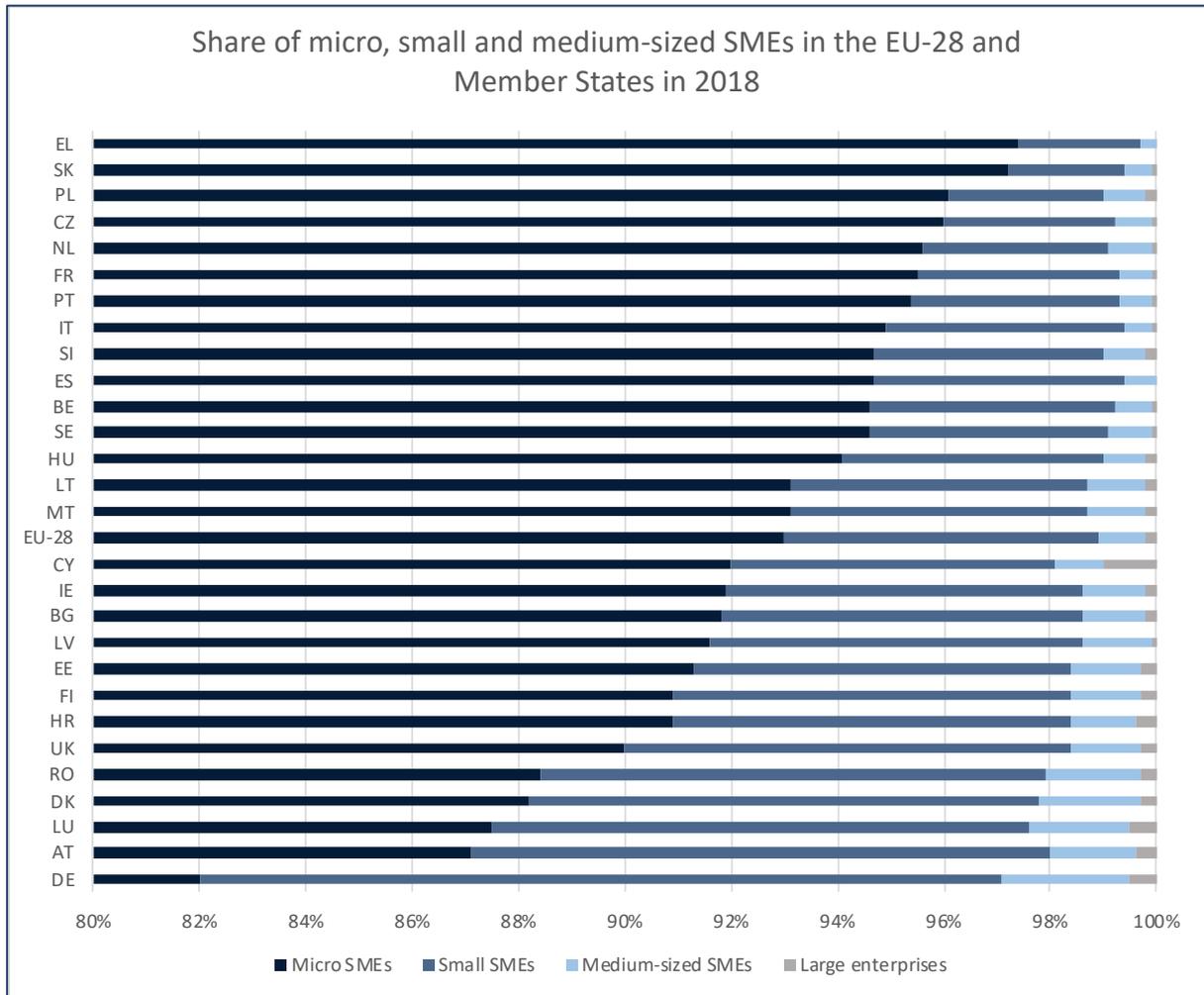


Figure 1: Share of micro, small and medium size SMEs across European States. Source: EC, 2019-a

SMEs employed almost 98 million workers, equal to 66.6% of the European workers, while large enterprises employed 49 million people, covering the remaining 33.4%. However, there are some differences between the 28 member states: Greece continues to be the country where SMEs have the greatest weight on employment (87.9%) followed by Cyprus (83.8%) while UK has the lowest value (53.8%). The remaining economies show homogeneous values that vary from 79.4% recorded in Latvia to 63.7% in Germany.

Considering value added, SMEs are responsible for 56.4% of the total value added of the European economy with heterogeneous situations among Member States. This category of enterprises is of absolute importance for countries such as Malta, Estonia and Cyprus which recorded a SMEs' contribution of 81.8%, 76.7% and 76.3% respectively. Among the other main economies, there is Germany with 54.4%, France with 55.8% and Italy with 66.9% while the United Kingdom has definitely lower values than the average and closes the ranking with 47.7%. SMEs have made a much stronger contribution to the growth in value added in the period between 2016 and 2018 compared to the

longer period of 2013 to 2018. The increase in the SME contribution is almost entirely due to micro SMEs while the contribution of medium-sized SMEs has declined during this period

To support, *figure 2* shows that in 2018 SMEs contributed more than proportionally to the growth of value added and employment compared to their market share. They accounted for the 61% of the growth of value added although their share was only 57% of the overall value added. A particularly important effort comes from the micro-enterprises responsible for 29% of the growth compared to a share of only 21%. Similar are the projections for the contribution to employment growth, SMEs were responsible for 72% of growth compared to a share of 67% over total employment in 2018.

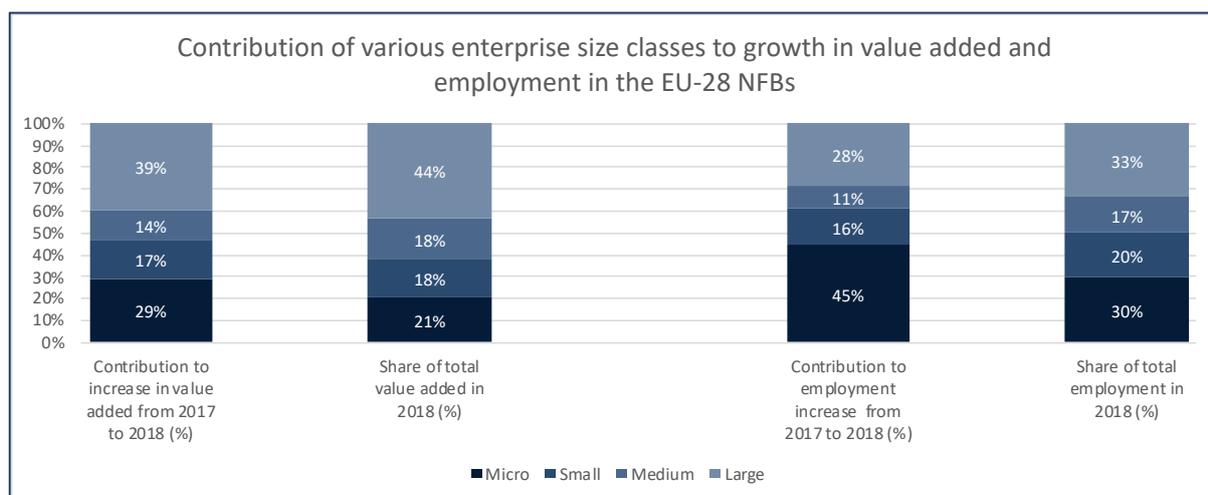


Figure 2: Contribution of various enterprise size classes to growth in value added and employment in the EU-28 NFBs in 2018. Source: EC, 2019-a

The small and medium-sized enterprises operating in NFBS performed slightly better than the nominal GDP of EU-28, the latter in 2018 recorded a + 3.2% against a growth in the value added of SMEs of + 4.1 % from the year before. The SMEs employment growth also increased marginally from 1.7% in 2017 to 1.8% in 2018 as well as the annual increase of SMEs population which jumped from + 1.5% in 2017 to +2% in 2018.

SMEs in the EU-28 non-financial economy are mostly active on five sectors: accommodation and food services, business services, construction, manufacturing and wholesale and retail trade. (EC, 2018). These five sectors together in 2017 accounted for 71% of total SME value added and 77% of both SME employment and SMEs population overall. As shown in *figure 3*, the wholesale and retail trade sector alone play a significant role compared to the others, it generates 1/5 of total SME value added, absorbs 1/5 of employment and represents more than one SME out of four in the EU-28 NFBS. In addition, in the sectors mentioned, with the exception of manufacturing, SMEs accounted for two thirds or more of the EU-28 sector's value added and employment overall.

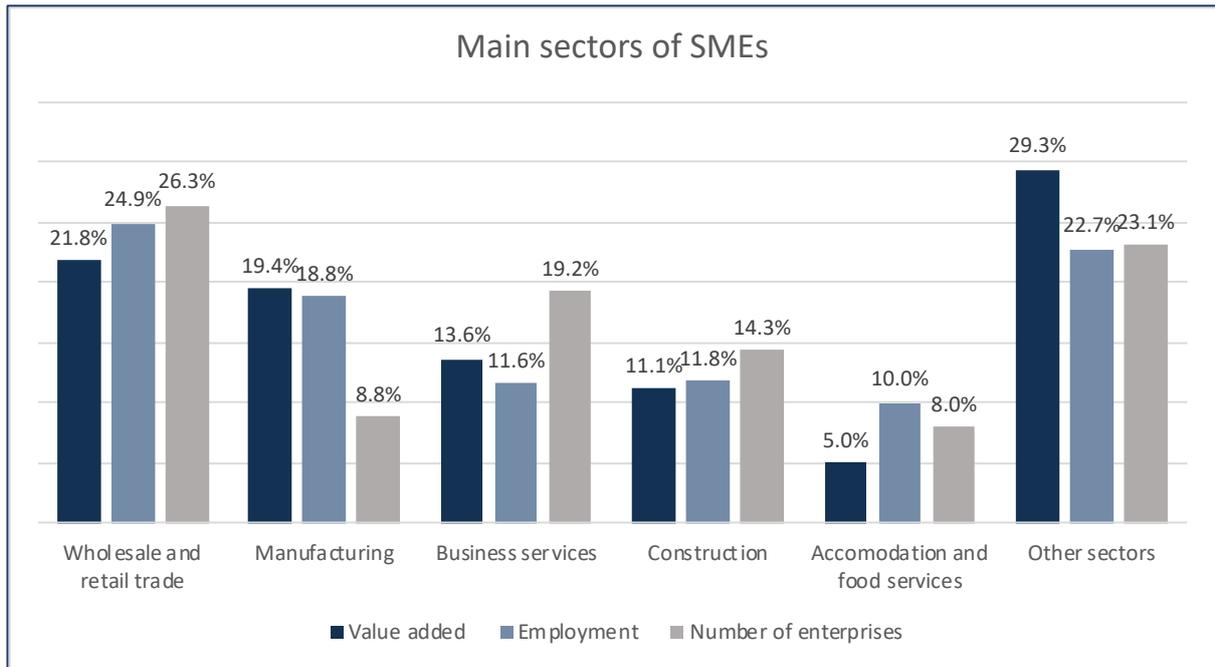


Figure 3: Main sectors in which SMEs are employed in terms of value added, employment and number of enterprises. Source: EC, 2018

1.4 The importance of Italian SMEs

Data show how in Europe the non-financial sector is based almost entirely on SMEs in terms of employment and number of active companies, their contribution is even more significant analyzing the Italian situation. Italian SMEs have a higher incidence both in terms of added value and employment than the average impact of European SMEs.

Class size	Number of enterprises			Number of persons employed			Value added		
	Italy		EU-28	Italy		EU-28	Italy		EU-28
	Number	Share	Share	Number	Share	Share	€ billion	Share	Share
Micro	3,599,695	94.9%	93.0%	6,719,319	44.9%	29.7%	208.1	28.4%	20.8%
Small	172,324	4.5%	5.9%	3,088,490	20.7%	20.1%	151.8	20.7%	17.6%
Medium-sized	19,226	0.5%	0.9%	1,873,898	12.5%	16.8%	131.0	17.9%	18.0%
SMEs	3,791,245	99.9%	99.8%	11,681,707	78.1%	66.6%	490.9	66.9%	56.4%
Large	3,380	0.1%	0.2%	3,270,222	21.9%	33.4%	242.5	33.1%	43.6%
Total	3,794,625	100.0%	100.0%	14,951,929	100.0%	100.0%	733.3	100.0%	100.0%

Table 1: Comparison of Italian SMEs with European SMEs on number of enterprises, number of employees and value added. Source: EC, 2019-b

The 99.9% of non-financial companies in Italy are represented by SMEs employing 78.1% of workers compared to a European average of 66.6%. Likewise the European average, the percentage of companies with less than 10 employees in Italy amounts to 94.9%, those between 10 and 50 are 4.5% while medium sized enterprises account for 0.9%. The 44.9% of workers are employed in companies

with fewer than 10 employees, therefore almost half of Italian employees work in micro-enterprises while in Europe less than one out of three people work in businesses of this size. Micro-enterprises are of particular importance even for value added, 28.4% of the value added of 2018 derives from companies with less than 10 employees while small enterprises account for 20.7% and medium sized enterprises for 17.9%.

Average SME labor productivity, calculated as value added per person employed, is approximately € 42,000, also somewhat lower than the EU average of € 44,600. Focusing on micro-enterprises, productivity drops to € 31,000 per person employed, € 6,000 less than the average productivity per person of European micro-enterprises equal to € 37,000 (EC, 2019-b).

The economic crisis of 2008 deeply affected Italian SMEs and the slow recovery process is still underway. The Cerved PMI Report on 2018 shows a slight slowdown in the profitability of SMEs compared to 2017. In 2018, value added grew by + 4.1% from the previous year but at a slower pace than labor costs (+5.6%), with negative effects on productivity and margins. For the first time since 2013 profitability indices of SMEs got worsen: the return on equity stood at 11% (against 11.7% in 2017), the return on investments was 5.9% (against 6.2%) while the profitability of assets stood at 5.0% (compared to 5.1% of the previous year).

The positive trend that began in 2013 and consolidated in 2017 seems to have lost momentum in 2018, the year in which turnover grew by 4.1% in nominal terms (the previous year was 4.8%), but remained substantially at 2017 levels in real terms. Indeed, Over the past 12 years, prices have risen at a reduced pace recording a cumulative increase in industrial production prices of around 10%. The two deflation periods of last decade were decisive, in 2009 prices fell by 4.7% while between 2013 and 2016 by 7% (the ECB's QE program was activated afterward to counter deflation). Backing to revenues, the slowdown affected all size classes of companies in each sector except for construction (+ 4.7%) and utilities (+ 7.8%). The other sectors that in 2018 experienced slowdowns in turnover growth are agriculture recording a + 2.7% (against + 4.4% in 2017), the industry sector with + 3.9% (against + 5.7%) and the service sector + 3.7% (against + 4.6% in the previous year).

The differences in size classes (*figure 4*) regarding turnover are limited, large companies recorded an increase of +0.8% in 2018 (compared to +6.1% in 2017) while medium and small businesses performed slightly better with +4.2% and + 3.9% respectively compared to an increase of + 5.3% and + 4.3% in 2017.

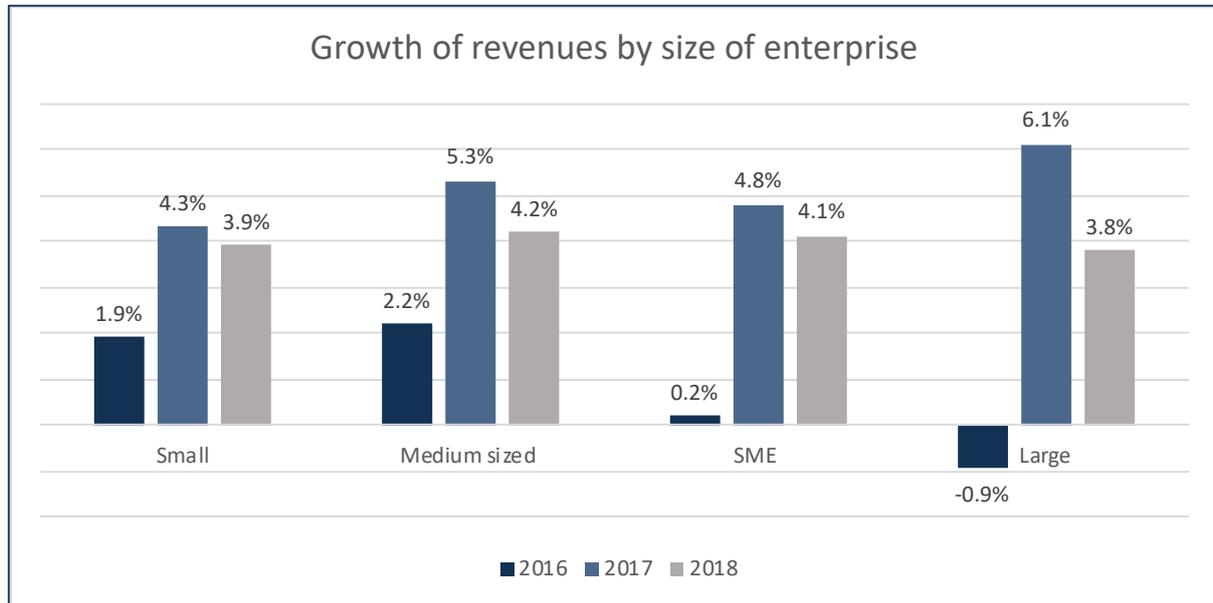


Figure 4: Growth of revenues of enterprises by size in 2016, 2017 and 2018. Source: Cerved, 2019

A medium-term vision is provided by data from the European Commission in 2019 Small Businesses Act Fact Sheet of Italy. An encouraging sign of recovery regarding value added is recorded in the period 2014-2018 where it grew by 12.4% (the largest contribution comes from medium-sized enterprises with + 16.4%) although this increase did not match the value-added growth generated by large firms. However, SME employment rose by only 4.7% in these four years, still 9.3% below pre-crisis level, and lagging behind the 10.7% employment growth of large firms. In the same period, SMEs did not manage to approach the growth of large enterprises in the wholesale and retail trade sector, the latter recorded a surprising + 31.7% in value added and + 11% in employment while SMEs grew by only 17.7% and 3.6%. The size gap in this industry decreases considering just the wholesale and retail trade including automobiles subsector, in which the SME value added grew by rate of 26.9% (also due to the favorable context in which the car and repair market operates since 2014).

1.5 The Italian Macroeconomic situation

In order to understand the framework in which real economy enterprises operate, it is necessary to provide a general view of the Italian macro economic situation. In 2019, the Gross Domestic Product (GDP) in Italy at current market prices was € 1,787,664 million with an increase of 1.2% (+ 0.3% in real terms) compared to 2018. Growth remains below the average of the European Union countries (+ 3.23% in 2018) and is weaker than the previous three years in which it reached a peak of + 2.28% between 2015 and 2016 (figure 5).

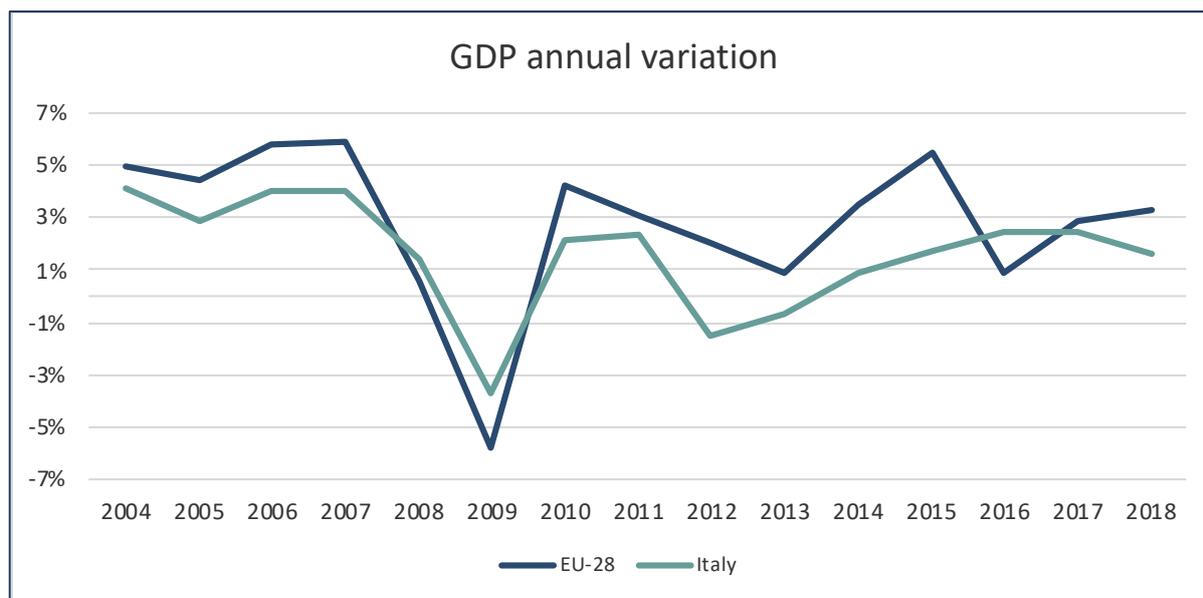


Figure 5: Annual variation of GDP at market prices of Italy and EU-28. Source: Eurostat

Analyzing the components affecting GDP growth, imports of goods and services decreased by 0.6% in volume compared to 2018; there were increases of 0.8% for national final consumption, 2.4% for gross fixed investments and 1.7% for exports of goods and services.

According to statistics released by ISTAT, in the fourth quarter of 2019 the Italian GDP recorded a decrease of - 0.22% respect the previous quarter but increased by 0.02% compared to the same period of 2018. Since 2018 the growth of the Italian economy seems to have stopped. After the 2019 results, it appears that the country has come out of the technical recession determined by the 2 consecutive contraction quarters dating back to 2018 (second and third quarter), however, it entered a stagnation phase given the slightly encouraging values of 2019. First estimates for 2020 confirm the slow growth that began at the end of 2017 is not yet over, the Italian GDP growth forecasts amount to only + 0.3% in real terms, the member country of the European Union whose economy will grow less. By 2021 the expected growth stands at 0.6%. The GDP growth forecast for the whole Union in 2020 is 1.4%, the economies that will grow most will be Malta (4%), Romania (3.8%) and Ireland (3.6%). Italy is therefore at the bottom of the ranking, preceded by Germany, with an expected growth of 1.1% (EC, 2020).

Industrial production, as shown in *figure 6*, recorded a fluctuating trend during the last decade, reaching the levels of 2012 at the end of 2019. In December 2019, the seasonally adjusted index of industrial production decreased by 2.7% compared to the previous month, the strongest drop since January 2018, while the index adjusted for calendar effects registered a decrease, in tendential terms, of 4.3%. For the first time in five years, the industrial production index closed negatively respect the year before, this has not happened since 2014.



Figure 6: Industrial production index of Italy since 2010. Source: Istat

Compared to the previous twelve months, in December 2019 were recorded contractions for intermediate goods (- 6.6%), energy (- 6%) and capital goods (- 4.7%) while the decrease was more limited for consumer goods (- 0.8%). Particularly negative is the performance of industrial automotive production which in 2019 recorded a - 13.9%, confirming how the crisis of the Italian car industry weighs drastically on GDP and employment.

In 2019, total added value in real terms grew by 0.2% compared to growth of 0.9% in 2018. The increase was marked in construction (+ 2.6%), in information and communication services (+ 2.2%) and in real estate activities (+ 1.7%). Instead, sectors recording a negative contribution were agriculture, forestry and fishing (- 1.6%), manufacturing industry (- 0.5%) and defense, education, health and social services sectors (- 0.7%).

Taking into account the habits of Italian households, *figure 7* highlights how the purchasing power of consumer families has been steadily increasing since 2013 (albeit lower than the values of 2010), reaching € 283,504 million in the third quarter of 2019. Between 2011 and 2012 was recorded a sharp drop of purchasing power (that had not occurred since the 1990s) due to a sharp reduction in entrepreneurial income and to the increase in taxation.

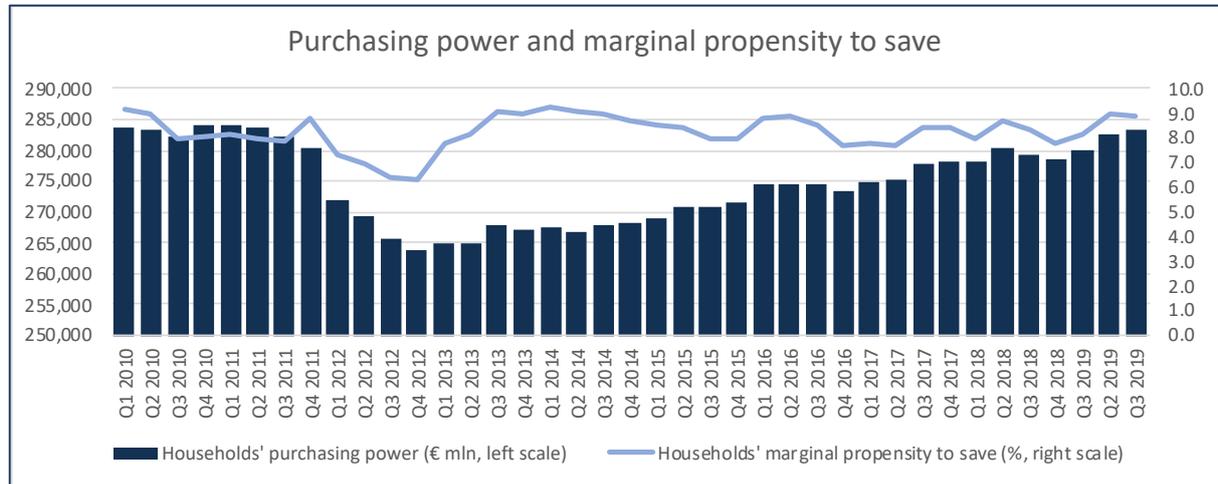


Figure 7: Purchasing power and marginal propensity to save of Italian families. Source: Istat

In the third quarter of 2019 gross disposable income of consumer households increased by 0.3% compared to the previous quarter while consumption grew by 0.4%. As a result, the propensity to save of consumer households decreased by 0.1 percentage points to 8.9%.

Chapter 2: Financing options of enterprises

As highlighted in the previous chapter, access to finance is essential for businesses to run both ordinary and long-term strategical operations. The forms of financing are and payable through different channels intermediated by multiple actors. The liquidity crisis that occurred after 2008 highlighted structural problems in the modern economy, putting a strain on companies relied on the banking system as primary source of resources. Relying on different funding channels, different intermediaries and different funding instruments allows enterprises to minimize the risk of depending solely on one or a few lenders.

However, there are many complications that companies encounter in accessing several financing options due to structural barriers. SMEs are the class of enterprises most afflicted by these problems because their size impacts on the level of credit they can request. It is well known that SMEs face more obstacles than large enterprises, for instance the latter have direct access to capital markets, while for SMEs, this holds to a lesser extent or they have no access at all. The long-standing necessity to strengthen capital structures and decreasing dependence from bank lending channel has now become more urgent. Many firms were obliged to increase leverage to overcome the crisis while banking institutions from OECD countries have been contracting their balance sheets to comply with the new regulatory framework (OECD, 2015).

Concerning internal barriers, the lack of collateral as guarantees for investors as well as the insufficient level of managers' financial skills discourage professional investors to disburse credit. In addition, market barriers as information asymmetry between financial institutions and SMEs management lead to a significant increase in transaction costs and that is not sustainable for businesses (OECD, 2019). These limitations are even more accentuated for new businesses, start-ups and innovative ventures with high growth potential that have to resort on more expensive solutions to carry out their projects and avoid implications for aggregate productivity and growth. Studies have shown that financial constraints impact negatively on labor productivity especially in the energy, gas supply, water supply, R&D and ICT sectors (Ferrando and Ruggieri, 2015). However, there are differences between the countries of the Euro-area, if on the one hand financial constraints have a slight impact on productivity in Germany and the Netherlands, they have a significant impact in Italy, France, Spain and Portugal where the estimated loss of their average real value added due to limited access to finance is around 10%.

The ease of accessing credit varies significantly from country to country. Financial constraints and credit conditions are much more relaxed in high-income countries respect middle-and low-income nations (as well as in remote and rural area). The funding gap in these countries prevents access to the most appropriate external financing channels and forces companies to rely on internal financing sources or informal external financing options.

SAFE (Survey to Access to Finance for Enterprises) statistics of 2019 highlight a quite stable SME funding mix between the member states of European Union. As happened in the previous 5 years, in 2019 credit line and overdraft are reported as the most relevant sources of external financing by SMEs (albeit in constant decline since 2014). Leasing / hire purchase and bank loans are considered to be second and third most relevant while in the fourth and fifth place there are trade credit and subsidized bank loans. 25% of SMEs consider the use of internal funds relevant while only 11% pay particular attention on raising capital on the equity market. Therefore, it is evident that European companies still rely on straight debt a main source of finance. In the EU both credit lines and bank loans are still considered by SMEs the most relevant source of finance and, more generally, in 2019 80% of SMEs used some form of debt financing¹ (EC, 2019-c).

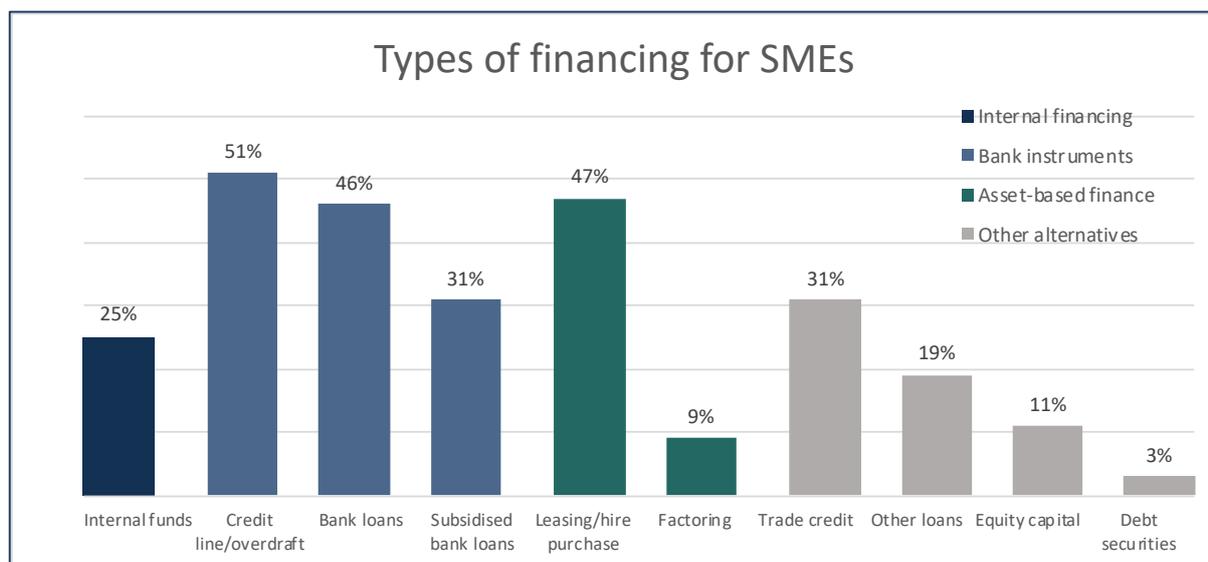


Figure 8: Relevance of different financing options for SMEs in the EU28. Source EC,2019-c.

However, over the past 5 years a greater interest for asset-based financing and internal funding emerged. In particular, given that for 25% of companies internal financing is of primary importance, it is necessary to evaluate if it is sustainable to support a business relying just on internal resources. In 2009 Europe experienced a sharp drop in SMEs' profit margins (figure 9), as measured by operating surplus expressed as a percentage of value added, which passed from 40% in 2008 to around 35% in

¹ Debt financing is the sum of credit line, bank overdraft or credit cards overdraft, leasing or hire-purchase, factoring, trade credit, bank loan, other loan, grants or subsidized bank loan, debt securities issued

the following 12 months (OECD, 2019). Afterward, profit margins have gradually increased since 2012 reaching 43% in 2015 and surpassing pre-crisis levels for almost all European countries.

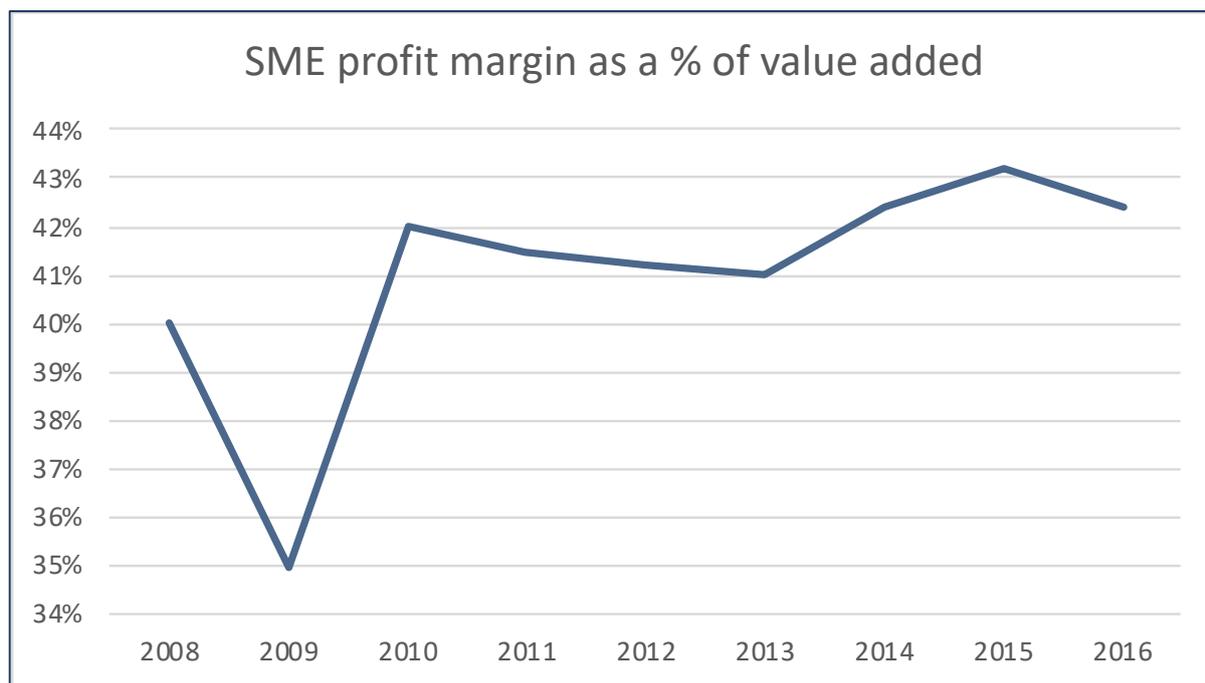


Figure 9: SMEs' profit margin as a percentage of value added. Source: OECD, 2019

Table 2 shows main alternative financing methods to traditional bank loan used by enterprises arranged by nature and by the level of risk/return for investors. Asset-based finance and alternative debt constitute a low risk option for investors who provide resources for projects even in the absence of comprehensive, transparent, and standardized credit record, especially when backed by collateral or guarantees by the enterprise. Hybrid instruments aim to exploit the advantages of debt and risk capital instruments, providing investors with both predetermined cash inflows and extra earnings that depend on the performance of the financed business. Lastly, equity instruments are characterized by an uncertain outcome and are employed for high growth potential enterprises committing investors generally for a medium to long term.

Low risk/return	Low risk/return	Medium risk/return	High risk/return
Asset-based finance	Alternative debt	Hybrid instruments	Equity instruments
<ul style="list-style-type: none"> • Asset-based lending • Factoring • Purchase order finance • Warehouse receipts • Leasing 	<ul style="list-style-type: none"> • Corporate bonds • Securitised debt • Covered bonds • Venture debt • Private placement • Lending crowdfunding 	<ul style="list-style-type: none"> • Subordinated debt • Silent participations • Participating loans • Convertible bonds • Bonds with warrants • Mezzanine finance 	<ul style="list-style-type: none"> • Private equity • Business angels • Venture capital • Public listing • Equity crowdfunding

Table 2: Alternative financing options for enterprises. Source: OECD, 2015

2.1 Banking Instruments

The global impact of the 2008 financial crisis and the even more recent 2012 sovereign debt crisis in Europe led to profound transformations in the European capital market. Traditional bank loans are the most employed tool by enterprises to finance their operational and strategic activities. A vibrant ecosystem that grants credit to companies that want to achieve their objectives is the backbone for building a thriving economy at both nationally and community level.

Statistics collected by the European Central Bank regarding the growth rate of loans granted by banks to European NFCs show the extent of the credit crunch following the two crises of the last 15 years. Loans granted recorded strong growth rates in the period prior to 2008, moving in stock terms from € 3 trillion at the beginning of 2003 to € 4.93 trillion at the end of 2008. After the peak of growth of +15% recorded in April 2008, the contraction of the supply took place and led to negative growth rates starting from October 2009. The intense contraction at the beginning of 2010 recorded a growth rate of -2.57% and euro area loans have continued to reduce for the next 10 months. The sovereign debt crisis led the bank credit market to a subsequent recession which hit a negative peak in February 2014 (-3.5%). A slow recovery process has begun since then bringing the European market to positive growth starting from September 2015. Although not reaching the pre-crisis levels, the annual growth rate has stabilized at rates of around 4% in the last 18 months with a slight decrease in the last quarter of 2019.

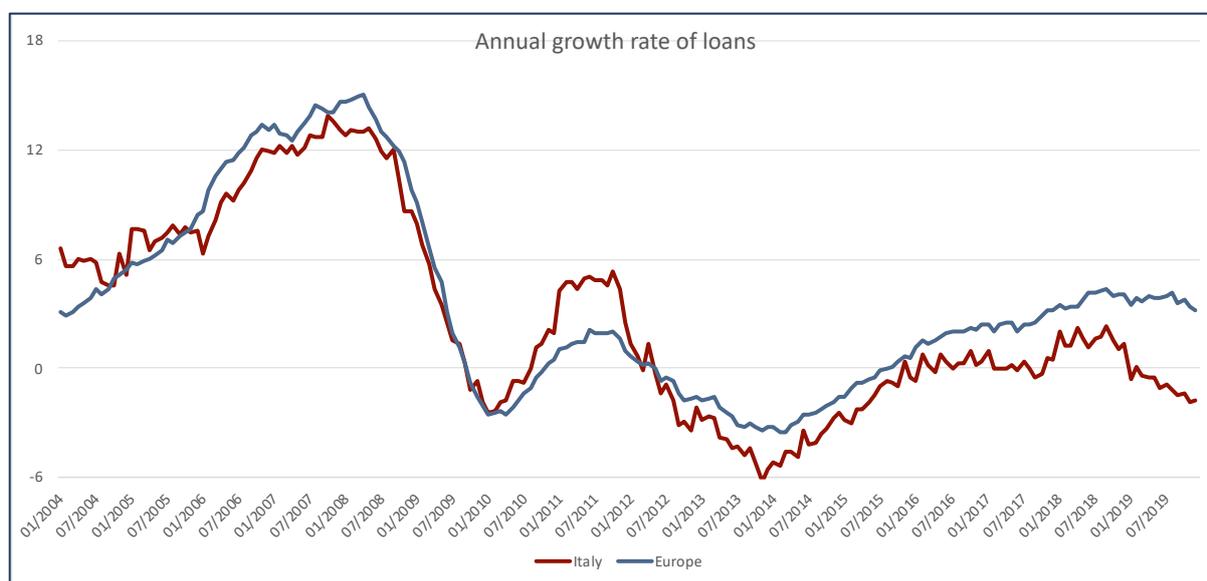


Figure 10: Annual growth rate of loans granted by Italian and European Monetary financial institutions (% on the axis). Source: European Central Bank Database

According to latest statistics in the Economic Bulletin provided by European Central Bank, the annual growth rate of MFI loans granted to the private sector (include loans to households and NFCs) stood at 3.6% in November 2019, after 3.7% in October. The slight decrease in the aggregate indicator does not depend on loans granted to households as they have remained unchanged, the variation is

therefore to be found in loans to the corporate sector, whose growth rate falls from 4.2% in August to 3.4% in November, recording a further drop to 3.2% in December. Therefore, if the recovery seems to have started at Community level, it is necessary to underline that the data come from countries with heterogeneous situations. In Italy the outstanding amount of loans to NFCs granted by MFI is continuously decreasing. Just as happened in the Euro Area, between 2003 and 2009 the volume of loans granted in Italy grew at a steady rate from € 560 billion to around € 910 billion in just 6 years. After a slight decrease between 2009 and 2010, the peak was recorded in 2011 with an outstanding amount of € 950 billion; afterward, the slow decline began, which saw loans decrease across the country reaching a value of € 766 billion at the end of 2019. At Community level, loans growth continued to benefit from historically low bank lending rates while the slowdown in economic activity dampened loan demand. Lending rates remained at historically very low levels, declining in line with market reference rates over past months.

An indicator used to analyze bank interest rates is the composite bank lending indicator, a volume weighted average of borrowing cost of loans from different maturities mainly employed to assess the effectiveness of monetary policy pass-through across Euro area countries. In December 2019 the composite bank lending rates for loans to NFCs remained broadly unchanged while the component relating to households recorded a drop of 0.6 percentage points from 1.47% in November to 1.41% in December. Starting in 2009, the borrowing cost for NFCs began to decrease and halve in the following 12 months only. The EIF refers to that in August 2019 the NFC component recorded the historical low level of 1.52%. Overall, composite bank lending rates for loans to NFCs and households have fallen significantly since the ECB undertook credit easing measures 2014. Between May 2014 and December 2019 composite lending rates on loans to NFCs and households fell by around 140 and 150 basis points respectively (ECB, 2020). The euro area bank lending survey (BLS) provides a rich set of soft information on changes to bank lending conditions since 2003 that combined with loan growth and lending rates allows to understand developments in loan supply and demand and the related driving factors. The survey highlighted that following the severe tightening of banks' approval criteria for loans to NFCs during the financial and sovereign debt crises, since 2014 a considerable net easing of credit standards in the Euro area has been recorded. Credit standards are banks' internal guidelines or loan approval criteria and their variations directly affect actual NFC loan growth therefore, they are helpful for assessing loan growth developments over the coming years (ECB, 2019).

The credit standard easing period recorded since the first quarter of 2014 is the longest since the survey started, this net easing lasted for about 20 quarters (except for the second half of 2016) until

the first quarter of 2019 and supported the recovery in NFC bank loan growth and economic activity overall in the aftermath of the financial crisis.

In the second quarter of 2019, the net percentage² of banks reporting tightening standing at 5% mainly due to an increase in perceived risk owing to both the general economic situation and the firm-specific situation. The situation in Q4 2019 remained broadly unchanged with the net percentage of banks reporting tightening standing at 1%, compared with - 2% in the third quarter. However, the value is lower than the average of + 8.2% calculated since the statistics are available.

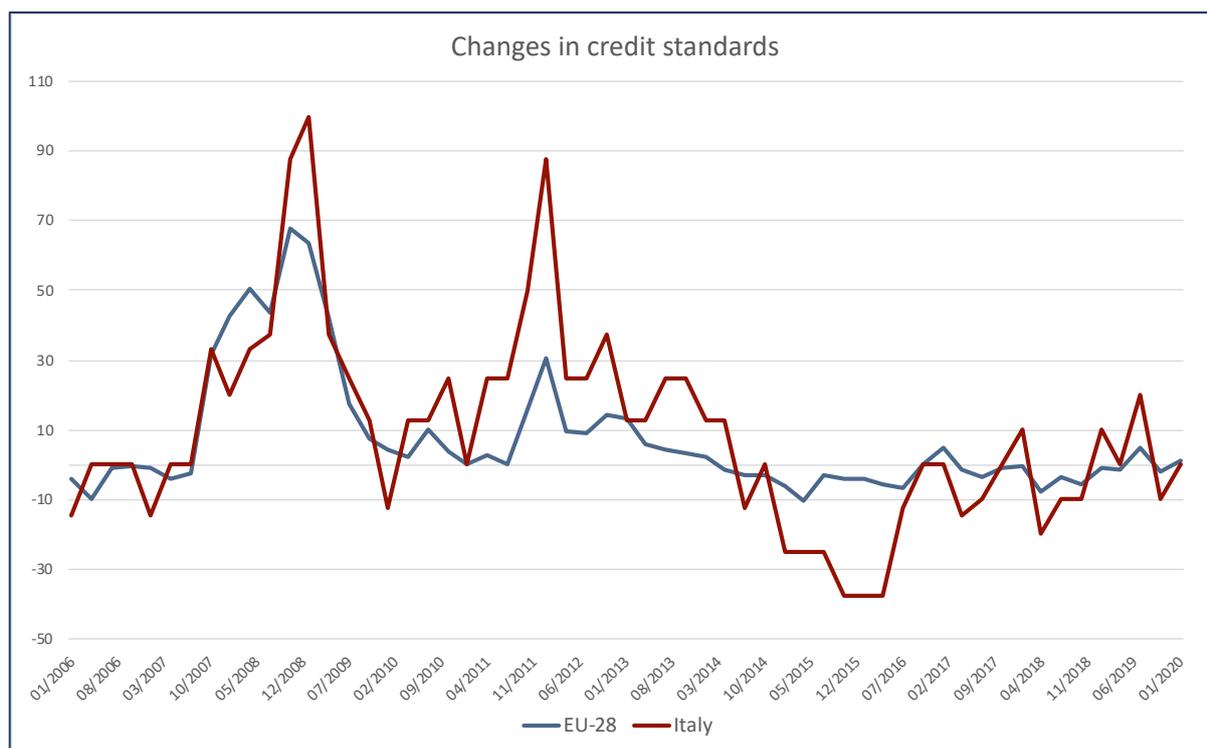


Figure 11: Percentage of changes in credit standard conditions in Europe and Italy (% on the axis). Source: ECB Statistical warehouse

Concerning factors influencing credit standards, banks' risk continued to have a tightening impact while, competition from other banks continued to have an easing effect. Finally, banks' risk tolerance, funding costs and balance sheets had no impact on changes recorded in the last reference period. The tightening was mainly experienced by small and medium-sized enterprises (- 2%), while remained unchanged for loans to large firms. *Figure 11* clearly highlights how changes credit standards registered by Italian banks are in line with European ones, but the firsts are much more volatile. The tightening of credit standard in Italy was more pronounced in 2008 and even more in 2011 compared to Europe while the easing in the following years was much more evident. The easing period continued in 2018 while in 2019 banks became more cautious about lending with a yearly peak of net percentage

² Weighted net percentage based on the share of each country in the total loan outstanding amounts of the area aggregate and of each bank in the total loan outstanding amount of the BLS banks sample. Net percentage is defined as the Difference between the share of banks reporting that credit standards applied to loan approval have been tightened and the share of banks reporting that they have been eased.

at + 20% in July mainly attributable to a lower risk tolerance and higher perceived risk. Conversely, other factors such as competition, funding costs and balance sheet constraints continued to have an easing impact on credit standards.

Bank lending demand by companies in the euro area has been fluctuating over the past 15 years³. From 2008 to 2010 it decreased to - 40% at the beginning of 2009, then it slightly increased until 2011. From October, a contraction period began which lasted until 2014, the year in which the demand for loans banks rose again until the end of 2019. The net demand for loans to enterprises declined to - 8% in the fourth quarter of 2019 (from 1% in the third quarter of 2019), the first contraction since the fourth quarter of 2013 , whereas banks had expected it to remain stable overall. The decline recorded similar values for both SMEs and large enterprises. At a Community level, the contraction that began in 2018 largely depends on the decrease in the contribution of demand for fixed investments, working capital and inventories, which had instead been the main drivers for growth in 2017. In 2019 demand for loans to enterprises continued to be supported by the low general level of interest rates and, to a lesser extent, M&A activities while the use of alternative financial instruments has led companies to seek other forms of financing.

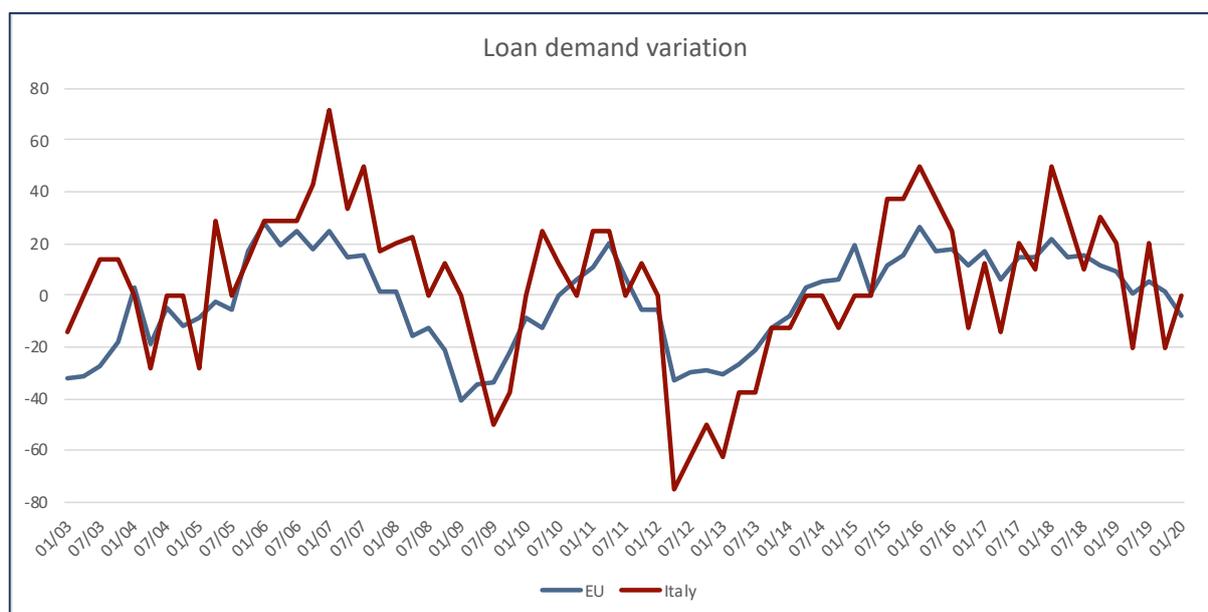


Figure 12: Loan demand variation in Europe and Italy registered by MFI. Source: ECB Statistical Warehouse

Comparing the largest euro area countries, net demand for loans to non-financial enterprises declined in Spain and, to a lesser extent, in France, while it increased in Germany and remained unchanged in Italy where the positive effect of low interest rate was in contrast with the use of alternative finance and the contraction of demand for financing inventories and working capital. The trend in loan demand in the Italian scenario appears to be more fluctuating than in Europe due to the strong

³ Results from the Q4 2019 Bank lending survey (BLS)

dependence of companies on the banking channel as the first form of financing. The effect of the crisis of loan supply in Italy was revealed with almost a year of delay compared to Europe. The reduction began in 2009 and 2012 started with a contraction more than double compared to the European average, due to the fact that Italy was one of the countries most affected by the sovereign debt crisis.

During the closing quarter of 2019 the net percentages of banks reporting an increase in the share of loan rejections continue to expand in the Euro Area reaching 9% of all applications, the highest level ever recorded since 2015, up from 7% in the previous quarter. In particular, the net rejection rate increased in France and Germany mainly due to the tightening impact that risk perceptions had on loans credit standards, while it decreased in Italy and remained unchanged in Spain. In conclusion, the credit crunch has affected Italy in a more incisive way than other Member States of the European Union and the recovery of the bank loan sector is still undergoing therefore, enterprises faced a sharp decrease in credit supply and had to resort to alternative sources to provide for their financial needs.

2.2 Asset-based financing

2.2.1 Asset-based lending

Asset based lending is any form of lending secured by an asset. In the event that the borrower fails to repay the loan, the lender can take the collateral and liquidate it on the market. With this tool, the amount of the loan that a company can obtain does not depend on its creditworthiness but on the value of the asset used as collateral, therefore analyzes are carried out on the market value and on the ease of liquidation of the asset. As collateral are generally pledged account receivables, equipment, inventory and real estate but even machinery and equipment. This process is often used by SMEs both to raise short-term funds in cases of shortage of working capital and in cases where normal fundraising channels are not available, such as capital markets (selling bonds to investors) and traditional unsecured or secured bank loans. In addition to the credit risk that the lenders must consider, there are other problems related to the securing mechanism underlying asset-based lending that must be included in the evaluation (OECD, 2015). Among the most important problems that lenders must evaluate is collateral risk, the risk that collateral may lose value at a point that it is not sufficient to cover the loan anymore. There is a risk of illiquidity of the asset as the liquidation process on the market requires time and resources (especially for assets such as inventory, machineries and equipment). Finally, lenders need to make sure to not incur costly legal documentation errors. In addition to service charge related to the administrative costs of the account, the borrower generally pays a higher interest rate than traditional bank debt, the interest rate also depends on the quality

and liquidity of the asset. Asset-based lending commonly references the loan-to-value ratio (LTV) as the percentage of credit disbursed based on the value of the asset placed as collateral. Asset based lenders typically lend at a discount to the actual value of the asset in placed and the discount varies according to the type of asset, the LTV is usually higher for easily tradable assets as accounts receivables (about 80%) while it is lower for less liquid assets as inventory (about 45%).

2.2.2 Factoring

Factoring is a form of short-term financing whereby a company (seller) sells its accounts receivables to a professional institution (factor) in exchange for an immediate payment. The relevance of factoring has grown in recent years as a means of providing for the need for companies to balance cash outflows and inflows, also due to the continuous difficulties of collecting payments. The transferred credits refer to products or services provided to a customer for which payment has not been collected yet. The intermediary purchases the pending credits at a price lower than the nominal value, the factor pays approximately 80% of the face value to the counterparty as soon as it receives an assignment or the receivable (Arnaboldi, Azzone and Giorgino, 2014) then the factor collects the payments made by customer at the specific date of the invoices. A factoring contract can occur with recourse and without recourse. Contracts with recourse expect that the seller has to account the insolvency risk of the debtor, the factor requires the return of the amount paid in advance to the seller in case the debtor does not fulfill its duties at maturity. In contracts without recourse, the factor assumes the customer's risk of insolvency, therefore an insolvency risk analysis is included in the contract and in the purchase price of the trade receivables. If the credits are in a foreign currency, it is necessary to consider the exchange rate risk. The typical factoring contract comprises costs as interest payment on the advanced amounts, management fees and credit administration, invoice fees, account and proceeds fees and a percentage commission based on the face value of receivables.

The factoring industry in Europe has grown at rapid pace since the great recession, the Federation for the Factoring and Commercial Finance Industry (EUF) reported that in 9 years total factoring volume rose from € 1,140,449 million in 2011 to € 1,727,915 million in 2018. In 2018 the largest contribution came from the UK in terms of volume amounted to 18.5% while France accounted for 18%. Italy was the third largest country in terms of contributions with 14.3% equivalent to € 247,430 million, more than double the value registered in 2007 which amounted to € 122,800 million. The growing interest on this form of financing in the last 10 years has shown how the perception of this instrument has changed. As reported by Franco Marcarini⁴, Head of Factoring of Illimity Bank, factoring has passed as

⁴ Interview at the Ali Expo 2019 promoted by Azimut.

a tool used only by companies in difficulty to an instrument capable of making the company's growth sustainable in a professional and solid way.

2.2.3 Purchase order finance

Purchase order finance is an asset base financing instrument that provides capital to pay suppliers upfront for verified purchase orders. It is a tool that allows companies to accept orders from customers even if they do not have the adequate financial resources in order to start production. In this case, the loan represents a working capital advance used to support the production of SMEs in order to satisfy an order that otherwise they would not be able to execute, losing both the profit and the customer's trust. It is mainly used by companies that operate as manufacturers, distributors, wholesalers, resellers, importers and exporters. First of all, a business receives a substantial order from a customer, to start production it is necessary to pay the supplier in advance to obtain productive resources. This originates the working capital gap since the customer pays the order only after 30/60 days⁵ having received it therefore the company runs the risk of finding itself without liquidity to start production.

In the world the average number of Days Sales Outstanding (DSO) amounted to 65 during 2018 (based on 20 different product sectors) while in Italy it even rose to 88 (Euler Hermes, 2019). Through the POF, a company, after having received a commission from a customer and estimated all the costs necessary to execute it, transfers the order to a financier who evaluates whether to disburse credit. The assessment is not based on the company's creditworthiness but on the customer's ability to pay the order and on the company's production capacity regarding the execution of the order. Subsequently, if the loan is accepted, the lender pays a portion of the total cost directly to the supplier, generally approved direct costs are paid in advance. Once the process is over, the customer's payment arrives at the financier who retains his part and any commissions before transferring it to the manufacturing company. The POF must be understood as an instrument that does not replace traditional bank lending but as an alternative source of financing to be used in moments of a sudden demand increases. Among the main advantages, the POF is much faster to obtain than a traditional loan and is more appealing to new companies lacking working capital and without track record of at least 3-4 years which allows them to receive traditional loans. Indeed, the credit is disbursed on the basis of the

⁵ European Union Late Payment Directive, 2011/7/EU concerning commercial late payments aims to achieve a decisive shift to a culture of prompt payment and requires debtors to pay interest and the reasonable recovery costs of the creditor if they do not pay for goods or services on time. The limits set are up to 60 days for businesses and within 30 days for public authorities

customer's creditworthiness and not on the company's balance sheet, giving to fast-growing companies the opportunity to pursue their ambitions. (Universal funding, 2018).

2.2.4 Warehouse receipts

Warehouse receipts financing is an asset-based financing instrument through which loans are backed by commodities stored in a particular warehouse or vault. A warehouse receipt is basically a document that proves ownership of a given commodity that is stored in a recognized location. After receiving the document, the depositor can ask for a loan to a credit institution pledging the receipt as collateral, then the lender imposes a bond on the goods in stock until the debt is repaid. Warehouse receipts play an important role in businesses where small merchants operate with large quantities food products, in particular it is well suited for producers of storable agricultural products. In addition to the traditional storage costs that each company has to bear, a series of fees, taxes and interest must be paid to start the financing. Very often, to reduce the impact of these expenses, multiple depositors pool their resources together to access a Warehouse Receipt System (WRS). This system is of particular relevance in developing African countries, where agriculture is the only means of livelihood for entire populations. WRS can contribute to improve agricultural output and productivity by helping to solve many of the marketing and financing constraints in the farm sector. Furthermore, WRS can reduce transaction costs and strengthen the capacity of local markets to absorb surpluses so as to sustain increase in output and avoid unexpected price drops (Onumah, 2010). To properly work, the WRS must be accompanied by an adequate legislative framework with regulatory and supervisory agency and obviously, banks familiar with the use of warehouse receipts.

The process can be provided under three different warehousing agreements (FAO, 2009):

- *Private warehouse* in which the warehouse is a part of the company's operation, so production and stocking are performed in the same place;
- *Field warehouse* where the collateral management company takes over the vault of the depositor (by leasing it for a fee) and becomes accountable for the control of the commodities to be used as guarantee;
- *Public warehouse* which is a large storage area that serves many businesses, the warehouse is owned by an operator acting as custodian that stores commodities for third parties.

2.2.5 Leasing

In several countries, leasing is adopted to finance the utilization of industrial equipment, vehicles and real estate. A lease is a contractual agreement between a lessee and a lessor (which are respectively the user and the owner of the asset) that gives the right to the lessee to employ an asset for a certain

period in exchange for periodic payments to the lessor. As with other asset-based financing instruments, the contract is not based on the credit history of the company in search of financing, but on its ability to make periodic payments. The lessor can be the asset manufacturer or an independent leasing company that acquires the asset from a manufacturer and leases it out to make a profit. From an accounting point of view, leasing could be considered as an off-balance sheet financing, as a firm has the possibility use an asset and not necessarily disclose the existence of the lease contract on the balance sheet. Leasing can satisfy the needs of SMEs that do not have the working capital necessary to purchase equipment but at the same time cannot access the traditional bank loan due to high risk, lack of collateral or opacity of the business (OECD, 2015). For capital intensive sectors as the airline industry, leasing can represent a solution for companies with weak balance sheets or with poor future prospects to increase capacity without locking capital. It is possible to identify two different types of leasing based on the type of transaction that takes place rather than on the form of the transaction itself.

Operating lease is defined as a contractual agreement through which the lessee has the possibility of using an asset for a period generally less than the life of the asset itself. Assets employed in the transaction are usually standard and the user has the option to renew the asset, give it back, or even cancel the leasing prior to the expiration date. The ownership of the asset resides with the lessor, with the lessee bearing little or no risk if the asset becomes obsolete, plus the lessee pays the rent but installation, maintenance and other related costs are on the behalf of lessor.

The other type is finance leasing, this contract generally last for the entire life of the asset which is less standardized than the operating lease to better accomplish firm's needs. Although the legal owner of the assets remains the lessor during the term of the contract, the customer bears both the risks and rewards related to the asset's ownership since the asset appears in the financial statement of the company who actually uses it. In this case, there are different possibilities and agreements to make the accounting to consider depreciation and the renting. Companies often face the decision between leasing an asset rather than buying it, leasing an asset is less capital intensive and lets the company deduct the entire amount of the lease payments it makes. Furthermore, on a bureaucratic level, the procedure for obtaining a lease is simpler and faster than for obtaining a bank loan.

In 2018 in Europe the total new leasing volumes amounted to € 386.4 billion an increase of 7.7% compared to 2017. The UK was the leading European leasing market in 2018, with new volumes worth € 91.9 billion, followed by Germany with € 57.6 billion and France with € 56.2 billion (Leaseurope,

2018). The portfolio of outstanding leased assets in Europe grew by 6.4%, reaching € 832.6 billion at the end of 2018, concerning asset classes, both equipment and vehicles leasing grew by 7.9% while real estate leasing by 2.5%. The situation in Italy explained by the Italian Association of Leasing "Assilea" shows how the positive trend started in 2014 continued even in 2018 reaching nearly € 30 billions of volume of new loans, with an increase of 5.5% compared to 2017. Compared to 2017, interesting performances were recorded in the automotive, equipment and real estate leasing sectors, which recorded growth in value of 4.5%, 5.7% and 9.9% respectively. On the other hand, the leasing sectors of ships & aircrafts and renewable energy were struggling with a reduction of 1.2% and 5.5%. In conclusion, leasing represents an additional financing technique for SMEs (without credit track record and limited possibilities to provide collateral) that expands the access to short and medium-term financing for capital equipment (Kraemer-Eis and Lang, 2012).

2.3 Alternative debt

2.3.1 Corporate bonds

Bond is a security that requires the issuer to pay interests (called coupons) and make principal payments to the bondholders at maturity or even on specified dates. The requirements for issuing bonds are regulated country by country and only a limited number of companies can undertake the process. Corporate Bonds are bonds issued by profit firms, generally banks and industrial companies (with stable cash flow and consolidated business) and they could generate higher return for investor compared to Government Bonds. Bonds could be issued in different currencies in international markets where they could be listed with foreign bonds. There are several variants aimed at satisfying the different preferences of issuers and investors, the characteristics refer to coupon rate, maturity, credit quality, priority claim, and to collateral.

Coupons are nothing more than interest payments that investors receive from issuers for the money disbursed. Bonds can be of fixed interest for the entire duration of the contract, variable interest for which coupon (either periodical or at maturity) and the reimbursement of the principal are related to a parameter or a benchmark or may not pay coupons. In the case of zero-coupon bonds, the return for investors is limited to the difference between the principal and the price initially paid. Concerning the maturity of the security, bonds can be defined as short term (less than 3 years), medium term (4 to 10 years) and long term (for maturities longer than 10 years). Bonds can also be discriminated for their credit risk; they are divided into investment grade (higher rating and less risky) and non-investment grade (lower rating and highly risky). The ratings are established by credit risk agencies⁶

⁶ In a worldwide perspective the three most influent are Standard & Poor's, Moody's Investor Service and Fitch Rating

that perform credit risk analyzes on issuers to define the degree of soundness of the enterprise and the quality of instruments it issues.

The bond price is negatively correlated with market interest rate. Indeed, for a given coupon rate, if the market interest rate increases the price of the bond decreases because it pays less, consequently, if market interest rate goes down the bond price increases because outperforms the market. Bonds, as all debt securities, always have priority over equity securities in the event of default, in addition they can be prioritized or subordinated compared to the other borrower's obligations in case of bankruptcy. Lastly, corporate bonds can be either secured over a specific asset or be unsecured (in this case is called "*debenture*"). Corporate bonds can be issued to the general public or to a select group of investors through private placements, this latter process is typically used for smaller bond offerings. The three most important risks to which the bondholders are exposed are the credit risk, inflation risk and interest rate risk. The credit risk is the threat that the issuer is unable to pay the interest and the principal according to the pre-established scheme, the inflation risk arises when inflation reduces the real value of the bond and its payments (it impacts on long-term bonds) and finally the interest rate risk concerns the possibility that the market interest rate may become more attractive than the coupon rate.

Finally, two other risk factors need to be considered (OECD, 2015): liquidity risk (the difficulty an investor faces in reselling the bond on a secondary market) and call risk (the risk that the bond can be called back by the issuer before the maturity). The corporate bonds market is dominated by large financial firms with stable cash flows, low volatility stock and a sound credit history. SMEs very often do not have the structural characteristics to undertake an issuing bonds operation or in any case would not receive a sufficient rating to be classified as investment grade. For this reason, more and more specialized markets on SME bond trading are emerging globally in which the requirements for raising funds through corporate bonds are simplified to promote flow of funds.

After the 2008 financial crisis, non-financial companies increasingly opted for issuing corporate bonds to finance their operations. Between 2008 and 2018 global corporate bond issuance averaged USD 1.7 trillion per year, compared to an annual average of USD 864 billion during the years before (Çelik, Demirtaş and Isaksson, 2019). As a result, in 2018 the amount of debt securities in the form of corporate bonds of non-financial companies recorded twice the value of the pre-crisis value, reaching USD 13 trillion. With regard to the quality of the bonds issued, was registered an increase in BBB bonds which are the lower tranche of investment grade bonds. While in the 2000-2007 period, BBB rated bonds constituted on average 38.9% of global investment-grade issuance, they averaged 44.1% in the 2008-2018 period and reached an outstanding amount of 53.8% in 2018. Different was the trend in

the non-investment grade category. In this contest the average annual share of BB rated bonds in global non-investment grade issuance has increased from 35.2% before 2008 to 50% in the 2008-2018 period and amounted to 53.9% as of 2018.

For the period 2009-2016, the European bond market has compensated the decrease of bank loans to NFCs in euro area countries, during these seven years the stock of loans extended to corporates decreased by € 536 billion against an increase in debt securities a long term of € 567 billion (EC, 2017). Companies from advanced economies, which hold 79% of the total global outstanding amount as of 2018, have seen their corporate bond volume grow by 70%, from USD 5.97 trillion in 2008 to USD 10.17 trillion in 2018. A great contribution to the diffusion of this instrument derives from emerging economies, (first of all China) which recorded a total outstanding amount of USD 2.78 trillion in 2018, up 395% compared to ten years before. China has moved from a minor level of issuance prior to the 2008 crisis to a record issuance amount of USD 590 billion just in 2016, ranking second highest in the world.

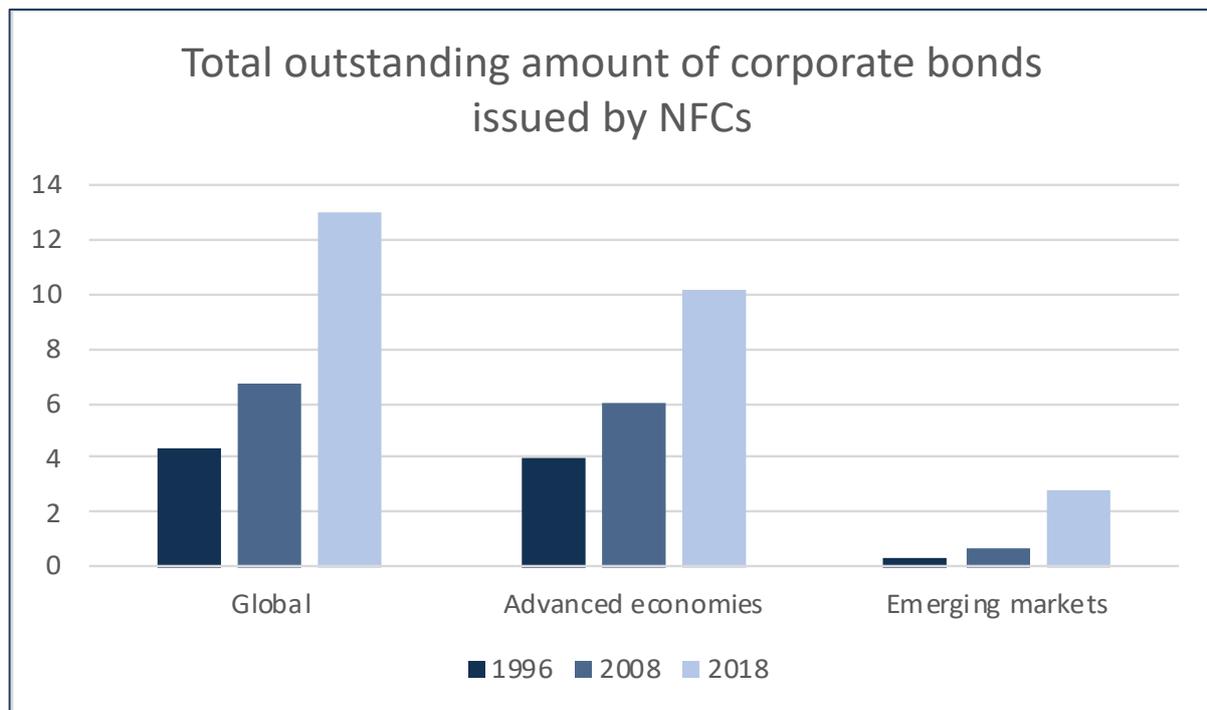


Figure 13: Total outstanding amount of corporate bonds issued by non-financial companies globally (USD trillion). Source: Celik, Dermatas and Isaksson, 2019

In Italy, the use of the debt securities market was largely influenced by the reduction of bank credit afterward the financial crisis. Nowadays, traditional bank loans, are often used as short-term working capital solution, while long term corporate bonds can be issued for projects that last many years. In addition, the absence or relatively low level of collateral requirements gives corporate bond financing a special role as a source of financing compared to other loans (OECD, 2020).

Among the enabling factors, the level of interest rates on the market has encouraged Italian non-financial companies to resort to the issue of debt securities on the securities market. In the second quarter of 2019 the outstanding amount of debt securities issued by Italian non-financial companies was € 162 billion compared to € 758 billion of outstanding corporate bonds issued by financial corporations.

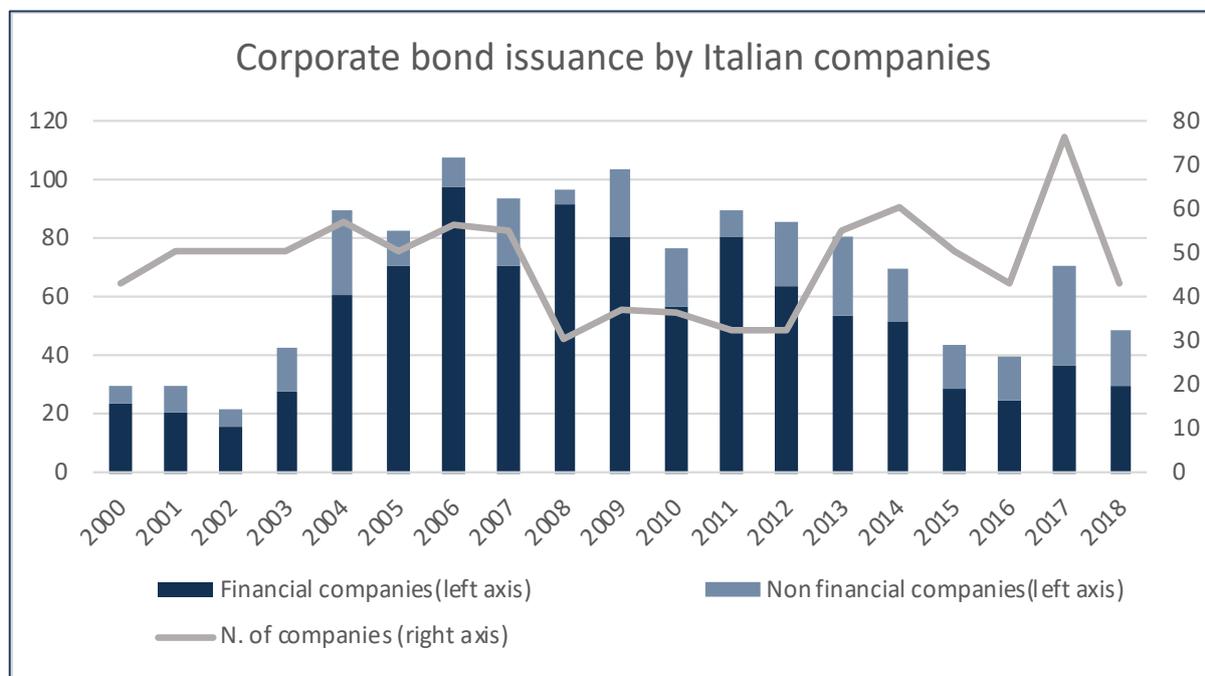


Figure 14: Corporate bond issuance by Italian companies (€ million on left axis). Source: OECD, 2020

Figure 14 displays the annual corporate bond issuance by Italian corporations, a sharp increase was registered in 2004 since the bond market doubled the issuance volume hitting € 88 billion. On average, this value was maintained until 2012; the following four years recorded a drop in new issues, falling below the symbolic threshold of € 50 billion. After an increase in 2017, the total amount of issuances in 2018 decreased to € 47 billion, the contraction was mainly driven by non-financial companies whose total issuance amount almost halved in 2018 (as well as the number of issuing companies) compared to the previous year.

Regarding the composition of investors, there are substantial differences compared to other European economies. Foreign investors hold more than 70% of the bonds issued by large Italian non-financial companies, while the holdings by foreign investors in France and Germany are 51% and 61%, respectively. Domestic institutional investors reserve only a small portion of their assets under management for investments in debt securities of domestic non-financial companies: Italian open-end investment funds and Italian pension funds reserve respectively 2% and 16.6% of their assets. If the research for foreign financiers in a globalized economy is essential for attracting new capital, an over reliance on these investors could become an obstacle especially for small companies have not adequate international visibility to attract foreign investors (OECD, 2020).

A structural difference that characterizes the Italian and European market from the US market and the more developed Asian countries as China and Japan is the proportion of issues of non-financial corporations on the corporate bond market. Since the financial crisis non-financial companies have accounted for about 60% of all corporate bonds issues in the US but only around 30% in Europe while the proportion rises on average to 50% in Japan and 55% in China. In Italy, the ratio of non-financial company proceeds over total proceeds has been below the European average and only since 2014 has recorded increasing values mainly due to reduction of the overall financial company proceeds. However, in 2018 as a result of the decrease in non-financial company issuances, the ratio declined to 35%. Since 2013 the Italian corporate bond market, albeit dominated by financial corporations and large non-financial corporations, has given to SMEs the opportunity to raise capital through the issue of minibonds, a more in-depth analysis of this phenomenon is conducted in the next chapter.

2.3.2 Securitized debt

Securitized debt is based on the securitization process, the procedure where an issuer designs a marketable financial instrument by merging or pooling various financial assets into one group. Once the new instrument is created, it is sold to investors who acquire rights to receive cash collected from the financial instrument that underlie the security. The most suitable tools for this process are residential mortgages, commercial mortgages, auto loans, credit card debt obligations and all other non-debt assets generating receivables. Securities backed by mortgage receivables are called mortgage-backed securities (MBS), while those backed by other types of receivables are asset-backed securities (ABS). The central role of the issuing process is covered by the Special Purpose Vehicle, (SPV), a legal entity specifically created to buy companies' assets and pooling them together to create tradable securities. Once the assets are transferred to the SPV, they are completely removed from the company's (called originator) balance sheet and the SPV pays interests and capital on ABS with the cash flows originally coming from obligors. The process allows to turn illiquid assets into liquid ones, freeing up capital for the originator and providing income for investors, moreover securitized debts allow banks to strengthen their capacity to supply new loans and to reduce their risk exposure given that they get rid of credit risk. Empirical evidence has demonstrated that an adequate securitization market in Europe can produce tangible benefits to SMEs. First of all, an increase in securitization issuance reduces the probability of SMEs to face credit constraints but at the same time decreases the cost of bank financing for non-constrained firms (Kaya and Masetti, 2018).

The securitization market in Europe recorded consistent growth until the financial crisis in which it had almost equaled the US market in terms of annual emissions, but since the 2008 turmoil it has returned to values similar to 2003. 2018 recorded € 269.4 billion of new issues, the leading country

was the UK with 22% of market share, followed by Netherlands (11%) and France (7%). The overall issued volume of SME deals in 2018 accounted for € 29.4 billion (11% of total European issuing), growing strongly compared to the previous year which was worth just € 14.9 billion. In terms of geographical distribution, three countries accounted for 89% of SME securitization issues: Belgium with € 9.4 billion, Italy with € 8.5 billion and Spain with € 7.8 billion. However, it's important to mention how SME securitization market has shifted since the crisis from a system where most transactions took place on primary market to a purely retained / ECB repo-driven market with almost no placement on the primary market (EIF, 2019). In terms of outstanding volumes, the total outstanding securitization transactions are on a downward trend. From 2009 to 2018 was recorded a 55% reduction while focusing just on SMEs activities, the volume decreased by 51% from € 168 billion in 2009 to € 82.5 billion in 2018.

2.3.3 Covered bonds

Covered bonds are debt securities issued by financial institutions and backed by a separate group of assets. Assets are generally bank loans or mortgages that provide stable cash flows overtime. They are considered safer than other securitized instruments because the underlying loans of a covered bond remain on the balance sheet of the issuer therefore if the institution becomes insolvent, bondholders may still receive their scheduled interest payments as well as the principal at the bond's maturity. Issuing covered bonds allows financial institutions to buy and sell assets to improve credit quality. Compared to the securitization market, the covered bonds market in Europe has managed to mitigate the crises of the last few years by not registering particular variations and by continuing to play a pivotal role in both the financial system itself as well as the real economy. Thanks also to the program launched by the ECB regarding the purchase of Corporate bonds (CBPP), the outstanding volume at the end of 2018 reached the value of € 2.6 trillion proving its strategic importance for European capital markets (ECBC, 2019).

2.3.4 Venture debt

Venture debt is a type of debt financing aimed at companies in their early life stages to fund working capital or capital expenses as equipment purchasing. This class of debt financing is employed as a complementary method to equity venture financing and can be provided by both specialized banks and non-bank lenders. It is chosen as debt instrument to replace bank debt for growing companies that are not qualified yet to receive support through the traditional banking channel. Like other investors who intervene in the early financing rounds, the expected return from the Venture debt providers is high, generally between 15% and 25% to compensate for the investment risk. The return

on their capital is achieved through a combination of loan interest and capital returns indeed, Venture debt providers combine their loans with warrants, or rights to acquire equity with the aim of making a capital gain after an IPO or a trade sale operation.

Venture debt interventions are used to compensate for shortage of working capital as well for capital needs for M&A operations. Funds providers can intervene to finance the purchase of machinery or equipment and can undertake factoring operations. The majority of venture debt instruments involve interest payments based on the referring rate of the country where the debt is granted (Prime rate for US, EURIBOR for Europe and LIBOR for UK) plus a premium according to the type of the investment the loan is backing. Compared to the US market, the European venture financing market, including venture capital and venture debt operations, is less developed both in absolute terms and in relation to the GDP. In 2018, annual venture financing in the US amounted to € 90 billion while it was only € 21 billion in Europe, and the portion of venture debt accounted only for 5% compared to 15% in the US. In Europe, 57% of annual investments derives from the European Investment Bank (EIB) which, with € 600 million per year of venture debt financing, represents the largest supporter of innovative companies operating in the life science, robotics or artificial intelligence sectors. The EIB investments are expected to generate more than 25,500 high-quality jobs as well as € 16 billion in additional investments in R&D on European territory (EIB, 2019).

2.3.5 Private placement

Private placements (PP) transactions are a funding rounds of securities which are sold not through a public offering, but rather through a private offering, mostly to a restricted number of selected investors. Securities are usually intended for institutional investors such as banks, intermediaries, insurance companies, mutual funds and private investors. This placement mechanism concerns operations of limited size and is generally employed by unlisted companies for capital increases and fundraising through debt securities such as loans or bonds. The issuer directly agrees with the selected circle of investors the technical characteristics of the operation as the volume in place and the ask price. Private placement is often the first step for subsequent access to regulated financial markets as issuers have the opportunity to establish relationships with investors and understand how the capital market reacts.

The main advantages in adopting this instrument are first of all a greater speed of execution of the fundraising thanks to the standardization of many operations (about 6-8 weeks for the first transaction) but also the opportunity to have a form of long-term financing fixed interest term in addition to bank credit. Moreover, the issuer can exercise greater control over the entire process given

that he can directly choose the investors to place his securities at. The risks faced by investors depend on the fact that the issuers are often still in the start-up phase (therefore at high risk) and the unlisted securities are considered illiquid for any future transactions.

The major benefit of undertaking a PP process for SMEs is the diversification of their funding away from bank lending channel through privately placed bonds given that they do not secure formal credit ratings required for publicly traded debt issuance (Wehinger and Nassr, 2015). The three markets of greatest global interest are the US Private Placement (US-PP) market which is available even for foreign companies, the *Schuldschein* market in Germany and the Euro Private Placement (Euro-PP) in France. A comparison of the markets' main features reveals notable differences in terms of instruments placed, maturity, target company size and class of investors. The US-PP market is the largest and most established one and compared to European PP landscape, US deals typically present longer maturities and are even larger in size (OECD, 2020). The American market trades mainly bonds, the German market instead deals with transactions in the form of loans while the Euro-PP market deals with both securities.

2.3.6 Crowdfunding

Crowdfunding can be defined as a fundraising activity mainly via internet that occurs in the form of donations, in exchange for the future product or in some form of reward and / or voting rights. The term is inspired by crowdsourcing, a business model in which a company or an institution entrusts the design, implementation, development of a project, or an idea to an indefinite set of people not previously organized. The model permits to receive information outside the company and leverage on a number of creative people and ideas that the company could not develop internally. The agent enabling the dissemination of this business model is the web which made it possible to drastically reduce information sharing problems and provided for specific portals that make this open call mechanism possible. Crowdsourcing is emerging as the new online distributed problem-solving model in which networked people collaborate to complete a particular task; it gives companies looking for opinions and ideas for projects the opportunity to access scalable workforce online (Vukovic, 2009). Crowdfunding was initially designed to raise funds following natural disasters or in support of non-profit organizations, afterward it became a means of financing individual projects and companies that are struggling to receive funds from institutional investors. This form of microcredit has made it possible to overcome traditional funding channels managed by professional investors such as banks, private equity funds and venture capital and even business angels. Companies display their projects in showcases on specialized websites and, even with small individual donations, retail lenders can contribute to the achievement of the goal set by the company. The platforms present the main

characteristics of the projects and the target to be reached, as well as the methods of donation and any rewards for the lenders. The other advantage that occurs is given by the marketing action given that users (who represent potential buyers) can express approval or criticism feedback on the project before the actual commercialization. The growing success over the past 15 years is due to the significant progress made by electronic payment systems that have managed to cut transactional costs through the development of digital payments with credit cards and smart payment systems.

The call may be launched in two different ways, it can be launched directly on the company website or it can rely on a specialized crowdfunding platform (CFP) that charge a percentage fee on the amount collected (typically between 4% and 7%). These platforms facilitate the meeting between the demand for funding by those who promote projects and the offer of resources by users. Moreover, it can be specialized in projects regarding particular sectors as digital projects, green project or social initiatives.

Even the capital raised can rely different models, there are three main schemes that follow most of the projects financed:

- "*All or nothing basis*" in which if the target threshold is not reached within a time window, the company reimburses to all supporters of the project;
- "*Take it all basis*" through which the project starts even if it has not reached the desired threshold;
- "*Minimum / maximum amount*" in which a minimum and a maximum threshold is set, if the minimum threshold is reached the project can start and if the maximum threshold is exceeded the development times can be accelerated.

Empirical evidence has shown that a fundraising model based on the "*all or nothing*" scheme forces entrepreneur to bear greater risk and encourages contributors to pledge more capital enabling entrepreneurs to set larger goals. Furthermore, this scheme is considered a costly signal of commitment for entrepreneurs yielding a separate equilibrium with higher quality projects having greater success rates (Cumming, Leboeuf and Schwienbacher, 2019).

There are different crowdfunding models available in relation to the project to be financed and the type of company that undertakes fundraising. Furthermore, not all of these models have been regulated, therefore in some countries crowdfunding platforms use just specific schemes approved by the regulation.

A first form of collective funding is donation crowdfunding in which funders donate resources without expecting any tangible benefit in return. Projects are aimed at arousing emotions in users who support the initiative while knowing that they will receive neither an economic nor a tangible benefit. This model is particularly used by non-profit organizations and those engaged in social activities that organize charity and humanitarian aid campaigns (it is rarely used for entrepreneurial projects).

Different is reward based crowdfunding, in which campaign supporters receive a reward in relation to the amount of money donated. Sometimes lenders are rewarded with the product itself and in this case the collection takes the form of a real pre-sale (pre-selling crowdfunding) not very different from an e-commerce operation. However, the transaction takes place in the absence of a contract with commercial value, therefore it is up to the contributor to trust the promises offered by the company. Reward based crowdfunding is often used by start-ups in their early stages of life when they still struggle to receive resources from banking institutions due to their lack of credit records. In Italy both reward-based crowdfunding and donation crowdfunding record increasing volumes year on year, the 2019 Starteed report "*Crowdfunding in Italy*" shows that only in 2019 the collection volumes of the two models increased by € 16 million, going from a cumulative value of 2018 of € 57.77 million to € 73.77 million in 2019.

The volume of transactions has grown by 28% mainly thanks to the strengthening of experiences of community engagement and open innovation and corporate social responsibility initiatives.

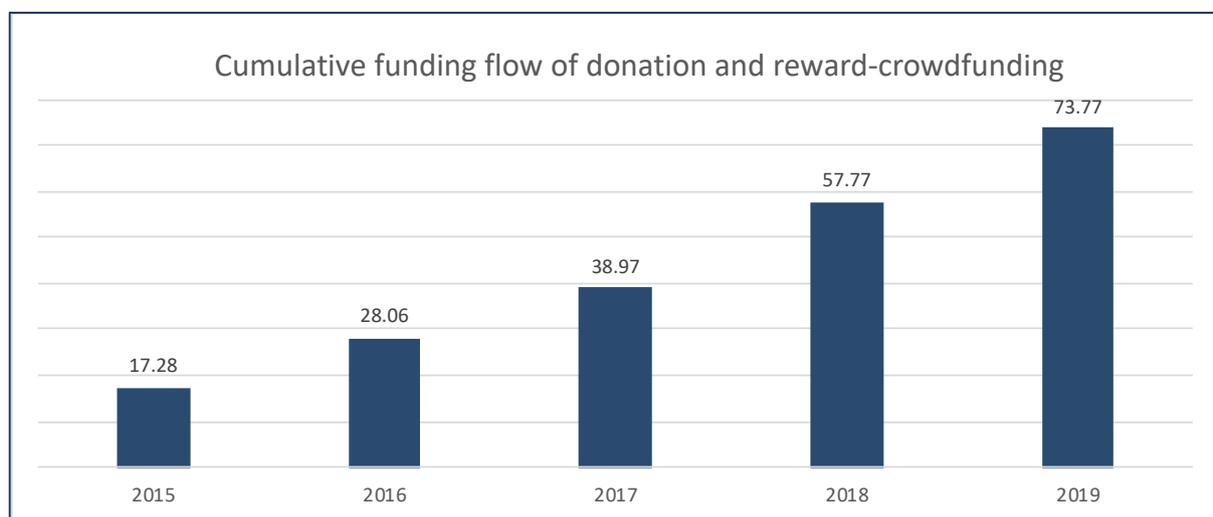


Figure 15: Cumulative funding flow of donation and reward crowdfunding (€ million). Source: Starteed

Data comes from an analysis of 51 platforms, 29 of them were active⁷ in 2019, 6 were inactive while 16 were closed. The three platforms that recorded the largest collection were Eppela with € 16.18 million, Musicraiser with € 5.34 million and DonaconTIM with € 4.56 million, these three represent

⁷ Active: platforms that are online and that have at least one project that has funds in 2019; Inactive: platforms that are still online but that in 2019 have not launched new campaigns; Closed: platforms that are no longer accessible online

more than a third of the entire donation and reward crowdfunding market in Italy. Another used model is royalty-based crowdfunding in which supporters receive a monetary-related reward that consists in sharing profits or revenues associated with the investment, but without any claim on ownership of the project or capital repayment.

In situations where the financing of the project is made in the form of investment, reference is made to crowdfunding. Crowdfunding is associated with a remuneration that can take the form of equity investments or can be similar to loan. In both cases, the campaign must be carried out according to criteria defined by laws and by supervisory authorities.

Equity-crowdfunding is defined by Consob as "*an online investment through which investors buy a portion of ownership of the company, in which case, the reward for the financing is represented by the set of equity rights deriving from participation in the enterprise*".

Equity crowdfunding was introduced in Italy by Legislative Decree 179/2012 (*Decreto Sviluppo-bis*) which regulated the collection of venture startups (up to € 8 million) of innovative startups through crowdfunding in the Italian territory. Subsequently, in 2013 Consob defined the operating procedures including the integrity and professional requirements of managers of the authorized portals, the information to be provided to potential investors and the obligation to reserve 5% of the shares issued through fundraising to institutional investors. In addition, it imposed the obligation to guarantee the investor a way-out in the event that the control of the company is transferred to third parties and the right to revoke the subscription order (to be exercised within 7 days) in the event of modifications that occurred during the collection period. In the following years, additional changes were made to the regulation, among the main reforms, the Legislative Decree 3/2015 (*Decreto Investimenti Compact*) has extended the opportunity to raise funds to innovative SMEs, to collective investment saving organizations and to capital companies that invest mainly in innovative startups and innovative SMEs. In 2016, Consob published a new document in which the part subscribed by serial investors (for example business angels) or natural persons with experience of directors in startups or innovative SMEs was also eligible in the 5% calculation reserved for professional investors. In 2018 with Resolution n. 20264 of 17/1/2018 additional forms of protection for investors have been introduced and the threshold of professional investors has been lowered to 3%. Finally, the 2019 budget law introduced additional tax breaks for equity crowdfunding investments.

Thanks to the 2019 bond funding regulation regarding crowdfunding portals for retail customers, 22 new equity crowdfunding platforms approached the market in Italy bringing the total to 38 platforms.

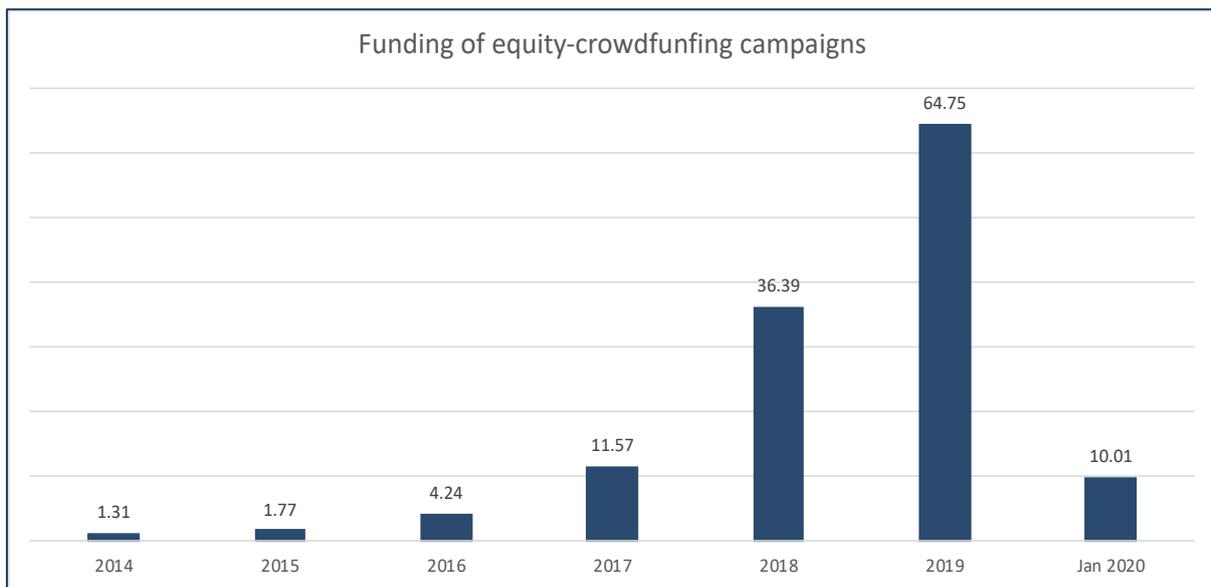


Figure 16: Annual funding of equity crowdfunding campaigns in Italy (€ million). Source: Osservatorio Politecnico di Milano

The data in *figure 16* collected by the crowdfundering observatory of Politecnico di Milano show how 2019 recorded a new record relating to equity crowdfunding in Italy on authorized portals. In 2019 alone € 64.75 million were raised, an increase of 88% compared to 2018, moreover, 138 fundraising campaigns were successfully closed while 45 did not reach the set objectives. Considering also the latest available data showing equity crowdfunding operations in January 2020, the total funding recorded in the last 6 years on authorized portals equal € 130 million of which 75% collected only in the last two years. Since 2014, 520 offers have been published on authorized portals, 72.5% has successfully completed the collection while 27.5% has not reached the threshold (another 37 campaigns are still in the collection phase). Data show how the phenomenon of equity crowdfunding in Italy is growing rapidly and a growing number of companies struggling to receive financing through the banking channel and forms of private equity are resorting to this innovative opportunity. In particular, the offers were promoted by 356 innovative startups, 109 SMEs (of which 52 innovative SMEs) and 14 investment vehicles.

Another form of crowdfundering is represented by lending crowdfunding (also called Peer-to-Peer Lending), for which natural and legal persons can decide to lend funds to each other through online platforms, in order to complete a project. The lenders lend sums of money to those who have started a fundraising campaign in exchange for interest and the repayment of capital according to the terms established in the contract.

The birth of Peer to peer lending in Italy is identified with the Legislative Decree 11/2010, implementing the European Directive 2007/64/EC (Payment Service Directive) through which Bank of

Italy establishes lending crowdfunding platforms as "*Payment Institutions*". An important step forward was made in 2016 with Resolution 584/2016, it outlines the regulatory context of lending crowdfunding both from the point of view of the platform and from those who raise funds. The activity of the portal manager can be authorized if it can be classified as a payment service, while from the point of view of the borrower, the collection is authorized when borrowers and lenders are able to influence the contractual clauses by asserting their negotiating power. The following year with the 2017 Budget Law (Law 205/2017), tax breaks were introduced for fund lenders by imposing the 26% rate on investment profits in "*social lending*" obtained by natural persons. In addition, lending crowdfunding has entered the list of eligible portfolio investments as regards PIR instruments.

There are two business models of peer to peer lending differing in the role that the platform plays in the allocation of funds provided by investors. In the indirect model, the platform takes an active role in allocating funds to applicants, lenders make a certain amount of money available to the platform and the latter allocates resources to applicants in relation to the client's investment preferences (risk appetite, expected interest rate). In the direct model, the investors themselves decide who to allocate their savings to through an assessment based on the data provided by the platform.

At 30 June 2019 there were 13 platforms in Italy reserved for lending crowdfunding, 6 for the consumer segment and 7 for the business segment. The flow of loans disbursed by consumer platforms amounted to € 279.3 million of which € 122.5 million in the last 12 months, an increase of 40% compared to the previous 12 months. In the business sector, contributions paid in June 2019 were € 156.3 million, of which € 84.2 million in the previous 12 months alone, an increase of 48% compared to the previous period. Of the 7 companies that deal with the business sector, 3 are specialized in real estate and have recorded a cumulative collection of € 7.12 million, of which 60% in the last year.

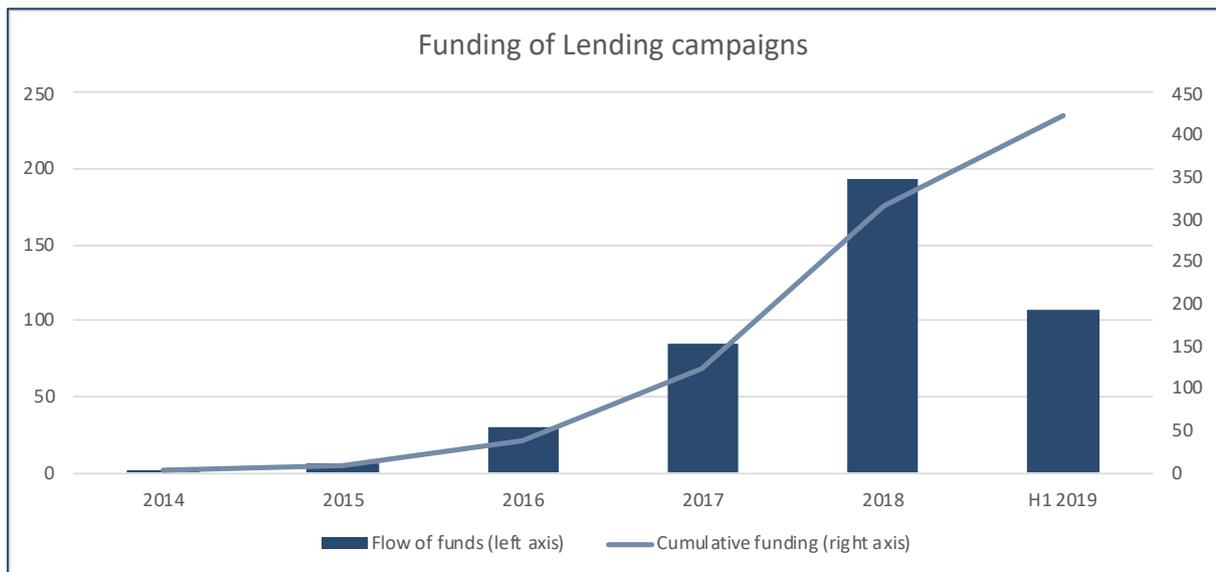


Figure 17: Funding of lending crowdfunding campaigns in Italy (€ million on both axis). Source: Politecnico di Milano, 2019

Lending crowdfunding is proposed as fintech alternative to some situations of requesting funds from families and small businesses. Although the scenario where it represents a real threat to the profitability and operation of the banking system is unlikely, lending crowdfunding more realistically can stimulate traditional intermediaries to review their business models by increasing the quality of the offer for their customers (Bofondi, 2017).

The crowdfunding platforms offer each single campaign a limited space in which the entrepreneur must elaborate his project and make it attractive to receive the necessary funds. To maximize their chances of reaching the threshold, funders must both provide informative texts and present related pictures as well as videos. In addition, frequent update of their project information during the funding period, for instance by considering questions asked by the backers, is essential to make the story interesting and to convey the passion of the funders. (Koch and Siering, 2015). There are also products or services that are more suitable for this type of financing. Successfully completed projects demonstrated that there are determinants that can maximize results. A fundamental factor regards early contributions as receiving a fair amount of funds in the first days of collection often indicates that the campaign will be successful. It is always suggested to do a pre-marketing just before the campaign kickoff to inform potential investors especially through social networks or platforms that follow up the campaign during its lifetime. Furthermore, the use of hot keywords (as artificial intelligence, fintech, blockchain, green energy etc.) in certain periods can increase the probability of success as the popularity of those topics is exploited. A recent study (Forbes and Schaefer, 2017) highlights that project creators should set the lowest possible funding goal for their campaigns, as participants are drawn to projects with a higher percentage funded compared to higher amounts funded and that entrepreneurs should reduce the profit margin on popular reward options to encourage more backers.

Crowdfunding has become a globally recognized method of financing in recent years and more and more nations are emanating specific regulations to address and support the use of the platforms. The data provided by Cambridge Center for Alternative Finance on crowdfunding show the recent situation of collection through crowdfunding platforms in Europe. The total volume collected in 2017 amounted to € 7.8 billion, an increase of 20% compared to the volume collected the previous year. Lending is confirmed as the most successful business model, employing € 5.28 billion considering the contribution of both business and consumer platforms. The latter recorded deposits for € 2.73 billion, surpassing in volume the business platforms which until 2016 represented 34% of the entire market with flow of funds of € 2.22 billion (compared to € 2.55 billion in 2017). The lending real estate registered a slight contraction compared to the year before, going from € 1.58 billion to € 1.42 billion while equity real estate more than doubled the assets raised jumping from € 201 million to € 493 million. Finally, equity crowdfunding maintained similar value of 2016, exceeding € 581 million. Regarding the geographical distribution of investments, UK accounts for 62% of the European market in 2017 equal to € 4.83 billion, accounting for a significant portion of lending crowdfunding with € 3.08 billion raised. The other countries at the top of the ranking are Germany and France (albeit detached from the UK) with an annual collection of € 543 million and € 496 million respectively.

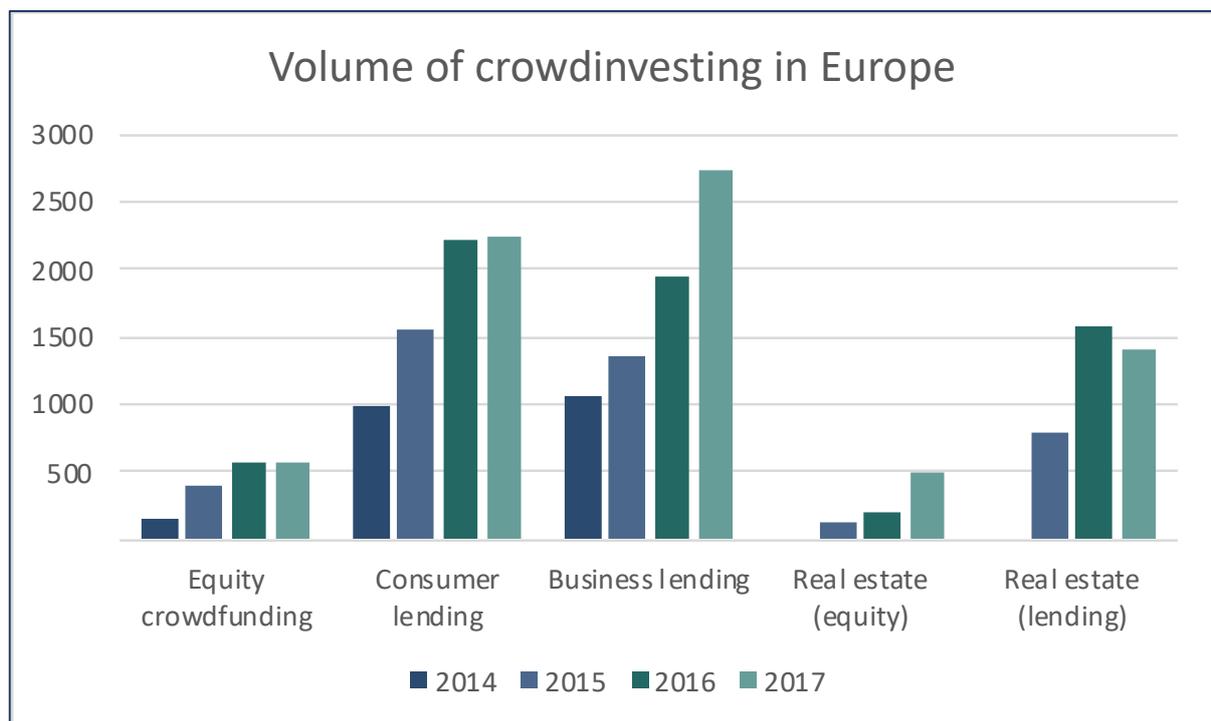


Figure 18: Volume of crowdfunding in Europe between 2014 and 2017 (€ million). Source: Cambridge Center of Alternative Finance

Globally, the crowdfunding market is constantly growing and evolving. The situation in recent years has radically changed, leading to balance shifts in the sector's international market. Statistics collected by Massolution that the market size in 2014 amounted to USD 16.2 billion, an increase of 167%

compared to the previous year thanks also to the new platforms that have approached the market. The largest market was in North America where USD 9.4 billion was collected in 2014, accounting for 58.3% of the total capital raised worldwide. The Asian market contributed 21% in 2014, equal to USD 3.4 billion and recorded a growth of 320% compared to the previous year. At the basis of this growth is the contribution of China which entered the market only in 2013 but managed to grow exponentially up to surpass the United States in terms of volume in 2017.

Recent statistics⁸ shows a total worldwide crowdfunding market in 2017 of USD 416.67 billion up from USD 288.99 billion in 2016 with a growth rate of 44.2%⁹. The 86% of the entire global market comes from China which also accounted for 99% of the crowdfunding volume in 2017 in the Asia-Pacific region with USD 358.3 billion (especially thanks to large volumes in peer-to-peer consumer and business lending). The United States ranks second in terms of volume with a worldwide market share of 10.27% and a funding volume of USD 42.8 billion. If China dominates the market in Asia, the United States dominates the market in North America where they account for 96.5% of the sector. Finally, third place is the United Kingdom with 1.88% of global market share and a funding volume of USD 7.85 billion with one of the most well-established markets of crowdfunding in the world. Next on the list, we find countries as Australia, South Korea, Canada, France, Germany, Japan, and the Netherlands, all with a significantly smaller market share than the leading three countries.

2.4 Hybrid instruments

Hybrid instruments are forms of financing that present characteristics of both debt instruments and equity instruments with the aim of offering a combination of advantages deriving from both categories. Equity instruments bring a sense of ownership to the holder as well as a residual claim over the cash flows while the debt instruments are issued to raise capital in the firm that could be used during the growth phase. By investing in hybrid instruments, investors take a higher risk than the traditional debt securities therefore expect to receive higher returns. However, in the event of insolvency they have priority in terms of payment over pure equity instruments as shares.

2.4.1 Subordinated debt

Subordinated debt is an average risk / return instrument and consists of an unsecured debt security (loan or bond) subordinated to other debt securities. They are considered junior securities because

⁸ Data from Cambridge Center for Alternative Finance

⁹ Which includes financing models as P2P consumer lending and P2P business lending, real estate crowdfunding, invoice trading, balance sheet lending, equity-based crowdfunding, reward-based crowdfunding, donation-based crowdfunding, and more

they receive payment only after senior debt securities when bankruptcy occurs. They are riskier instruments than unsubordinated debt and are classified in the balance sheet as long term instrument right after unsubordinated debt. Given that subordinated debts have lower priority, they are riskier for the lender, therefore the junior securities typically have a lower credit rating, and a higher yield compared to senior debt. In Italy, the issuing of subordinated bonds to retail customers has been on the spotlight since 2013 following the bankruptcy of 4 Italian banking institutions¹⁰ and the entry into force of the bail-in, for of which 150,000 savers lost a total of € 430 million (Grassia, 2019). The accusation addressed to the banks concerned violations of the obligations of information, diligence, correctness, objective good faith and transparency (envisaged by the Consolidated Law on Finance) which led savers to purchase subordinated bank bonds in a precarious financial situation without being fully aware of the risks they were bearing.

Since August 2019, a Savings Compensation Fund worth € 1.5 billion has been available through the Budget Law reserved for those who have been damaged by Italian banks (and their subsidiaries) put into liquidation from November 16th, 2015 to January 1st, 2018 (Razzante and Aquaro, 2019). The beneficiaries of the fund are natural persons, individual entrepreneurs (including farmers or direct farmers), micro-enterprises, voluntary organizations and social promotion associations that have purchased shares and subordinated bonds issued by 11 banking institutions.

2.4.2 Silent participation

With this tool an individual called silent partner participates in the business of a company by providing a capital deposit and in return receive a participation in the profits. The partner is called "*silent*" because his participation is usually not disclosed outside the company (except for the stock corporations for which it must be communicated). The partner's liabilities are limited to the invested capital, moreover it can intervene in the company's decision-making processes and provide consultancy and mediation services between the various shareholders of the company in case of necessity.

2.4.3 Participating loans

Participating loan is a particular type of loan through which the lender receives a participation in profits (profit participating right) or turnover (turnover participating right) of the company in return for the provision of capital. The return of the lender is linked to the performance of the borrower in terms of turnover, profit and also the value of the shares, however a fixed interest rate can be included in the contract. Although in a profit participating rights operation, the remuneration is linked to the

¹⁰ Banca Etruria, Banca Marche, CariFerrara and CariChieti

profits of the company, lenders do not become owners of the borrower company as they do not hold shares, therefore they have neither voting rights nor can participate in the meetings of the shareholders. However, they are not subordinated by other creditors therefore in case of liquidation they have the same priority as other loan providers.

2.4.4 Convertible bonds

Convertible bond is a fixed-income debt security with a specific maturity and predetermined repayment terms which gives the bondholder the right to convert his instrument into a specified number of shares of the issuing company (or other securities) at a predetermined price. The number of shares in which it is possible to convert the instrument is set by a conversion ratio and it is possible to exercise the right at specific periods during the bond's life. Of course, the bondholder hopes for an increase in the company's share value as it will convert the instrument only if the market value of the shares is *sufficiently* large. Ideally, the bondholder converts his instrument into shares only if the profit obtained from the sale of the new shares exceeds the face value of the bond plus the remaining interest payments.

2.4.5 Bonds with warrants

Warrants attached to bonds gives the right but not the obligation to the owner to buy financial securities (usually bonds or shares) of the company which issued it at a fixed price (strike price) during a certain period.

Each warrant allows the owner to buy a preset number of financial securities, warrants are usually sold in correspondence to the issue of other financial securities (capital increase) but they can even be distributed for free. They are similar in some respects to call options because they both give the holder the right to purchase a certain number of shares however, warrants are issued directly by the company itself and not by financial intermediaries. Furthermore, in the event that the owner decides to exercise the warrant, the number of outstanding shares increases, and the issuer registers a cash inflow equal to the strike price times the number of exercised warrants (unlike the exercise of convertible bonds that does not imply a cash inflow for the firm). Finally, although issued in pairs with bonds, warrants can be detached from the debt instrument and circulate as an independent tradable instrument.

2.4.6 Mezzanine finance

As the name suggests, mezzanine finance is a tool that combines several different instruments and is conceived as intermediate mean between traditional loans and risk capital. The assets that make up this hybrid instrument are chosen in relation to the needs of the company and investors.

In the case of simple mezzanine finance it is possible to identify two distinct components, subordinated debt, generally disbursed in the form of a loan, characterized by a fixed interest rate or indexed to a market parameter (issued through private placement); and the so-called "*equity kicker*", which allows the investor to benefit from any appreciation of the market value of the venture capital of the target company. This instrument can take the form of a private investment partnership that only a small number of investors can access (usually called commercial mezzanine investment). The investment is managed by professionals in management of mezzanine investments who research and monitor companies to approve the loan in exchange for fees and a share of profits. For the investor, mezzanine financing represents a portfolio diversification, while the company benefits from the stability of the resources borrowed as the mezzanine fund has an average validity that varies between 7 and 10 years (investors are expected not to exit until the end). Mezzanine investments are generally not liquid as they are not traded on the markets but remain in the portfolio of investors until their maturity.

Finally, to compensate for the lower ranking and unsecured mezzanine capital, investors require periodical detailed information disclosure on the economic situation of target companies that must commit to adopt adequate accounting and information policies standards (OECD, 2015).

2.5 Equity instruments

2.5.1 Private Equity

The term private equity encompasses a several financial operations through which an institutional investor takes over ownership in a company, both by acquiring existing shares from third parties and by subscribing newly issued shares bringing capital into the target company. Private equity investors such as institutions, investment funds or even wealthy individuals provide capital to private companies, enterprises whose shares are not freely tradable in public markets. This type of operations are essential to support project both in first financing round as startup or seed stage and for companies that need a capital consolidation to accelerate their growth. The use of risk capital is recommended in early stages due to difficulty encountered in receiving bank loans as well as the problems of information asymmetry, lack of assets and poor track record. Financial institutions (operating as risk adverse agents) require necessary information to price their lending services to the

borrower and must be sure that their debt will be repaid. Because there is asymmetry of information, banks cannot adjust the price of their supply to the quality of the demand (Deffain and Sudolska, 2014). The so-called "Equity gap" explored by Entrepreneurial finance literature is filled by several actors who provide venture capital to start-ups in situations where other forms of financing cannot be obtained. Over the years the various actors have specialized in providing funds in well-defined life stages of the target companies associated with a certain level of risk.

The framework of *figure 19* shows how during the seed phase, the projects are usually either self-financed by the entrepreneurs themselves or supported by funds raised by friends and family. Subsequently, in addition to business angels' contribution crowdfunding models are adopted to start the production of the product. Venture Capital funds prefer later stages of the new venture development, characterized by higher capital requirement but also by lower risk. Finally, once the business starts to register stable revenue and is ready to expand its operations and to offer shareholders and VCs an exit possibility, the initial public offering is taken into consideration.

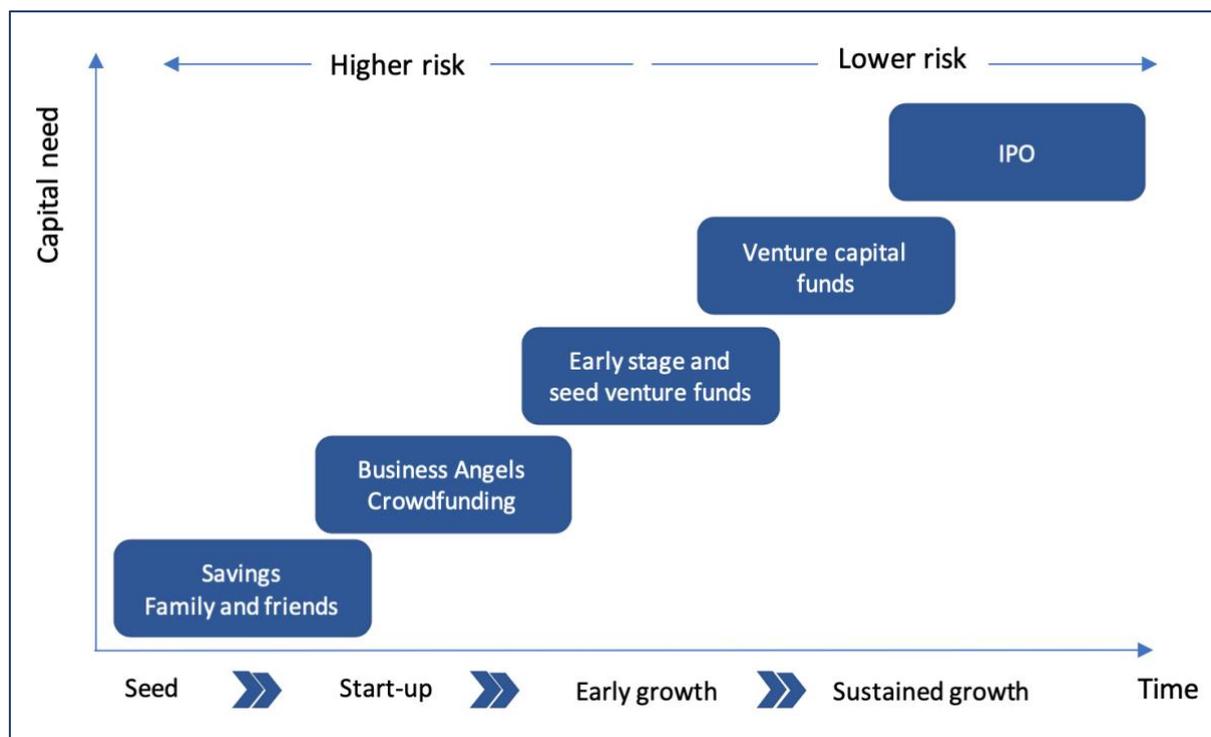


Figure 19: The chain of financing. Source: Deffain and Sudolska, 2014

Private equity operations generally bear high risk for investors as they provide capital injections without provision of security, becoming shareholders of the company. For this reason, they expect high returns from their contribution which can be achieved through various exit alternatives, first of all the company's IPO. Their investment presents an average holding period between 3 and 5 years, at the end they aspire to achieve a significant capital gain through the growth of the company's value.

To better define the perimeter of analysis, it is necessary to mention that co-exist two different definitions private equity investments sphere. The European definition distinguishes venture capital from private equity activities, the first deals exclusively with financing operations conduct in the start-up phase of the company while the second refers to all operations carried out on phases of the life cycle of companies subsequent to the start-up one. The US meaning instead considers venture capital operations as a subgroup of all private equity operations, which are therefore divided into VC operations (early stage operations) and other PEs operations such as growth capital and buyouts. Each stage of a company's life cycle takes on different characteristics in terms of size, objectives and needs. Consequently, the contributions and forms of support of institutional investors also differ in terms of funding and skills in relation to the situation of the target companies. All this has led to a sectorial specialization of financial operators in relation to the investments made (Gervasoni and Sattin, 2000).

Private equity operations can be distinguished in the seed and start-up phase of a company. The first are operations aimed at supporting the idea of a product or service both economically and through specific skills; at this stage there is usually no business plan but only an idea with strong potential. Typically, the risk and uncertainty of the outcome in these circumstances is still very high.

Follows the start-up phase, in which the product or service has already been conceived, designed and tested so it is ready to be launched on the market. The contribution of economic resources that the entrepreneur needs to start the production and marketing phase takes over investors' technical and scientific skills.

Subsequently, expansion financing interventions were recorded involving established and mature companies that need capital to consolidate their development, face competitive pressure, increase production, undertake an internationalization process or M&A operations. The activities in this phase present lower risk compared to the previous ones and are usually carried out through the subscription of capital increases or convertible bonds.

Generally during the expansion phase (as well as in the maturity phase) replacement operations are carried out. They consist in operations occurring in the event of replacement of minority shareholders who are no longer interested in joining the company for several reasons. Some shareholders are only interested in the financial aspect and decide to liquidate their position to obtain profit, other cases instead are related to conflicts with the majority shareholders or to generational changes within families. In these situations, the intervention of the PE investors guarantees the business functioning

and the continuity of the shareholding as they replace the outgoing partners avoiding modifications of strategies and slowdowns in corporate growth.

A more incisive operation that takes place during maturity phases of a company concerning radical changes in ownership is represented by buy-outs. They are reorganization activities in which the private equity investor acts as financial support for the new managerial group that intends to obtain the control. This can happen through the acquisition of ownership by managers outside the company (*management buy-in, MBI*) or by managers within the company (*management buyout, MBO*). Sometimes buyout operation is carried out with the use of debt, this is defined as leveraged buyouts (*LBO*). That's the case where a substantial part of the capital necessary to acquire the control is collected through debt, to be repaid with future cash flows that are expected to be generated by the target company. Finally, in situations of decline, turnaround operations are carried out to apply radical changes in corporate strategies to make the business profitable again.

The only goal of the companies that deal with private equity is to create a profit when leaving the business. The divestment operations are different both in terms of strategies and benefits, they are discussed in the negotiation phase but also depend on the business evolution, the characteristics of the company and the relationship with other shareholders. However, other elements need to be considered as exit timing, whether or not to maintain a partial position in the company based on post-exit performance and the impact that the exit strategy can have on immediate business and investors (Cumming and Johan, 2009).

A widely used exit strategy is represented by the trade sale that consists in selling the participation to an industrial partner, or in the merger with other companies. Usually the ownership is transferred to a company active in the target company's business and therefore can gain a competitive advantage from the acquisition (sometimes a premium is paid for this reason). For the PE sponsor this alternative is particularly cheap and fast compared to others and has the advantage of generating immediate liquidity.

A more consuming exit strategy in terms of costs and resources is represented by IPO whereby the company offers its securities for sale to the general public. Initial public offering may represent the highest return for PE sponsors depending on market conditions, but transaction costs are usually high and the process is long and unpredictable. In addition, lock up clauses may exist that lengthen the

time to leave the company. This type of strategy suits better for companies that already have a certain level of maturity and a certain visibility on the market in order to attract institutional investors.

A third strategy consists of secondary buyout, the process by which the company is sold by one PE sponsor to another PE sponsor. The process allows to have a quick disinvestment for sponsors who are no longer interested in the target enterprise, but it is still not ready for trade sale or an IPO. This clause is often contractually defined from the beginning of the investment process and can be activated at the discretion of the investor or by the entrepreneur who may be interested in regaining control of the company or simply wants to change PE sponsor.

Lastly, leveraged capitalization strategy allows to generate cash for the PE sponsor without actually selling the company. It occurs when the company borrows more money from a bank or issue new bonds and the cash collected is used to redeem shares held by the PE sponsor. However, turns out to be a risky strategy as it incurs the risk of bankruptcy or illiquidity especially for high leveraged companies.

2.5.2 Business angels

In the fundraising of the first stages of a company's life, actors who make a fundamental contribution are the Business Angels (BAs). Business angels (also called "*angel investors*") are private individuals who bring funds to a nascent company, in exchange for the venture capital of the same, becoming shareholder. BAs tend to invest their own money (either individually or in formal or informal syndicates), in businesses which are not publicly traded, commonly in exchange for convertible debt or ownership equity (EIF, 2019). Informal investors are usually high net worth individuals who wish to acquire part of a company operating in an innovative business with high growth potential. The risk they run is high as they invest in the early stages of companies such as pre-seed, seed and startup phase, therefore they expect a high return at the end of their investment. Their importance lies in the fact that they contribute to filling the financing gap between the funds received from families and friends and institutional venture capital funds. VCs tend to invest in ventures at later development stages since they offer shorter exit cycles and lower perceived levels of risk (Sapienza, Manigart and Vermeir, 1996) therefore in some situations, BAs represent the only source of capital for start-ups.

The investment time horizon usually varies from 5 to 7 years, at the end investors totally or partially liquidates their position within the company. Their contribution is not limited to the subscription of risk capital, they are hands-on investors and contribute with their skills, expertise, knowledge, and contacts in the businesses they invest in. They have great business experience, willing to invest and

offer their wealth and knowledge to owners and entrepreneurs to start or develop their businesses (Ramadani, 2009).

It is possible to classify BAs in relation to their investment activities, informal active investors are defined as "*Active angels*", individuals who undertook several investments in the past and in continuous search for new opportunities; "*Latent angels*" are passive investors who have invested in the past, but have not invested in the last three years; finally there are "*Virgin angels*", BAs that have not made their first investment yet. Increasingly BAs decide to co-invest with other early stage investors in order to convey significant contribution to target companies but also to diversify investment risk as well as and / or to improve their skillset and experience (especially for younger BAs that haven't done any investment yet). On average, a single BAs invests € 25,000 per deal, while the average operations carried out by a network stand at € 1,812,000 per deal. The study the sector appears particularly complicated due to dualism between visible and invisible market. The dualism arises from the fact that informal investors often remain anonymous and do not disclose information on investments, many of them have carried out operations in the past but are now no longer looking for opportunities or no longer identify themselves in this category. Finally, there are Virgin BAs which, although they have not yet made investments, are included in the analysis. The visible market plays a lower role compared to the non-visible one, in fact it is estimated that the hidden market is 7 to 10 times greater than the visible one (EBAN, 2019). The European Business Angels Network monitors the informal investor sector in Europe trying to estimate the relative contribution from the invisible market. The size of the visible and invisible business angel market in Europe increased to an estimated € 7.45 billion in 2018, a growth of 2.44% from 2017, consolidating itself as the primary source of external equity for early stage startups (Werth and Böert, 2011). In the European early stage investment market, BAs contribute 60% of investments, followed by early stage VCs with 33% equal to € 4.13 billion while equity crowdfunding plays a more marginal role with 6.3% equal to € 0.78 billion.

In 2018 the number of BAs (both visible and invisible market) is estimated at 345,000, increasing by 2.3% from 2017 while the number of BA networks (BANs) in Europe was 482. From 2003 to 2012 the number of BANs had grown at an average annual rate of 17% however, it began to level off in 2013 which registered a stable growth of 1.5%, a symptom of how the market is consolidating. In Europe the UK is the country with the most developed visible market followed by Germany and Spain. BAs market in UK recorded € 109.4 million in 2018, € 86.6 million in Germany and € 58.7 million in Spain. Only these three countries contribute to a third of the entire visible market in Europe.

Regarding sectors in which the BAs have placed their funds, FinTech and enterprise software sectors take lead with respectively 16% and 15% of all investments made in 2018. In third place there is the

healthcare services / medical devices and equipment sector with 11%, this area receives much more interest in the US where it attracts 23% of BAs' contributions. The Italian panorama recorded in 2018 € 39.7 million invested in only 147 companies for an average of € 270,000 invested per company. Statistics demonstrate the persistence of a gap between the number of target companies and the total investments which confirms the tendency for Business Angels to pool resources and forming a syndicate to increase the overall financial contribution and reduce the risk in case of failure of a single operation (IBAN, 2019). The 71% of the operations were carried out in the startup phase while the 29% in the seed phase; 63% of the investments was destined for companies located in northern Italy, in particular in Lombardy (35%) and Piemonte (12%) while 14% was destined for companies based abroad (especially in the UK). The sector of greatest interest for investments is confirmed to be that of ICT with 46% of the investments, followed by financial services and trade and distribution with 12% each. In fourth place there is the constantly growing healthcare sector which nowadays absorbs 8% of transaction

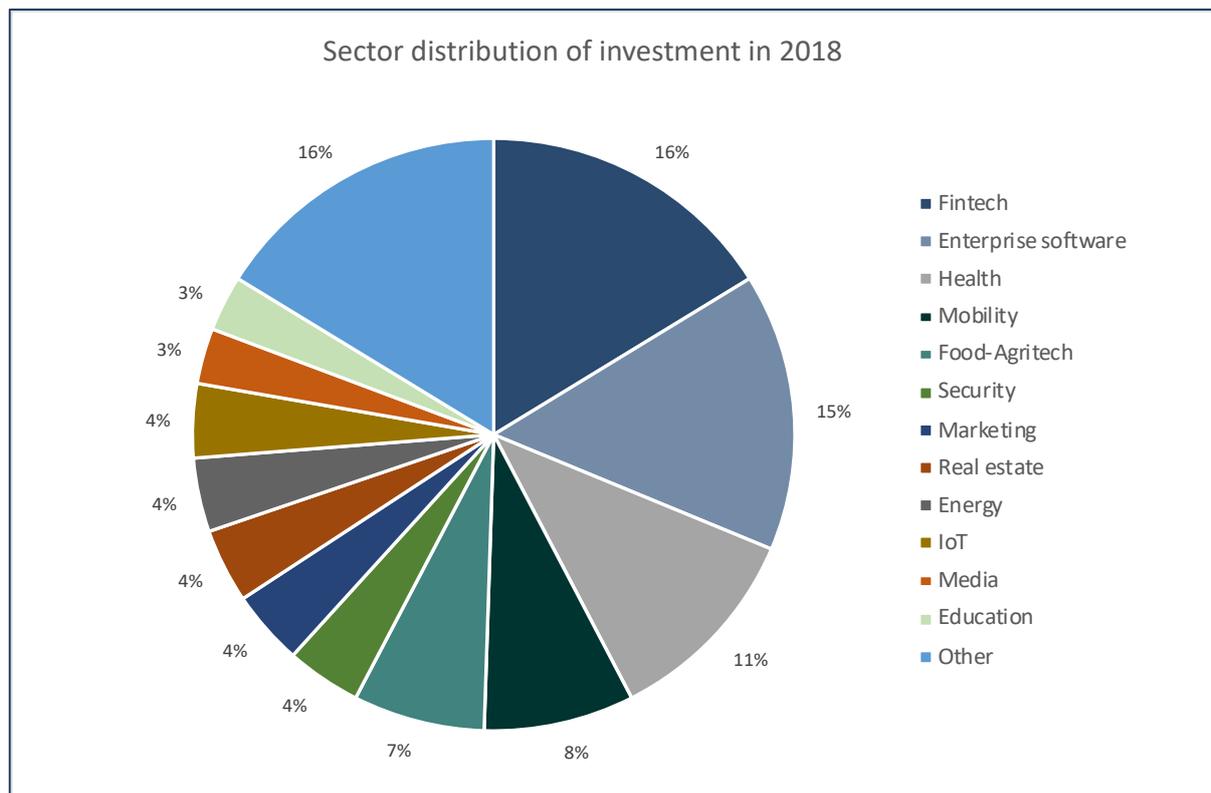


Figure 20: Sector distribution of investments in Italy. Source: IBAN, 2019

2.5.3 Venture Capital

The category of Private equity investors that intervenes with capital starting from the startup phase of a company is defined with the name of Venture Capital. Venture capital involves professional equity in the form of a fund run by General partners aimed at investing in early to expansion stages of high

growth firms. The typical investment size is about USD 3 to USD 5 million and contribution is disbursed after companies have already undertaken financing rounds from business angels, so they tend to intervene not before the startup phase. VCs act in a high-risk bankruptcy environment and therefore expect consistent returns after the exit strategy. The main distinction with the BAs, in addition to the size and timing of the investment, derives from the fact that VC funds do not invest their own money. At the time of their establishment they raise capital aiming to institutional funds as banking foundations, social security institutions, local public bodies, insurance companies and banks. VC funds can specialize in a particular investment sector but generally their target companies are characterized by a high degree of innovation. VC suppliers, in all their shapes and forms, constitute the most important source of capital during the crucial initial growth stages of innovative companies (EIF, 2019).

During the planning phase of the investment strategy they take into account operational risk, as well as the uncertainty of success on the market of products that the target company proposes. The presence of a VCs ecosystem capable of providing funds and managerial skills where it is necessary has become a fundamental requirement for the development of an innovative and competitive economy (Kraemer-Eis, Signore and Prencipe, 2016).

Recent statistics relating to VCs market in Europe indicate a significant growth of investments since 2013. Previously the financial crisis of 2008 had led to a decline and then to a period of stagnation that lasted from 2009 to 2012. Venture Capital investments raised by 13% to € 8.2 billion in 2018, providing capital to 4,437 companies and representing the largest portion of PE investments in Europe. The 29% of operations were carried out in the start-up phase while seed phase and later stages interventions that account for 8.5% and 31.7% respectively (recording a contraction compared to the previous year)¹¹.

¹¹ Statistics from European Small Business Finance Outlook of July 2019

Before the crisis later stage venture was the driver of VC investment with more than 50% of the resources employed, but since 2009, investments at the start-up stage have gained more popularity respect later stage VC investments.

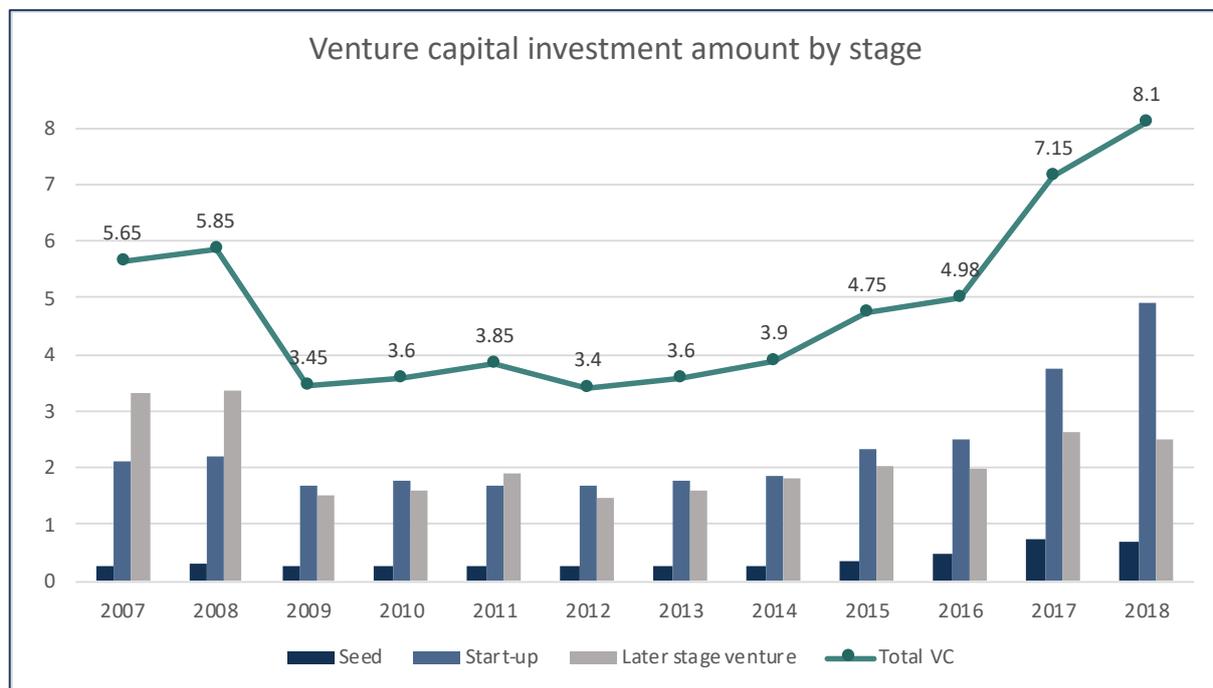


Figure 21: Venture capital's investments by stage between 2007 and 2018 (€ billion). Source: EIF, 2019

Investors continue to channel their funds to the same sectors over the years. ICT and biotech & healthcare have remained by far the most relevant industries for venture investment in Europe since 2007 and nowadays represent around 75% of total investments. In contrast, the share of investments in the energy and environment sector decreased from 14% in 2008 to 3% in the following 10 years. The global investment market of VCs is still polarized on the United States which in 2016 recorded USD 66.6 billion of domestic investments, the 86% of total venture capital investments in the OECD. In Europe, instead, the total outstanding amount stood only at € 4.7 billion¹². The 2018 data on the VC investments by country of portfolio company confirm that the US and Israeli markets are the most mature where the venture capital industry represents more than 0.35% of GDP. Europe records a value of just 0.05% but the situation among member states appears particularly heterogeneous. If on the one hand countries like the UK, Finland and Denmark register investments equal to almost 0.1% of their GDP, on the other hand economies of Eastern European countries and the Italy continue to struggle with the size of their domestic VC market which are not balanced to their share in the aggregate GDP of the EU (domestic VC market of Italy is about 0.01% of GDP)

¹² Statistics from OECD, "Entrepreneurship at a glance"

2.5.4 Public listing

Companies that are in the most advanced stages of their growth can decide to raise risk capital through listing on a stock exchange. This process usually takes place through an Initial Public Offer (IPO), an offer to the public of the securities of a company that intends to be listed on a regulated market for the first time.

IPOs are carried out by a company whose capital is owned by one or more entrepreneurs, or by a small group of shareholders (e.g. VCs), which decides to open up to a wider audience of investors at the same time as the listing on the stock exchange. There are three other ways to raise capital on the stock market:

- *Public Sale Offer* in which existing shareholders sell part of their shares on the market;
- *Public Subscription Offer* in which newly issued shares are subscribed by new investors;
- *Public Subscription and Sale Offer* in which both of the previous methods are used.

It may happen that an already publicly listed company again turns to the equity market to raise additional capital, this process is called *secondary public offering* (SPO or follow-on offering).

The capital is traded on an exchange, a market where financial securities and other assets (such as commodities) are negotiated. Many Exchanges are segmented in a primary market (usually a regulated segment) and in a secondary market (unregulated). The requirements for listing are typically less tight for the latter in order to promote capital raising for companies that cannot satisfy the higher requirements of regulated markets.

Companies that intend to go public are required to disclose periodical financial information to their investors and to authorities that regulate exchanges. The listing brings with it a series of benefits that vary from the financial, operational, organizational and tax areas. At financial level, there is a lower cost of capital, an increase in bargaining power with banks, the opportunity to use the listed security as a means of payment and the possibility of redefining the company's financial structure, with the aim of reduce debt and consequently the cost of debt capital. With regard to the organizational benefits, the listing requires the adoption of adequate control of information flows while at the operational level there is a marketing lever to expand the potential market, better visibility and the so called "*certification effect*". Concerning the tax aspect, there may be tax benefits¹³ for listed companies. A particular process that companies exploit to get listing is represented by Special Purpose Acquisition Companies (SPAC). A SPAC is an enterprise that raises funds through an IPO without owing

¹³ In Italy the Legislative Decree 537/1994 and Legislative Decree 466/1997 provide guidelines for temporal tax relief for newly listed companies on a regulated stock exchange

any assets. It is shell company aiming to find and acquire an existing unlisted company with high growth potential that will then automatically become listed through a merger with the SPAC itself.

Stock exchange markets represent a fundamental opportunity for non-financial companies to access capital as they provide a channel for acquiring risk capital through public offers and other placements. In addition, it requires issuing companies to apply transparent governance processes, under the watchful eye of investors and public authorities. Borsa Italiana is the company that manages the financial market in Italy, in the stock market it hosts 4 different segments:

- MTA ("*Mercato Telematico Azionario*") segment aimed at listing companies with medium-large capitalization;
- MIV ("*Mercato telematico degli Investment Vehicles*") segment dedicated investment vehicles;
- GEM ("*Global Equity Market*") segment dedicated to the trading of shares of non-Italian issuers;
- AIM Italia ("*Alternative Investment Market*") segment dedicated to small and medium-sized Italian companies with high growth potential.

The AIM Italia segment was officially born in 2012 with the aim of promoting SMEs quotation, making the most of the experiences gained, and to gather the maximum consent from investors. It is characterized by less restrictive constraints including the absence of a minimum capitalization threshold and minimum floating capital of 10% (Borsa Italiana, 2012).

At the end of December 2019, there were 374 companies listed on the Borsa Italiana stock markets (excluding companies in the MIV and GEM segments), of which 242 on the MTA regulated market and 132 on the AIM Italia unregulated market. In 2019 was recorded the record of admissions since 2000 with 41 new companies including 35 IPOs (4 on MTA and 31 on AIM Italia) and 6 admissions deriving from mergers and business combinations. Previous years recorded 31 IPOs in 2018 and 32 in 2017 (Borsa Italiana, 2019). *Figure 22* clearly shows how the AIM Italia segment, born from the union with MAC ("*Mercato Alternativo del Capitale*") in 2012, recorded a consistent growth in the number of companies, passing from 18 SMEs at the time of the merger to 132 at the end of 2019.

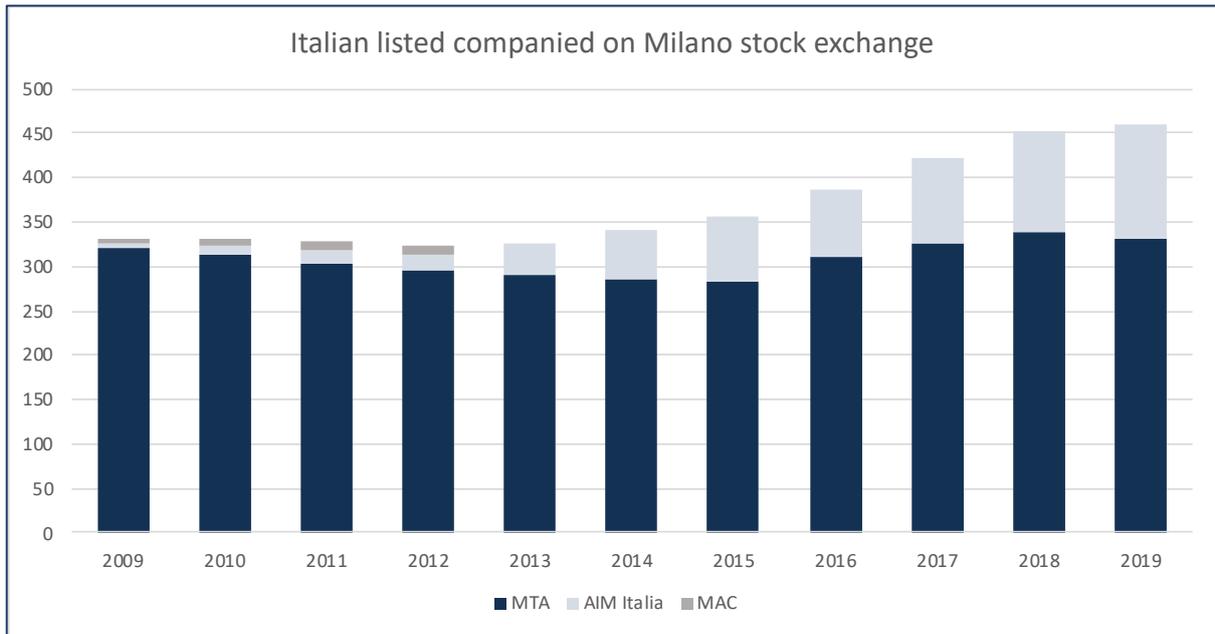


Figure 23: Italian companies listed on Milano stock exchange in last ten years. Source: Borsa Italiana

In particular, at the end of 2019 there were 203 non-financial companies on the MTA market (72 of which in the STAR segment) and 118 on AIM Italia. Moreover, considering the share capitalization, the banking-insurance sector weighs about 30% on the market; the industrial sector is worth just 14%, consumer goods 15%, utilities 18% and oil & gas 11%. A decline was registered in initial public offerings made by non-financial corporations both in the US and in the highest GDP European economies over the last two decades.

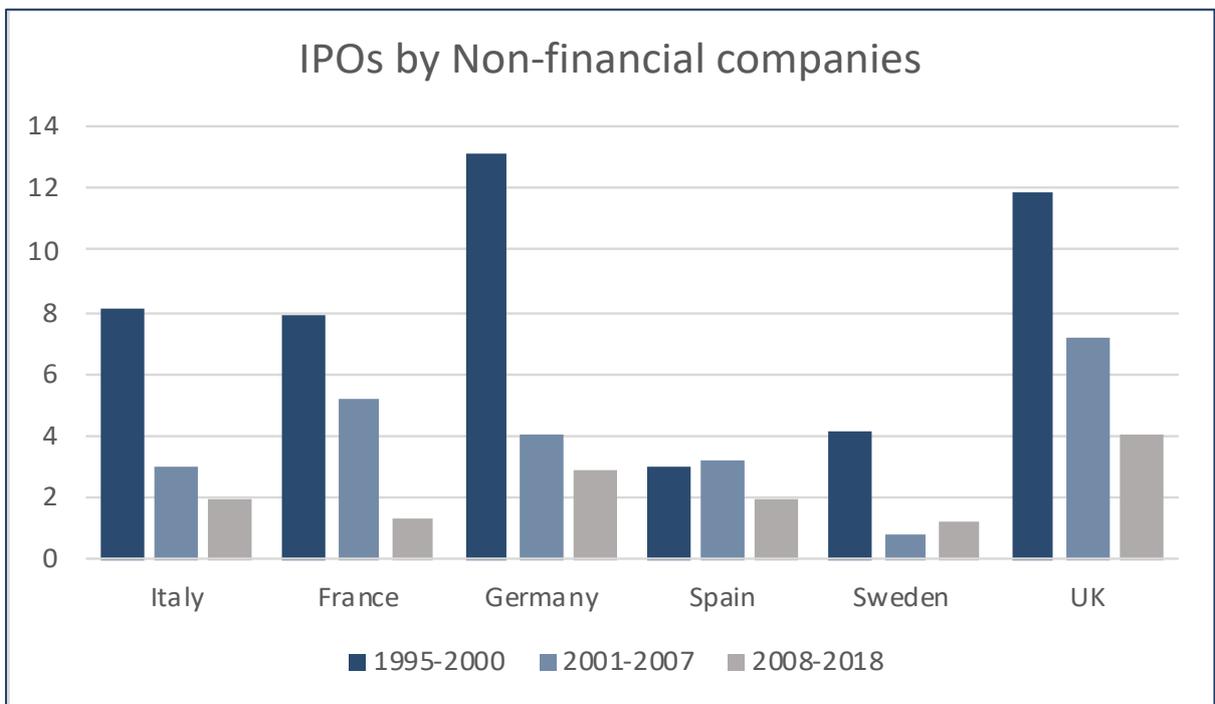


Figure 22: IPOs by non-financial companies in Italy and selected EU countries in last two decades (€ billion). Source: OECD, 2020

As experienced in France, Germany, Spain, Sweden UK and even in Italy, the average annual proceeds from IPOs by non-financial companies dropped from € 8 billion between 1995 and 2000 to € 1.8 billion in the 10 years following the crisis. The cause is to be found in the increase in total amount of equity capital raised by Asian non-financial companies after 2008, which has changed the global distribution of IPO proceeds towards Asian economies (OECD, 2020).

Chapter 3:

Problems and enabling factors for investments in Italy

3.1 Italian policies supporting the Non-financial sector

Despite most of the effort of policy makers has been focused on creating favorable credit conditions for businesses, seeking to reduce interest rates or offering guarantees to support credit supply, the structural problem of an overreliance of enterprises on bank lending channel still persists. The following chapter offers an overview of the European and Italian policies implemented to encourage the flow of capital to non-financial companies through alternative sources or favorable credit conditions. Since the sovereign debt crisis of 2012, additional government policies focused on alternative financial instruments have been implemented including new policy initiatives, scaling up existing measures and policy experimentation. The opportunities offered to companies are of different nature and take shape of tax relief for both companies and investors, dedicated investment funds, dedicated financial instruments, direct equity investment operation and even joint stock companies supporting enterprises at local level. The following paragraph proposes levers employed in Italy and then those applied in EU overall, underlining the importance of communication and coordination between national and supranational bodies to make the most of synergies that are created.

3.1.1 Individual Saving Plans (PIR)

With the Law 232/2016 (*2017 Budget Law*) the Italian government introduced a new form of fiscally incentivized saving instrument named PIR ("*Piani individuali di Risparmio*") with the aim to channel new funds to specific class of enterprises.

The idea is inspired by other form of similar fiscally incentivized instrument already in force in other European countries, the two most famous and widely spread are the Individual Saving Account (ISA) in UK and Plan d'Epargne en Actions (PEA) in France (Intermonte, 2018).

Pir can be described as fiscal containers in which savers place different categories of financial instruments or sums of money obtaining fiscal benefits as long as they respect certain obligations.

The purpose leading the introduction of the tool is to create a link between individuals resident in Italy looking for new investments and companies seeking for new sources of financing. Given the situation of the bond market offering near-zero returns, investments in the real domestic economy can be an interesting alternative for investors.

PIR can be carried out in several legal forms as mutual funds, SICAVs, individual portfolio management, insurance policies with a financial content and administered deposits. The available capital can be invested in shares, bonds, fund units and even derivative contracts.

The investment is incentivized by a total exemption regime from taxes on capital gains¹⁴ and even the exemption from inheritance tax if the constraints are respected. This instrument does not have a maximum duration however presents a minimum holding period of 5 years in order to take advantage of tax incentives, in addition, each individual can subscribe just one PIR at time. Each individual holding the instrument can invest an annual maximum amount of € 30,000, net of costs, with an upper threshold of € 150,000 while the minimum investment is set at € 500. To take advantage of tax incentives, it is mandatory to hold the position for a minimum of 5 years and the tax breaks lapses if the amount is withdrawn before the time constraint or if the investment quotas required by law are not respected.

Concerning the requirements, there is the obligation to reserve a 70% stake in securities of listed and unlisted companies, issued by enterprises resident in Italy or in the member states of the EU and the European Economic Area (EEA) but with stable and solid activity in Italy. Within this portion, the 30% must be invested in financial instruments of companies not included in the FTSE MIB index to incentivize the flow of funds towards the real economy. Moreover, each portfolio must comply with a concentration limit set at 10% for each issuer of financial instruments to encourage a certain level of diversification. The first collections of PIR recorded a very positive result exceeding any expectations; the new tax containers were positively welcomed by investors that supply a total amount of € 10,911 million only in their first year of life. Initial funding involved 64 open funds between newly established ones (40) and pre-existing ones (24) converted into PIR-compliant funds¹⁵.

However, results obtained in the first year did not benefit unlisted SMEs (Intermonte, 2018), funding flows had a significant impact on the prices and exchange volumes of shares listed on Borsa Italiana, particularly favoring the STAR segment and mid-caps. Different is the outcome for the primary market which has not recorded any significant increase of risk capital collection, similarly, even unlisted SMEs have not experienced any advantages since this class of enterprises still remained unattractive to PIR-compliant funds managers due to the illiquid nature of the investment.

¹⁴ The Italian regulation on taxation of capital gain from financial investments provides for a rate of 12.5% for domestic government bonds (Bot, BTp, CCT, Ctz) and 26% for other financial instruments (shares, mutual funds, currencies and corporate bonds).

¹⁵ Data provided by Assogestioni, the Italian association of Asset Management Companies

In the next year, the flow of funds remained positive albeit in marked decrease compared to the previous twelve months, recording a collection of € 3,956 million in 2018 on a total of 72 funds. To remedy the limitations faced during the first two years, the 2019 Budget Law (Law 145/2018) modified the composition of PIR constraints to promote their role as a vehicle of resources towards businesses, in particular to unlisted SMEs. (Musile Tanzi, 2019).

The new regulation acts on the restricted share equal to 70% of the total, imposing that:

- at least 5% (3.5% of the total value) must be reserved to financial instruments issued by SMEs and exchanged on multilateral trading systems (as AIM Italia and EXTRAMOT PRO).
- at least 30% (21% of the total value) must be reserved to financial instruments of enterprises other than those established in the FTSE MIB index or in equivalent indices of other regulated markets.
- at least 5% (3.5% of the total value) in shares of venture capital funds resident in the Italian territory.

The new restrictions introduced were negatively accepted by investors as they were considered too stringent and unsuitable for the Italian market. In particular, the constraint on the quota reserved for venture capital funds (Scozzari, 2019) seems not to be adequate for the Italian context given the limited development of SMEs' sector that does not allow substantial investments by funds over long time horizons. Francesco de Astis, equity executive of Eurizon Capital in Italy, highlighted how investments in illiquid asset classes (as the ones targeting PIRs) conflict with the nature of open funds which must ensure the marketability of the portfolio at any time.

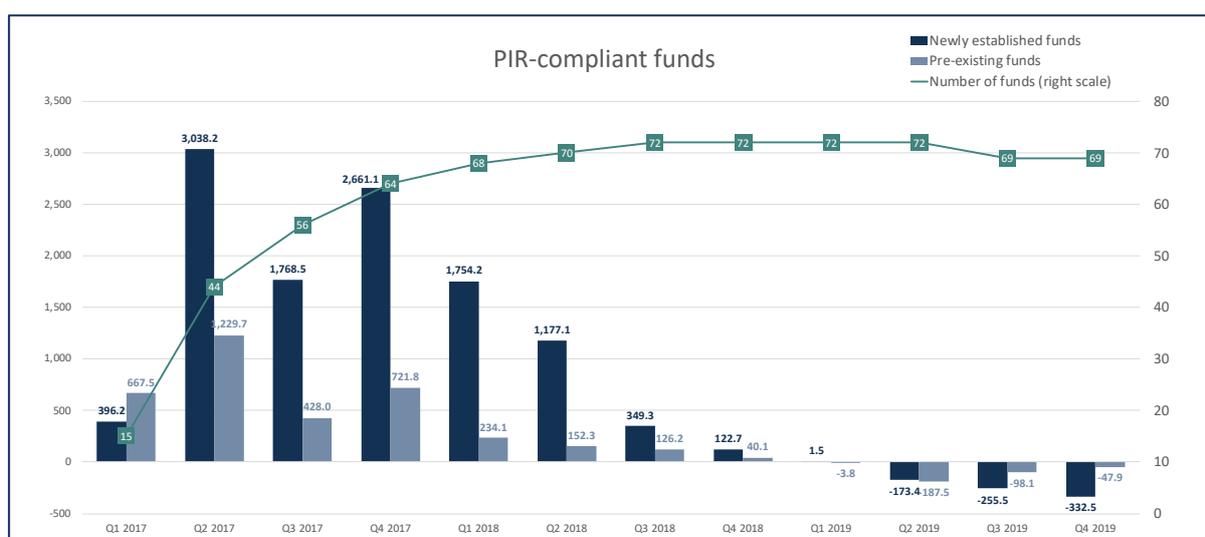


Figure 24: Net flow of fundings of Pir-compliant funds (€ million on left scale). Source: Mappa del Risparmio gestito, Assogestioni

The distrust regarding the new regulations led to a negative collection since the beginning of 2019 which worsened during the year ending up in a net flow of funds during 2019 alone equal to - € 1,097.2 million and a reduction of PIR-compliant funds from 72 to 69.

The new 2020 budget law (Law n.160 of December 27th, 2019) provides for the elimination of the venture capital constraint trying to relaunch PIRs towards a positive flow of funds. In addition, the new amendment will allow social security funds and pension funds to overcome investment restrictions reserved for natural persons therefore they will be able to subscribe more than one PIR at the same time (Lupoi, 2019). Another change concerns the restricted portion equal to 70% of the total, of which at least 5% of the total value must be employed in financial instruments of enterprises other than those included in the FTSE MIB and FTSE MID Cap stock market indices or in indices equivalents of other regulated markets to support SMEs.

3.1.2 Minibond

Minibonds can be defined as debt securities (bonds or financial bills) issued by unlisted Italian companies (typically SMEs) normally intended for development plans, extraordinary investment or refinancing operations. Debt securities are subscribed by professional and qualified investors as credit funds, banks, insurance companies and financial intermediaries¹⁶.

Minibonds were introduced with the Decree n. 83 of June 22nd, 2012 ("*Decreto Sviluppo*") and subsequently modified and integrated with Legislative Decree n. 179 of October 18, 2012 ("*Decreto Sviluppo Bis*"), Legislative Decree n. 145 of December 23rd, 2013 ("*Destinazione Italia*" plan) and finally with Legislative Decree n. 91 of June 24th, 2014 ("*Decreto Competitività*"). Potential issuers must be unlisted Italian companies other than banks and micro enterprises, declaring a turnover higher than € 2 million and with a staff of at least 10 employees. Unlisted SMEs face the opportunity to raise capital and improve their visibility on the market by making themselves known to investors also in the prospect of future capital gain operations. Moreover, this financial instrument serves to decrease the dependence on bank credit channel triggering a better financing diversification; loans granted by banking institutions represents the only medium-long term financing channel for many small businesses. The most suitable market for trading minibonds is the EXTRMOT PRO3 segment, a stock exchange sector reserved for institutional investors and in which debt instruments as financial bills, bonds and project bonds with a nominal value of less than € 50 million are traded.

¹⁶ Financial intermediaries registered in the list provided for by article 107 of the Consolidated Law banking and banks authorized to exercise investment services also with registered offices outside the European Community, provided they are authorized to provide services in Italy

According to statistics collected by Minibond Observatory of Politecnico di Milano, at the end of 2019 801 minibond emissions were recorded with an amount lower than € 50 million, equivalent to a cumulative nominal value of € 5.5 billion. The flow contribution relating to 2019 alone was € 1.183 billion, slightly exceeding the previous record of € 1.175 billion in 2017 and recorded an increase of + 21% compared to the volume of 2018 (€ 977 million). Considering just SMEs' contribution, the total drops to € 1.965 billion with a flow of € 344 million in 2019 confirming how this last year is characterized by a greater presence on the market of companies that do not qualify as SMEs.

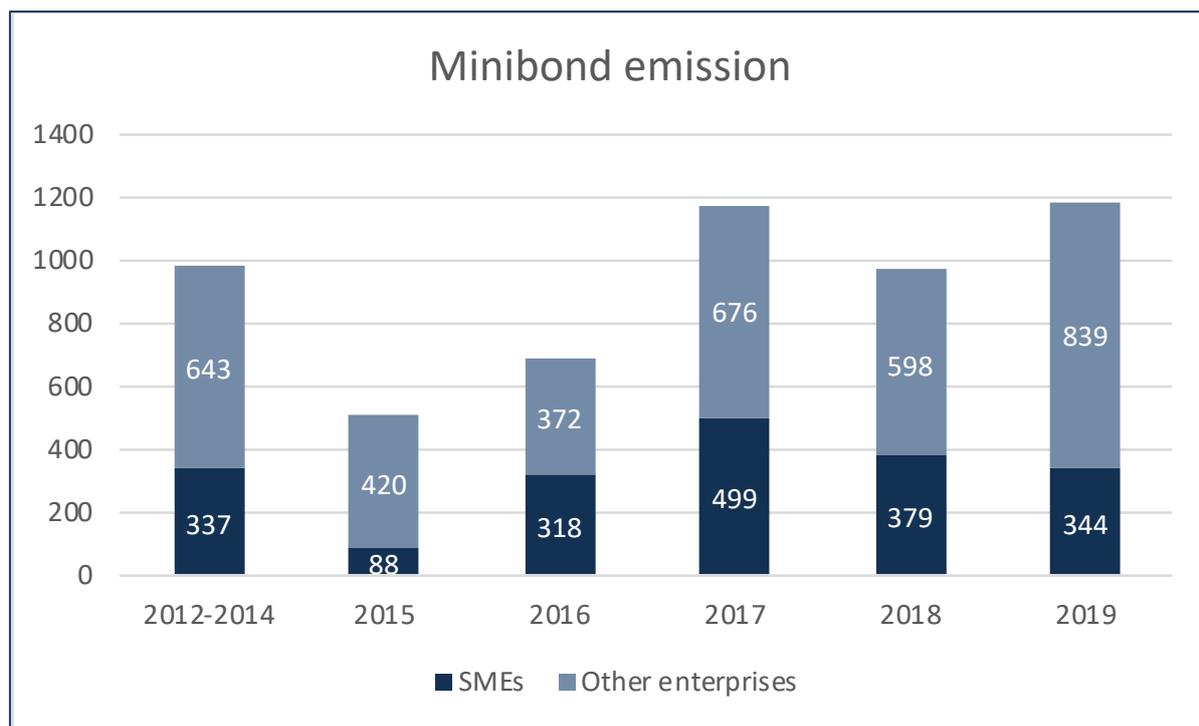


Figure 25: Annual emission of minibond of SMEs and other enterprises (€ million). Source: Osservatorio minibond Politecnico di Milano

Regarding the sector of activity in which the issuing companies are employed, it is possible to carry out a classification based on the ATECO codes. As shown in *figure 26*, the most represented sector is manufacturing activities (code C) with 244 cases equal to 46% of the sample, followed by the Professional activities (code M) with 43 companies and wholesale and retail trade sector (Code G) with 41 issuers. In the sample¹⁷ in question, the financial companies that fall under the K code are excluded, therefore all sectors in the figure are included in real economy definition.

¹⁷ The analysis is based on a sample of 536 enterprises that issued Minibonds in Italy

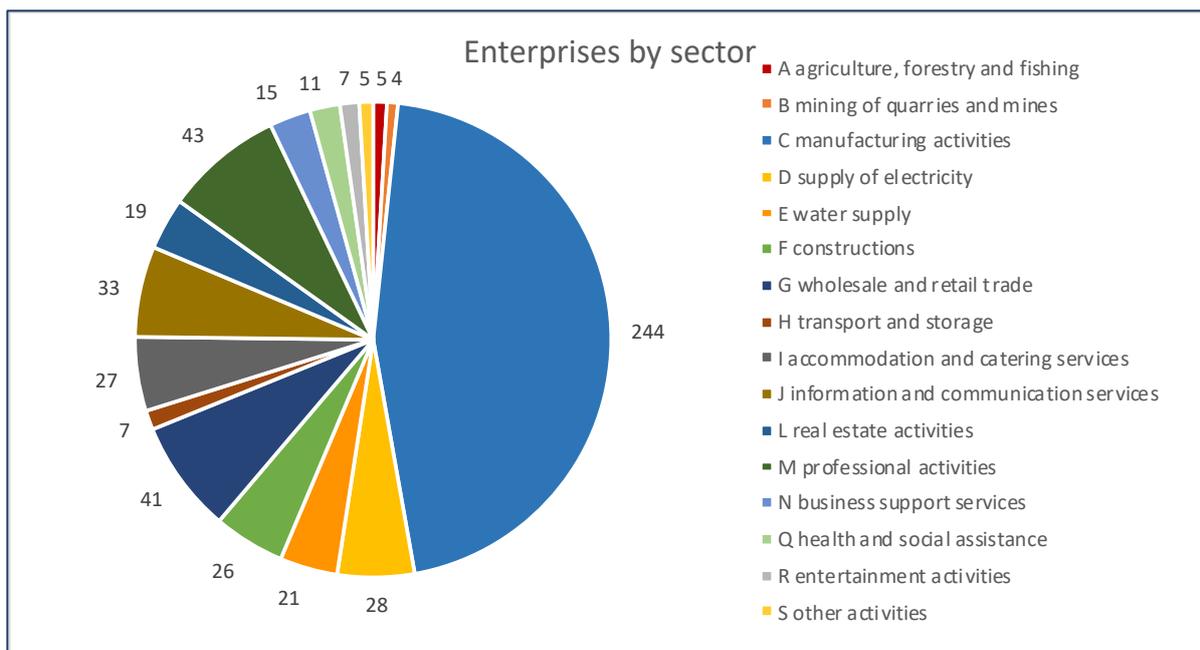


Figure 26: Segmentation Italian companies issuing minibonds by type of activity according to ATECO codes. Source: Minibond Observatory of Politecnico di Milano

SMEs managers stated that issuing minibonds represents a less expensive form of financing than bank credit which for certain groups of SMEs is difficult to access (especially for medium / long term financing). Other factors that have contributed to the diffusion of the instrument derive from the fact that the issue of minibonds receives media visibility from professional investors who have the opportunity to better know the issuing company. This visibility generates a double advantage for the company, on one hand it receives an image return and on the other hand has the opportunity to explore the market for future operations as IPO or private equity.

Due to the small size of issuing enterprises, minibonds were not very attractive to certain classes of institutional investors (especially foreign ones) who require a minimum threshold to undertake an operation. The solution was the creation of basket bonds¹⁸, securitized debt securities consisting in pooling minibonds of different issuers with same issuing date and maturity. These debt securities are fully underwritten by a newly created vehicle, which in turn finances itself on the market with an issue of asset backed securities that have individual credits as their underlying. This operation allows to reach the critical mass to attract relevant classes of institutional investors, who have the possibility to reduce the risk by investing in a diversified basket of securities. In the second half of 2019, securitization transactions of this nature raised a total of € 400 million and several other relevant transactions are planned by Intesa San Paolo and the Cassa Depositi e Prestiti (CDP) in the next future.

¹⁸ Basket bonds are sold to investors divided into various tranches as senior, mezzanine, junior etc.

3.1.3 Tax credit

With the 2018 budget law, a tax relief has been introduced for SMEs undertaking the public listing process. The amendment targets SMEs that have obtained admission to listing on a regulated market or in multilateral trading systems of an EU or EEA, providing a tax credit equal to 50% of consultancy costs (up to a maximum of € 500,000) incurred up to December 31st, 2020. The € 80 million allocated by the Government in the three-year period 2019-2021 have the objective of alleviating the costs of a fiscal, legal, financial, as well as marketing and communication nature that SMEs have to bear for an initial public offering (Borsa Italiana, 2018).

3.1.4 Startups and Innovative SMEs

The Law Decree 179/2012 introduced the legal status of Innovative Startup with the aim of promoting an entrepreneurial environment oriented towards innovation and capable of creating job opportunities as well as attracting foreign capital. The legislation targets new high-tech companies that can obtain the status of innovative startup as a capital company whose objective is the development, production and marketing of innovative products or services. The innovative startup must be less than 5 years old, must not be listed on the stock exchange, cannot distribute profits and must meet at least one of three following requirements:

- research and development expenses equal to at least 15% of the greater value between cost and value of production;
- at least two thirds of employees must own a master's degree, or at least one third must have a PhD;
- hold at least one industrial property right (as a patent).

The benefits that innovative startups receive concern bureaucratic simplifications, a specific discipline for work-for-equity, priority in accessing the Central State Fund for guarantee on loans and tax incentives for investors¹⁹. Three years later, the Law Decree 3/2015 integrated the existing regulation by introducing the concept of innovative SMEs to which most of the advantages associated with innovative startups are extended. This new entity is defined as an unlisted SME, having at least a certified balance sheet and accomplishing at least two of the three requirements for the innovative

¹⁹ For natural persons, a deduction of 30% of the amounts invested in the capital of innovative start-ups is envisaged, up to a maximum investment of € 1 million per year; while legal entities benefit from a deduction of 30% of the amounts invested in innovative startups, with a maximum annual investment ceiling of € 1.8 million.

startup status²⁰. At January 1st, 2020, 10,860 innovative startups and 1,355 innovative SMEs were officially registered the Italian territory.

3.1.5 Invitalia

Invitalia is the agency of the Ministry of Economy and Finance (MEF) established in 2008 with the aim of supporting business projects, relaunching crisis areas and promoting sectors of strategic importance in Italy. Operations are carried out in the form of non-repayable loans (benefiting from community and national development programs) in favor of entrepreneurs with business projects and favoring innovative and high value-added sectors with well-structured development plans (D' Andrea, 2017). Among the most important plans of support there is the "*New zero-interest companies*" project, which provides zero-rate loans for young entrepreneurs and women aged up to 35 who can cover up to 75% of the initial investment to start a business.

3.1.6 Guarantee fund

Established in 2000 by the MEF, the Fund supports companies and professional individuals who have difficulty in accessing bank credit (including microcredit) due to the lack of required guarantees. Thanks to economic support from Italian Government and EU, enterprises have the opportunity to ask for resources to banks, leasing companies and other financial intermediaries, with the coverage of the Fund up to a maximum of 80% of the financing on all types of operations both short-term and medium-long term, both for liquidity and for investments. An assessment of the applicant companies is carried out to assess their ability to repay the guaranteed loan. To conclude the guarantee operation, companies must be considered economically and financially stable on the basis of specific evaluation models that analyzes balance sheet (or tax declaration) of the last two years. Since 2000, the Guarantee Fund has facilitated over € 150 billion in loans, providing guarantees of € 97.4 billion²¹.

3.1.7 Regional financial institutions

Established between the end of the 60s and the beginning of 70s, regional financial institutions are legal entities configured in the form of a joint stock company with the role of supporting and implementing economic policies and actions at a local level. Currently in Italy there are 19 regional financial institutions (one for each region except for Marche region) which intervene in favour of businesses and real economy with non-refundable (or favourable rate) loans, with guarantees and

²⁰ The only difference in requirements regards R&D expenses that should amount at 3% (of the greater value between cost and value of production) for innovative SMEs instead 15% required by innovative startups.

²¹ Statistics from "Fondo di Garanzia" website

direct investments in debt or in equity securities²² (ISSIRFA, 2016). Many of the contributions and calls available are addressed to local SMEs to reduce the cost of debt and offering guarantees on first losses. Their presence on the territory makes them aware of the problems and needs that local businesses face, these issues can vary from region to region (especially between Southern and Northern Italy) so as the need of customized support plans depending on the territory. Several regional financial institutions collaborate with supranational bodies, as the European Investment Bank and the European Investment Fund, which play a key role for the implementation of financial sources to be used for investments by SMEs. The regional financial institutions also cooperate directly with Regions of reference regarding the implementation of the Planning of the European Structural and Investment Funds, providing technical skills and support to the processing phases conducted by the Regions in order to screen applicants of calls.

3.1.8 Italian Investment Fund AMC (Asset Management Company)

The Italian investment fund AMC ("*Fondo Italiano d'Investimento SGR*") is a savings management company founded in March 2011 by MEF and controlled by CDP for 68%, by UniCredit for 12.5%, by Intesa San Paolo 12.5% and by Confindustria and ABI for the remaining stake. The company manages 8 closed-end investment funds dedicated to SMEs supporting their growth and development projects related to technology and innovation. The funds in question are reserved for qualified private investors and in 2019 the amount of assets under management stood at € 2.3 billion²³.

The Italian investment fund operations are segmented in three distinct areas:

- Direct private equity which deals with investing in SMEs with good development prospects;
- Tech Growth in which it invests in high-tech SMEs that intend to undertake a scale up phase;
- Funds of Funds whose objective is to invest in other vehicles dedicated to private equity, private debt and venture capital.

3.1.9 Cassa Depositi e Prestiti

Founded in Turin in 1850, Cassa Depositi e Prestiti (CDP) is a joint stock company controlled 83% by the MEF and 16% by several banking foundations from all over the Italian territory. It is classified as a financial institution and is one of the three largest Italian banking groups in terms of assets, together with UniCredit and Intesa San Paolo Group. Cassa Depositi e Prestiti participates with risk capital in medium and large companies considered strategic at national level. The CDP Group is also a shareholder of unlisted companies, asset management companies and owns shares in private equity

²² Definition by ISSIRFA, the Italian institute Institute for the Study of Regionalism, Federalism and Self-Government

²³ Statistics from "*Fondo Italiano d'Investimento SGR*" website

funds. Among the most relevant enterprises, CDP owns 35% of Poste Italiane S.p.A, 25% of Eni, 30% of Terna S.p.A., 31% of SNAM and 71% of Fincantieri. Its main source of financing derives from the postal collection it manages since 1875; at the end of 2018, total CDP's collection²⁴ amounted to € 340 billion, of which € 252 billion directly from postal savings (CDP, 2019). In relation to the Juncker Plan for European investments, the Cassa Depositi e Prestiti has assumed the role of National Promotional Institute in Italy. The 2019-2021 Industrial Plan is committed to mobilizing € 110 billion²⁵ coming directly from CDP for the country's economic growth with the aim of triggering € 90 billion of additional resources from private investors and other territorial, national and supranational institutions. Of the € 110 billion, € 83 billion will be reserved to Italian companies through equity investments, debt underwriting and guarantees, € 25 billion will be dedicated to investments in infrastructure, public administration and territory while the remaining € 3 billion will be employed to finance developing countries.

3.2 European policies supporting the non-financial sector

The introduction of new European policies become necessary to face the situation European countries were experiencing after the 2012 sovereign debt crisis. In addition to the liquidity trap that required the adoption of a quantitative easing policy in 2015, the other major problem concerned the unemployment rate due to both cyclical as well as structural causes. The ECB President Mario Draghi's speech at the annual Central Bank symposium in Jackson Hole on August 22nd, 2014 focused on the importance of implementing supply and demand policies within a coordinated framework both at EU and national level as the only solution to reduce unemployment.

²⁴ Including debt securities

²⁵ Statistics from "Cassa Depositi e Prestiti" website

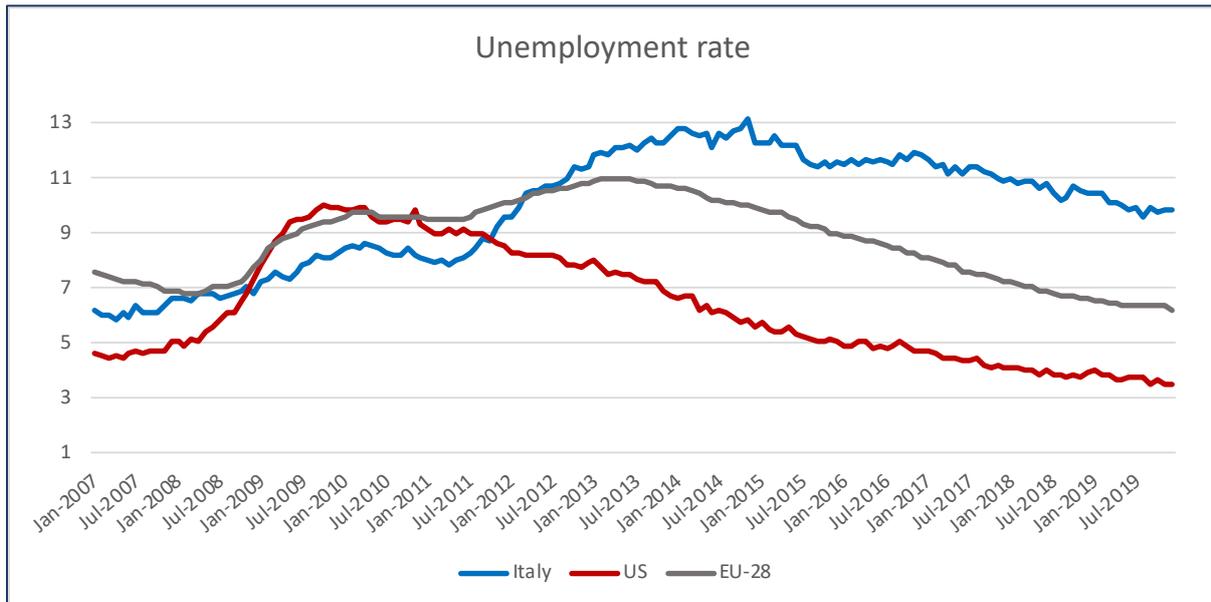


Figure 27: Comparison of harmonized unemployment rate of Italy, EU-28 and United States (% on the axis). Source: OECD Database

Figure 27 compares the trend of the unemployment rate in the last 12 years of Italy, the United States and the EU-28, highlighting the different recovery that has taken place following the economic and financial crises. Whereas the US experienced a sharp and immediate rise in unemployment right after the Great Recession, the Euro Area has endured two rises in unemployment associated with two sequential recessions. Unemployment growth among the three players was similar during the Great Recession however, both US and Europe followed different trends since 2012 due to European sovereign debt crisis that led to an 11% unemployment spike in April 2013. European recovery has been slower than in US which has remained almost untouched by the European sovereign debt crisis. Over the years both Europe and the US returned to pre-crisis unemployment levels while the Italian situation is much more complicated. At the beginning of 2007 the unemployment rate²⁶ stood at 6.2% and following the great recession the value rose up to 8.6% in May 2010. Subsequently, Italy was particularly affected by the sovereign debt crisis that led to exceed the average unemployment rate in Europe which, until 2012, was higher than the Italian one. The gap generated between Italy and Europe has not been filled in the following 7 years and currently stands at more than 3 percentage points. Therefore, it appears necessary to set up coordinated development plans that can convey European funding to the Member States that are still struggling to bridge the economic and social gap generated by the crisis. The main interventions took the form of medium / long-term support programs for the economy that involve European institutions responsible for providing resources. At the same time, ad-hoc financial instruments were introduced to promote strategic sectors of the Member States.

²⁶ The unemployment rate is defined as the ratio between the number of job seekers and the total workforce of a system

3.2.1 Juncker Plan

In November 2014 the European Commission President Jean-Claude Juncker presented the "*Investment Plan for Europe*" (also known as the Juncker Plan) with the aim of mobilizing resources and forms of support useful to promote investments in EU following the effects of the crisis and the liquidity trap that arose in those years. The sovereign debt crisis left member states enterprises in a lack of funding (especially for R&D) as to further slowdown the recovery process. The Juncker Plan is committed to provide technical assistance and visibility to investment projects, to optimize the use of available resources and to remove obstacles to economic growth.

The entire plan is built on three fundamental pillars: the European Fund for Strategic Investments (EFSI), the European Investment Advisory Hub and a series of business strategies implementations.

The European Fund for Strategic Investments (EFSI) aims to support operations of the European Investment Bank (EIB) through guarantees on first losses. The initial resources available to the fund amounted to € 21 billion, of which € 5 billion disbursed by the EIB and € 16 billion from the EU budget. This capital was reserved to two different investment categories: long-term investments focused on infrastructure (Infrastructure and Innovation Window) and investments focused on small and medium capitalization companies (SMEs Window). To the first category were allocated € 15.5 billion and were deployed directly by the EIB while the remaining € 5.5 billion were allocated to SMEs through guarantees and equity investments. The capital reserved to SMEs Window was initially employed by the EIB to strengthen the existing development programs pertaining to the fund and to increase the Risk Capital Resources equity mandate entrusted to EIF by € 2.5 billion. The program aimed to stimulate € 315 billion in the three-year period 2015-2017, by addressing market gaps and mobilizing private resource, the goal was achieved in July 2018 and the program was extended for the following three-year period 2018-2020 bringing the target of mobilized resources at € 500 billion²⁷.

The initial criticisms regarding the feasibility and effectiveness of the plan concerned the timing and the quantitative amount of initial capital of the maneuver (Le Moigne, Saraceno and Villemot, 2016) as it entered into force two years after the fall of ECB main rate²⁸. The paper stated that EU bodies had not been able to implement policies and respond quickly to the crisis that was raging in that period therefore, if the maneuver had been implemented in advance with same resource plan, it would have had a positive response even in a zero lower bound situation. To remedy the marked delay of the

²⁷ The EFSI 2.0 Regulation was voted on December 13th, 2017 and entered into force at the end of the year, while the EFSI Agreement with EIB signed in March 2018.

²⁸ The interest rate on the main refinancing operations (MRO), which provide the bulk of liquidity to the banking system, fell below 1% in July 2012.

entry into force of the plan, competent bodies would have had to increase the volume of resources in place as in 2015 € 21 billion would not have been sufficient to raise up economy. Therefore, the plan was initially considered too small in size by the time it started and lagging behind the needs of Member States.

On the contrary, during the weekly meeting of July 18th 2018 the president of the European commission Jean-Claude Juncker announced the achievement of the objectives of the maneuver stating that *"We surpassed the original € 315 billion investment target and the European Fund for Strategic Investments is set to create 1.4 million jobs and increase EU GDP by 1.3% by 2020. We have financed projects which without the EFSI would not have been possible, and all without creating new debt: two thirds of the investment comes from the private sector."*

The second pillar is achieved through the European Investment Advisory Hub, a single access point to support services as consultancy and technical assistance intended for promoters of private and public projects. The services offered are customized and made more accessible at national and local level through the involvement of banks and other intermediaries.

Lastly, the third pillar acts at national and European level and consists in recommendations, strategies and action plans to be implemented to improve the business environment in order to remove regulatory barriers to investment.

The latest updates from the European Union in December 2019 reported that the European Investment Plan expected to trigger € 458.8 billion in investments for 1,043,000 SMEs across Europe (EC, 2019-d). It is estimated that at the end of 2019 operations under the Juncker Plan increased EU GDP by 0.9% and added 1.1 million jobs. By restricting the area of interest to Italy, total financing under the EFSI amounts to € 11.2 billion and is set to trigger € 69.5 billion in additional investments. In particular, 92 projects in infrastructure and innovation financed by the European Investment Bank were accepted and 93 projects in support of SMEs with intermediary banks or funds financed by EIF and EFSI were approved.

3.2.3 ELTIF

European long-term investment funds (ELTIF) are closed-end alternative investment funds introduced by the EU regulation 2015/760 came into force on 8th June 2015. The regulation was applicable in all EU Member States as of December 9th, 2015 with the aim of providing investors with stable returns

over a medium-long time horizon and acting as an alternative source of financing to the banking channel for both European SMEs and infrastructures.

Considering the Italian environment, the European legislation was transmitted with the Decree Law 233/2017 and the regulation entered into force on February 2018. This type of closed-end funds address both institutional and retail investors and as alternative funds, they present characteristics and limitations regarding the class of products in which they can invest. Established to support the real European economy, ELTIFs are authorized to invest in financial instruments issued by SMEs active in certain sector as energy, transports and infrastructure sectors (Stefanin and Mattioli, 2018). The target companies of ELTIFs are called "*eligible portfolio companies*" and must respect specific attributes as:

- not being financial companies;
- not being admitted to trading on a regulated market or multilateral trading system, or if listed, must have an average capitalization lower than € 500 million;
- must be based in an EU member state or in another country that meets certain requirements on the subject of anti-money laundering, fiscal legislation and anti-terrorism.

With the "*Decreto Crescita*" of 2019 (L.D. n. 34/19, art. 36-bis), substantial tax breaks have been introduced in order to promote instrument and place it alongside the PIRs as a funding lever to the real Italian economy. The incentives address only natural persons resident in Italy and consist in the exemption from profits taxation deriving from participation in ELTIF (or in ELTIF funds) and in the exemption from inheritance tax of the units or shares of the ELTIF (or of the funds of ELTIF) which, do not contribute to forming the hereditary asset. In order to benefit from these concessions, at least 70% of the ELTIF capital must be invested in:

- equity instruments (or almost equity) or in debt instruments issued by eligible portfolio companies, also acquired on the secondary market;
- loans disbursed by the ELTIF to eligible companies;
- real assets, for a value of at least € 10 million, indirectly through the participation in eligible portfolio companies.

The remaining 30% of the capital can be used for other activities. Moreover, capital raised by each fund manager cannot exceed € 200 million per year and € 600 million in total.

The reduction of capital requirements as an entry barrier is an enabling factor for the diffusion of this instrument, the minimum investment required for retail investors is € 10,000 and, unlike PIRs, the

maximum annual investment amount is equal to € 150,000, for a total of € 1.5 million. The minimum holding period of the investment is 5 years, however, investors can divest shares in advance and preserving the tax benefits by reinvesting the capital in other ELTIFs (or ELTIF funds) for the same value within 90 days.

To develop a safe and diversified product, the European directive requires ELTIFs cannot invest more than 10% in financial instruments issued by the same enterprise and no more than 5% in eligible assets according to UCITS directive issued by a single entity (Trappolini, 2019). An additional guarantee of these products is ensured by the European regulation that draw up guidelines for institutions who manage and distribute ELTIFs. Among the most relevant there is the duty of the supply party to collect all the necessary information from the retail investor regarding his financial knowledge, risk appetite and investment objectives; in addition, there is an upstream preventive assessment mechanism regarding the suitability of the investor. For retail portfolios of less than € 500,000, the capital earmarked for ELTIFs should not exceed 10% of the total, always considering the minimum investment of € 10,000. Although at the end of December 2019 ELTIF in Italy still seem to be a limited reality and with characteristics that cannot take full tax benefits, is estimated that since 2020 several fund managers will join on market; first in chronological order is the Azimut ELTIF fund which will set € 10,000 as entry threshold.

According to some estimates based on results obtained in other countries, the ELTIF flow of funds in the next 5 years will be between 7 and 8 billion euros (Candita, 2019), important figures that confirm this instrument as a valid alternative to Individual Savings Plans that, due to the 2019 legislation, have not been able to maintain the expectations generated in the previous two years. Like venture capital funds, ELTIFs can participate in SMEs risk capital representing an alternative form of medium to long-term financing.

3.2.4 European Investment Bank Group

The EIB Group is composed by the European Investment Bank and by its operating arm, the European Investment Fund. The European Investment Bank is the financial institution of the European Union established in 1958 following the Treaty of Rome to financially support political objectives of the Union. The main purpose of the EIB is to increase Europe's potential both in terms of employment and economic growth through the provision of loans, equity participation, guarantees and through assistance as well as technical advices to maximize the return on funds (EU, 2019). Funds are granted under favorable conditions and addressed mainly to transport, telecommunications, energy, health,

education and research and development sectors. EIB vice-president Dario Sannapico reported that in 2019 Italy benefited from € 11 billion in funding, 14% more than in 2018 (Greco, 2020), which stimulated a total of € 34 billion in investments. In 2019 Italy was the country that benefited most from the funding among all Member States (the second country was Spain with € 9 billion), 143 domestic operations were supported which contributed to the financing of 44,595 SMEs, equal to 734,652 jobs. The European Investment Fund (EIF) was established in 1994 with the main purpose to support the creation, growth and development of small and medium-sized enterprises. It focuses on providing venture capital to SMEs, particularly by favoring newly created and technology-oriented ones, it also collaborates with financial institutions to provide guarantees for the loans they grant to SMEs.

3.2.5 Horizon 2020

Horizon 2020 is a financing program constituted by the European Commission with the aim of promoting research, innovation and supporting industrial leadership in the European Union. The program started in 2014 with a duration of 7 years during which € 80 billion will be available in addition to public and private investments that this sum will trigger. The aim of the program is to ensure that Europe produces world-class science and technology that stimulate economic growth and remove obstacles to innovation. This will be achievable through collaboration between public and private sectors to find solutions to the great challenges of our society (EC, 2014). At 2019, Italy was the fifth country among the EU-28 in terms of participations²⁹ with 12,095 eligible companies for the Horizon 2020 program, of which 2,888 SMEs. SMEs received a total of € 732.8 million in funding (net of third-party funding) and, considering even large enterprises, universities and the remaining participants, the amount of resources allocated to Italy amounted to € 4.05 billion, 9.12% of EU total funding.

At the end of 2020, a new European framework program will be launched with the name Horizon Europe (€ 100 billion available) that continue to support and promote scientific excellence adopting a new approach in order to achieve even better results from social, political and economic point of view. The framework will operate over a 7-year time horizon (2021-2027) and, like its predecessor, will be based on the three fundamental pillars: scientific excellence, global challenges and European industrial competitiveness and innovation, for which they will be allocated respectively € 25 billion, € 52 billion and € 13 billion (EC, 2019-e).

²⁹ Statistics from European Union website on Horizon 2020 funding by country

3.3 Obstacles to investment

The ongoing initiatives discussed in the previous paragraph aim to mitigate barriers that hinder investors from undertaking operations in the Italian real economy. The following paragraph illustrates the main structural and social problems involving investments in non-financial enterprises. Some issues can be solved with adequate political support, an essential prerogative to promote stability firstly on the financial markets and secondly to productive sectors overall. During last decade, Italy was the protagonist of a succession of governments that created several turmoil on the financial markets that then spread to the real sector, creating many problems for the economy. In the following paragraph are proposed two examples of market imperfections that concern the economy in general, then is analyzed the situation of the capital market in Italy and how it does not provide adequate resources for certain types of companies. Finally, the theme of infrastructure is discussed, a topic of national interest which acts as enabling factor for many businesses

3.3.1 Home bias

The home bias phenomenon regards behavioral finance studies, the branch of the economy that analyzes the behavior of financial markets by applying principles of psychology to individual and social behavior. Home bias reflects the evidence of both professional and retail investors to invest more in securities of the country they belong to rather than in foreign securities. This evidence may appear irrational in accordance with classical theories, optimization and portfolio balancing however, it is more justified in the real world where information asymmetry, legislative constraints or particularly high transaction costs do not permit the creation of an optimal portfolio. If on one hand this circumstance keeps capital in Italy as Italian investors tend to favor domestic equity bond markets, in a broader perspective it restricts foreign investors to invest in Italian enterprises losing the opportunity to geographically diversify their portfolio.

Taking in consideration equity home bias, during the period 2015-2018 the non-European countries with the greatest weight of domestic shares out of the total shares held by investors were the United States and Australia, with respectively 79.1% and 66.5% (Mercer, 2019). In Europe the average value stood at 48% but the situation appeared heterogeneous among Member States. On one side there are countries as Germany, Spain and Italy with values of domestic equity between 45% and 55%, while other countries as France, Belgium and Portugal present strongly unbalanced portfolios in favor of domestic issuers (over 80%). Nonetheless, analyzing overinvestment in domestic equities in relation to the weight of the national stock markets in the global indices, US appear much more balanced than France since the weight of the US market on a global perspective is equal to 53% while the French one

only 3.3%. Consequently, American investors overinvest in domestic shares 1.5 times while French investors 25 times (Itinerari previdenziali, 2020). Even the bond market is experiencing the home bias phenomenon, France invests 93% of its bond portfolio in domestic securities, Germany and the United Kingdom invest over 80%, while Italy stands at 62%. All 4 countries' bond market weight on the global one is around 4% each, signaling a strong investors preference for domestic debt securities.

By focusing on Italian institutional investors, it is possible to highlight how negotiating pension funds, open pension funds and pension funds invest respectively in domestic equity 3.1%, 5.3% and 44.8% of their equity portfolios. As regards the bond sector, domestic securities vary from 30 to 50% of bond investments. The phenomenon at international level has recorded a significant reduction over the past twenty years given the decrease in barriers to gather information and make investments beyond domestic borders. Moreover, investors arose the awareness that investing in foreign securities tends to level the systematic risk as foreign investments are less likely to be affected by domestic market turmoil.

3.3.2 Information asymmetry

The root cause of obstacles that enterprises face in receiving resources especially from banking institutions derives from information asymmetry. The phenomenon occurs whenever a party has relevant information about a decision that the counterparty does not own. In the economic context, the lack of information of the counterparty that has to make a decision can lead to an inefficient allocation of resources. The literature on the phenomenon has its origins in the article written by the American economist George Akerlof in 1970 entitled "*The Market for Lemons: Quality Uncertainty and the Market Mechanism*" which demonstrates how the interaction between heterogeneous product quality offered and an information asymmetry situation between actors involved leads to the disappearance of a market whose guarantees are not defined. In the interaction between borrower and lender, market imperfection generates two fundamental problems: adverse selection and moral hazard. The first concerns the inability by banks or other credit institutions to distinguish good quality projects from bad quality ones among all financing applications. Consequently, they apply an average interest rate for all applicants in relation to information available of projects quality distribution on the market. Therefore, quality projects do not receive funding at right cost and leave the market because they are not willing to pay the premium rate that banks charge to reduce potential risk of credit losses. This process of credit rationing leads to a market overpopulated by riskier projects that expose banks to a greater risk of non-performing loans (NPL).

The other phenomenon called moral hazard arises after the transaction occurred and derives from the fact that the financial institutions are unable to supervise the borrowing company and obtain effective information on borrower's willingness to pay back loans, business performance, and for which project resources are actually employed. It may happen that borrowing enterprise violates the original commitment they made when signed the contract and engages in high-risk investment or intentionally flight from debt. The borrower is incentivized to take excessive risks due to limited liability in case of default; therefore, to mitigate this phenomenon, banks decide to decrease the supply of credit. Credit market information asymmetry can be mitigated by including collateral in the financial agreement allowing credit institutions to recover part of the losses in case the debtor is unable to fulfill the commitment. Unfortunately, many SMEs do not have required collateral and consequently they are denied the possibility of applying for bank loans despite having projects with excellent probability of success.

3.3.3 Stock Exchange limitations

The Italian capital market is not sufficiently developed to provide long-term resources to non-financial firms. At the end of 2019 the ratio between stock market capitalization and GDP stood at 36.4%³⁰; in the past decade after reaching the minimum value (21%) in 2011, it has grown progressively, with a small decrease in 2018 (negative year for market indices). In the same period, less than four companies were listed per year on the Borsa Italiana regulated market (MTA) signalling substantial shortcomings compared to European economies. At the end of 2018, the total value of Italian listed shares was equal to only 31% of GDP, a value significantly lower than in Germany (46%) and in France (88%) moreover, the preponderant weight of the insurance-banking branch on stock Italian stock exchange further limits the visibility of real economy enterprises. The capital market reform³¹ has the objective of fully developing the potential of European economies including the Italian one, promoting sustainable growth aimed at minimizing economic, social and political uncertainty factors. The aim is to derive maximum benefit from the reforms and to consolidate the trust of entrepreneurs, investors and families. In the financing perspective of enterprises, on average 40% of Italian companies' assets are financed by short-term debt, a much higher percentage than other European enterprises. This condition limits long term projects and increases the vulnerability of the non-financial sector to sudden credit cuts. Facilitated access to long-term capital, both equity capital and corporate bonds, is therefore essential to undertake strategic investments. This will enhance research, development and innovation, while improving the productivity of human and fixed capital of Italian companies (Çelik,

³⁰ Statistics from Borsa Italiana

³¹ Capital Markets Union is the EU initiative aimed at further deepening and integrating the capital markets of EU Member States.

Demirtaş and Isaksson, 2019). As regards bond market, at the end of 2019, securities issued by 14 Italian real economy companies were listed on the MOT regulated segment moreover, 338 additional non-financial issuers listed securities on the ExtraMOT PRO unregulated segment.

3.4 Infrastructures: an analysis of the international and Italian context

An enabling factor for economic growth and objectives achievement both at national and individual company level is the infrastructure network. Infrastructures intended as the set of complementary works necessary for carrying out an economic activity or indispensable for new urban settlements, represent both for businesses and for ordinary citizens an essential prerogative for the proper handling of daily tasks. They play a fundamental role for the strengthening and development of entrepreneurial spirit as they are able to improve companies' activities and attractiveness for investors. The implementation of infrastructural works relating to transport networks, energy supply, digital connectivity, health and tourism structures determine favorable operating conditions for businesses and citizens by increasing the degree of competitiveness of the economic system (Gervasoni, Del Giudice and Sartori, 2006).

A sufficient level of infrastructure efficiency tempers the negative effects on development deriving from the scarce endowment of some natural resources. Indeed, if a country has a territory conformation that affects trade and communications, an adequate transport network by land, sea or air and a high degree of connectivity can solve these natural obstacles (FLM, 2010). Consequently, a lack of infrastructure represents a bottleneck for the development and growth of enterprises as they are not adequately supported. The impact is even more tangible for real economy. Consider the importance of having an efficient highway network for logistics companies that transport goods across the country, or airports ready to receive a flow of incoming and outgoing goods which permits enterprises to export their products abroad. At the same time, companies operating in large-scale distribution, manufacturing and industrial production need reliable communication routes allowing suppliers to send raw materials. In particular, for the last two macro-sectors it is essential to set up factories in a position with an energy network suitable for the processes carried out.

The literature on infrastructure has committed to produce different classifications on the investments, each of which relies on a specific discriminating characteristic (Deloitte, 2018). A first definition proposed by Hansen (1965) is based on the contribution to economic development and foresees the distinction between economic (which directly support development) and social infrastructure (which indirectly support development and improve social well-being). Subsequently, Aschauer (1989) stressed the relationship between works and production process, distinguishing core infrastructures

(which play a decisive role for economic growth, they are typically regulated infrastructures) from non-core infrastructures (they are the residual component). The concept of immobility, indivisibility, non-substitutability and versatility has been employed by Biehl (1991) to distinguish network infrastructures (infrastructures built on a network and characterized by a greater degree of immobility and indivisibility) from core infrastructures (point systems such as hospitals and power plants). Finally, Istat in 2006 addressed the infrastructure theme by proposing a classification based on ATECO codes connecting each type of infrastructure work to a specific economic activity. Infrastructures are therefore divided into three categories:

- Economic works which encompass transport and energy networks;
- Social works which include health, education, cultural and environmental infrastructures;
- Structures of the territory works which include tourist accommodation, trade and monetary intermediation structures

Ascertained the importance of infrastructure works for the development of the country's economy and the well-being of citizens, it is interesting to analyze the actual Italian public expenditure in the past 20 years. The economic crisis that affected European countries produced a tendency to reduce the share of infrastructure investments compared to GDP, but the contraction seems to have been particularly marked in Italy.

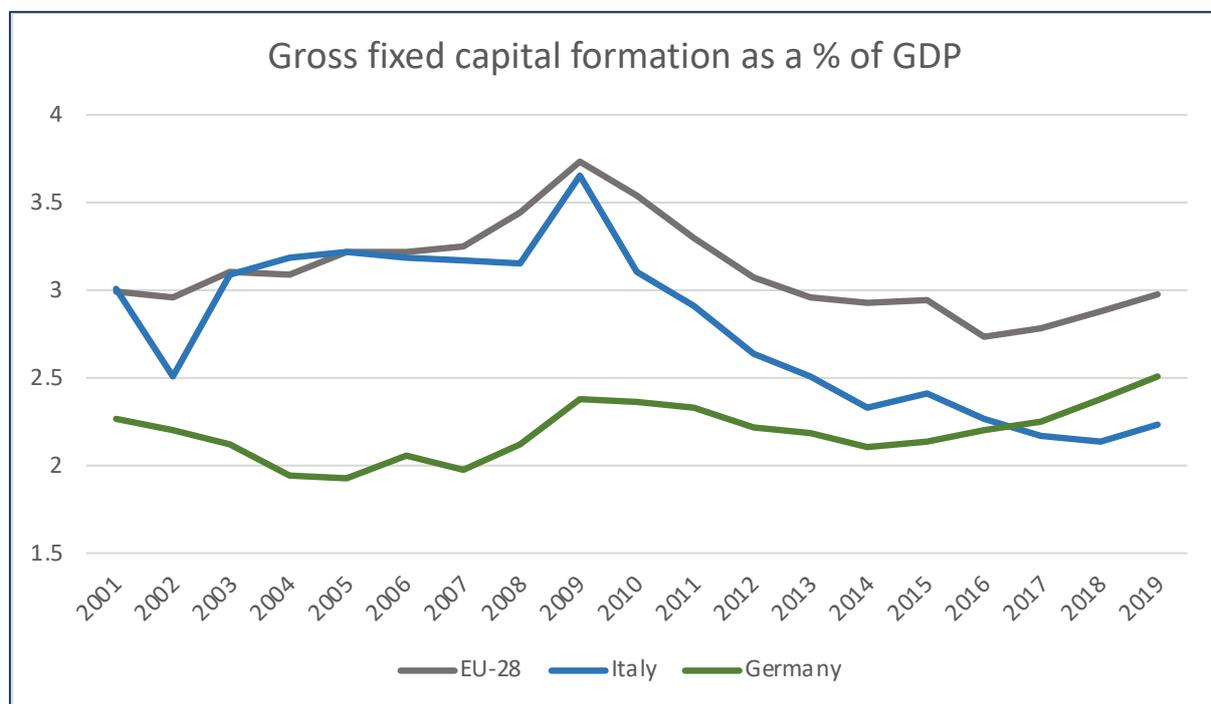


Figure 28: Gross fixed capital formation by general government as a percentage of GDP (% on the axis). Source: Ameco database

As figure 28 shows, before 2009 the weight of infrastructure investments over Italian GDP was similar to the European average, standing at around 3.25% of GDP in the period between 2003 and 2008.

In 2009, general government gross fixed investments amounted to € 51.6 billion, equal to 3.66% of GDP, the higher incidence compared to previous periods was driven by the sharp drop in GDP (decreased by -3.7%). In absolute terms, public investment spending decreased from € 51.6 billion in 2009 to € 39.7 billion in the following 10 years, a difference of € 11.9 billion in annual investments, equal to a contraction of 23%. In particular, the infrastructure endowment was affected by the deep investments contraction in the non-residential construction and civil engineering sector, even in this case more marked in the Italian territory than in the principal Member States. Since 2014, the trend towards reduced investments came to an end, but Italy, unlike other European countries, has not managed to return to pre-crisis levels yet (Assonime, 2019).

An interesting point is the comparison with investment choices of Germany, one of the countries that first managed to restore their economy after 2008. Statistics provided by the Ameco database show how before the crisis Italy and Germany invested (in absolute terms) about the same amount in infrastructure works. Consequently, the weight of investments on the Italian GDP was greater than the German one and as the German GDP was about 1.5 times greater. However, the crisis had a very different impact: in Germany the level of expenditure kept growing until 2012, while it gradually decreased in Italy where even nowadays is far from the 2009 peak. Since 2015, expenditures have accelerated in Germany, increasing by 50%, from € 60 to € 90 billion budgeted for 2020 (8% annual growth rate), while in Italy it stands at around € 40 billion per year. Therefore, the investment gap dividing Italy from other countries in both absolute and GDP terms seems to widen supporting the thesis that although for almost ten years Italy spent on infrastructure more than Germany (relative to GDP), this did not generate greater growth potential (Gros, 2019).

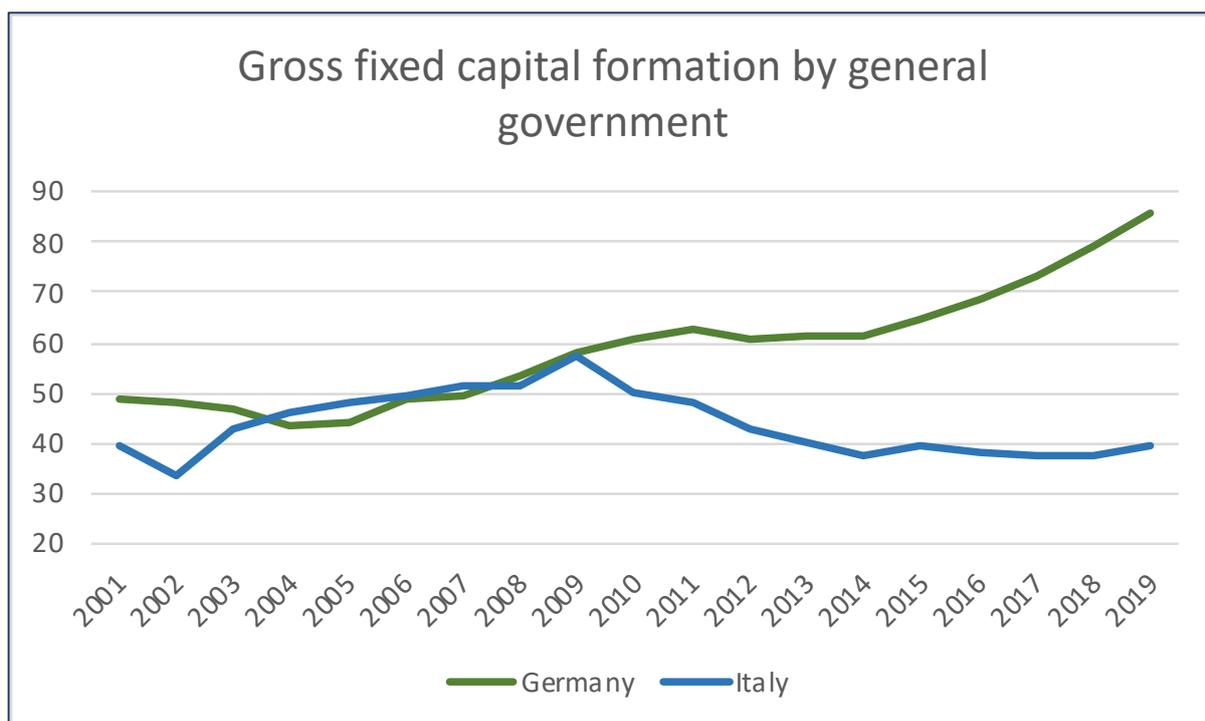


Figure 29: Comparison of Germany and Italy of gross fixed capital formation by general government (€ billion on the axis). Source: Ameco database

In conclusion, it is essential not only the commitment to invest in infrastructure works but also to perform an accurate selection of projects to be financed avoiding waste of resources and construction that do not actually contribute to the well-being of the country.

The necessity to ensure an adequate level of public works is not only an Italian concern but is of primary interest on a global level. If on the one hand the world economy expects to grow in the next 15 years especially for the expansion of Asian economies (first of all China and India), on the other hand more and more investments in public works will be needed to support expansion. The question that arises from this analysis is whether the current global level of investment is adequate or not to back actual and immediate future economic growth. The study conducted by the McKinsey Global Institute (2017) "*Bridging infrastructure Gap, has the world made Progress?*" provides indications on the extent of the infrastructure investments necessary to ensure vigorous, balanced and sustainable economic growth over a medium-term horizon. In 2015 infrastructure³² spending amounted to USD 9.5 trillion globally, equivalent to 14% of global GDP. Real estate absorbed USD 4.8 trillion, followed by social infrastructure with 1.25 trillion, transport with USD 1.09 trillion, investments in energy (USD 785 billion), oil and gas (USD 607 billion) telecom (USD 430 billion), mining (USD 270 billion) and finally in water supply (USD 236 billion).

³² The perimeter of analysis includes transport, energy, water and telecom infrastructures but even expenses related to social infrastructure, oil and gas, mining and real estate.

Regarding the geographical allocation of investments, China was the world's largest infrastructure market accounting for 38% of global spending, followed by North America with 21% and Western Europe with 17%. Moreover, India recorded a compound annual growth in real terms of 10%, followed by China with 7%, and North America with 3%. The study highlighted an infrastructure investment gap: required expenses are estimated at USD 3.7 trillion per year until 2035 in order to maintain economic growth expectations. In absolute terms, investments in energy, roads and telecommunications would require a major commitment, with an average annual need of USD 1.1 trillion, USD 0.9 trillion and USD 0.5 trillion respectively. The infrastructure problem must therefore be carefully addressed at a global level by seeking synchronization between countries in order to make the most of all the synergies that can arise by coordinating constructions of public works.

Considering now the Italian situation characterized by budget constraints that hold back public spending, it is necessary that the recovery of infrastructure expenditures starts from private investors both in terms of financial and managerial contributions.

Deloitte's survey³³ on Infrastructure Equity Investments (2018) highlighted the apparently unbalanced relationship between risks and expected returns, which often makes investing in infrastructure equity unattractive for private investors. 25% of respondents agree that these investments contribute to the provision of an essential service for society, 20% believe they operate in a context with high barriers to entry while 18% appreciate that infrastructure investments are guaranteed by tangible or intangible assets. However, private investors perceive to be exposed to a series of risks:

- Political and regulatory risks regarding the stability of the country where the asset is located;
- Macro-economic and financial risks as interest rate, the exchange rate and inflation, and variables related to market demand;
- Operational risks that concern all the factors influencing the performance of the asset in terms of quantity and quality of the service (technological risk, obsolescence).

Moreover, private investors highlighted benefits that this class of investments offers. Factors as demand stability, partial or total market monopoly (protected by regulation), and multi-year investment planning allow to generate stable and predictable cash flows (often protected from inflation as inflation-linked). Cash inflows are favored both by the long useful life of assets and by the limited incidence of operating costs with the consequent generation of a high EBITDA margin. For

³³ The survey is divided into 15 multiple choice questions and further qualitative open questions involving a total of 25 European infrastructure funds.

their social function, infrastructures offer an important opportunity for portfolio diversification as there is a low correlation between the infrastructure sectors and the debt and equity markets.

However, there are other peculiar characteristics that hinder the arrival of private capital, first of all there is the illiquid nature of the investments since the investor must commit to lock his capital for a medium-long period (often with limited exit opportunities). To this must be added a lower return than financial markets due to the characteristics of infrastructure sector itself: low elasticity of demand and high levels of regulation. In this case the tariff regulation should guarantee a remuneration to promote new strategic investments as well as the maintenance and renovation of existing works. Last but not least, is important to address the regulatory and political framework that influences public works. If on the one hand infrastructures has a social and enabling role within the society, on the other hand it is strongly exposed to political instability which can limit public investments due to budget constraints and decisions of the government in charge.

Chapter 4: Households and Real Economy

4.1 Financial accounts of Italy

A framework employed to have a comprehensive vision of relationships of assets and liabilities between economic agents in a country is represented by financial accounts. They are a national accounting instrument that explain economic connections both in terms of stocks and in terms of flow of the various agents of an economic system (Bank of Italy, 2018). Each sector is characterized by positive or negative net financial wealth (difference between outstanding financial assets and liabilities), positive net worth sectors are known as financial surplus agents while negative net worth sectors are financial deficit agents seeking sources of funds.

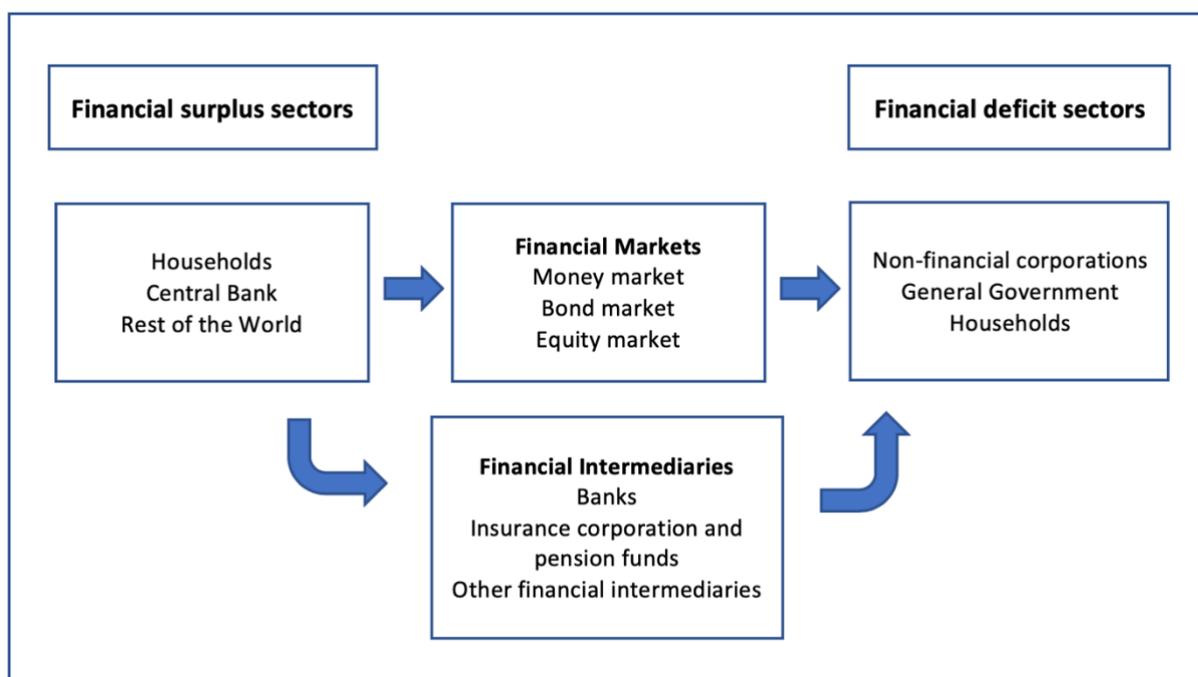


Figure 30: Financial circuit. Source: Bank of Italy, 2018

In the financial circuit framework (figure 30), flow of funds from surplus sectors can be exerted through two main channels:

- through direct channel represented by financial markets, as the money market, bond market and equity market, where supply meets demand.
- through the channel intermediated by financial operators as banks, insurance companies or other financial intermediaries who actively intervene with their own balance sheet in trading operations.

The interpretation of the tool permits to understand what class of financial instrument is employed as main financing source for each economic actor as well as to identify the degree of financial intermediation. The ECB and the Federal Reserve apply the framework to improve their economic and monetary analyses to maintain price stability; both Ben Bernanke and Mario Draghi have repeatedly stressed the importance of having significant statistics to build up a solid analysis and formulating monetary policies both nationally and internationally (OECD, 2017).

Financial accounts alongside with other economic accounts compose national accounts, defined as the set of all the economic accounts describing the economic activity of a country or a territorial district³⁴.

National accounts systematically present the economic and financial flow as well as the outstanding amount of real and financial assets. Since the flow of funds revolves around the concept of national income and the stock of assets is linked to national wealth, national accounts are even intended as a comprehensive representation of income and wealth statistics.

Non-Financial Assets	Financial Liabilities
Fixed assets Dwellings Non-residential properties Other fixed assets Warehouse stocks Cultivated land Valuable objects	Currency and deposits Debt securities Loans Shares and other equity Insurance, pension and standardised guarantees Other financial liabilities
Financial assets	
Monetary gold and SDRs Currency and deposits Debt securities Shares and other equity Insurance, pension and standardised guarantees Other financial assets	
Net worth	

Table 3: Balance sheet of institutional sectors. Source: Bank of Italy, 2018

Real accounting is composed of a series of accounts divided into resources and purposes; therefore, they record the amount of goods and services produced, consumed or saved by a country. In addition to the real accounting, financial accounts show the incoming or outgoing resources between sectors

³⁴ Definition provided by Istat

in deficit and sectors in financial surplus. In terms of stocks, however, financial accounts and real assets accounts constitute the balance sheet which, as the balance sheet of a company, exhibits the wealth of a country (or institutional sector) at the end of a period.

The balance sheet at the end of the period is obtained starting from the balance sheet of the previous year and adding changes that occurred during the current financial year due to both real operations (registered in the capital formation account) and financial operations (recorded in the financial accounts). The sum of real and financial assets composes total assets of a given institutional sector, furthermore, by subtracting the financial liabilities the net worth is obtained.

By following the classification of financial accounts based on ESA 2010³⁵ directives and applying it to the Italian reality according to the indications of the Bank of Italy, it is possible to highlight all Italian institutional sectors:

Non-financial corporations

- Public and private corporations

Financial corporations

- Monetary financial institutions (*Bank of Italy, banks, money market funds, Cassa Depositi e Prestiti*)
- Non-monetary mutual funds
- Other financial institutions (*Brokerage firms, SICAV and Asset Management Companies*)
- Insurance corporations and pension funds

General government

- Central government (*Treasury and State administration, ministries, other entities*)
- Local government (*as Regions, Provinces and Municipalities, Local Health Authorities*)
- Social security funds (*for instance INPS, INAIL*)

Households and non-profit institutions serving households

- Producer households and non-profit institutions serving households (ISP)
- Consumer households

Rest of the world

- Non-residential units

³⁵ The European System of National and Regional Accounts (ESA 2010) is the newest internationally compatible EU accounting framework for a systematic and detailed description of an economy.

4.2 Definition of Institutional sectors

The following definitions for each institutional sector are provided by Bank of Italy.

4.2.1 Non-financial corporations

The sector includes institutional units that produce and sale non-financial goods and services. Alongside the classification based on the type of activity performed³⁶, Bank of Italy and ISTAT discriminate even the legal form of the corporation. This sector includes public and private corporations, cooperative companies, public companies with legal personality, non-profit institutions and associations serving of non-financial companies, with legal personality, whose main function is to produce non-financial goods and services. The sector covers both private and public companies, the latter are public non-financial corporations with revenues large enough to cover at least 50% of production costs on a permanent basis, these companies have public legal nature or are controlled directly or indirectly by public administrations. In addition, the category includes simple companies, de-facto companies, sole proprietorships³⁷ employing more than five workers.

From the financial accounts of first half of 2019 it is possible to highlights how the main source of financing is represented by equity issuing with € 1,818.1 billion (of which 80% by unlisted shares) followed by loans (€ 1,067.06 billion) mainly granted by resident monetary financial institutions (€ 658.81 billion). Financing options through the bond channel are limited to just € 151.8 billion, and even capital market exposure is limited to € 360.4 billion (one fifth of unlisted shares outstanding amount).

4.2.2 Financial corporations

Financial corporation sector includes all companies and quasi-companies whose core business is providing financial intermediation services or performing auxiliary financial activities. Recalling the circuits of funds, corporations performing financial intermediation collect resources from surplus units and channel funds to deficit units providing for their capital need. They act in the middle of the indirect channel trying to improve the functioning of the market by reducing information asymmetry, transaction costs and by matching demand and supply where it does not happen independently. Their contribution is realized by generating financial assets and liabilities that are accounted in their balance sheet, for this reason they do not remain unrelated to transactions as they generate a risk for which they are directly accountable.

³⁶ The classification of economic activities ATECO is a type of classification adopted by the Italian National Statistical Institute for national economic statistical surveys.

³⁷ Are included artisans, farmers, small entrepreneurs, freelancers and generally who perform a self-employed activity

Different are operations performed by financial auxiliaries, financial players with aiming to transactions of financial instruments and the transformation or reorganization of funds. Auxiliaries do not bear any risk related to holding a financial asset or liability because they do not account financial instruments in the balance sheet. The only risk they can face is reputational related to the quality of their transactions. All financial promoters not organized in the form of companies must be classified as financial companies if they have at least one employee. The economic system of accounts offers the possibility of segmenting financial corporations into 5 different categories: Monetary financial institutions (MFI), other financial institutions, non-money market funds (Non-MMF) and insurance corporations and pension funds.

4.2.3 Monetary financial institutions (MFI)

This institutional sector encompasses Central Banking Authorities, money market funds, other resident monetary financial institutions that receive deposits, grant credits and make investments in securities for their own account and Cassa Depositi e Prestiti³⁸. Monetary funds are a particular type of mutual fund characterized by high liquidity investments in Italian and foreign government bonds and as well as short term debt securities of private issuers; these funds encompass both a limited risk exposure and limited remuneration.

Unlike all other resident sectors, MFI hold monetary gold and special drawing rights (SDRs). Monetary gold amounts to € 104.8 billion and represents a monetary reserve held by the Bank of Italy while the special drawing rights (SDRs) are international reserves created by the International Monetary Fund and assigned to its members as a supplement to the existing reserves³⁹.

The MFI are units in financial surplus with a net worth of € 292.27 billion, most of their assets are employed through loans for an outstanding amount to € 1800.6 billion, they are directed for € 658.1 billion towards non-financial companies and € 630.9 billion towards households. Their exposure to debt securities is slightly more contained, for which they employ € 1,404.77 billion, of which 59% towards bonds issued by general government and only 3.2% towards bonds of real economy. Investments in risk capital were marginal with only € 170.97 billion employed (of which € 35 billion in listed shares and € 135.9 billion in unlisted shares), in particular 95% of the total is carried out by banks, money mutual funds and CDP.

³⁸ Following the October 2007 reclassification, Cassa Depositi e Prestiti is included in the sector of Monetary Financial Institutions while before it was intended as financial intermediary

³⁹ According to ESA 2010, Rest of the World is provided as counterparty for Monetary gold and SDRs

4.2.4 Investment funds distinct from money market funds

The segment is composed by mutual investment funds performing financial intermediation as core business, except for money market funds. Their activities consist in issuing quotas and to make investments on their own account mainly in long term financial assets and non-financial assets (generally real estate). The most prevalent category of funds in Italy consists in assets without legal personality, divided into shareholdings, whose administration is entrusted to companies that provide for their investment in financial instruments (Asset Management Companies), credits or other properties.

4.2.5 Other financial institutions

Other financial institutions sector includes both financial intermediaries and financial auxiliaries.

Financial intermediaries provide financial intermediation services as core business by bearing liabilities in forms different than money, deposits (and similar instruments) and insurance technical reserves. The actors in Italy belonging to the sectors are: securities brokerage companies (SIM in Italian), public and private financial holding companies, banking foundations, merchant banks, leasing companies, factoring companies, consumer credit companies, investment companies with variable capital ("*SICAVs*" in Italian) and collective investment institutions ("*OICR*" in Italian).

Financial auxiliaries are institutional units whose main function is to exercise activities strictly related to financial intermediation without involving their own balance sheet. Actors in this category are fund management companies, fiduciary administration companies, institutions responsible for the functioning of the markets (for instance Monte Titoli Spa, Borsa Italiana spa, the Compensation and Guarantee Fund), banking and financial companies' associations, stockbrokers, brokers, consultants and financial advisors. In addition, are included the Central control authorities of the financial markets (CONSOB), the Institute for insurance supervision (Ivass) and the Commission for the supervision of pension funds (Covip). The main difference between financial intermediaries and financial auxiliaries relies in the assumption of risk: the former risk on their own, while the latter perform services to facilitate intermediation, without assuming the risks.

4.2.6 Insurance corporations and pension funds

Insurance corporations are entities whose core business is transforming individual risks to collective risks, normally building up insurance technical reserves; their main source of revenues is represented by contractual premiums. Different are pension funds, financial intermediaries whose intermediation activity is conducted by pooling the risks and needs of clients. Like social insurance systems, they provide a source of income for retired workers as well as benefits in case of negative events as death or disability. The insurance and pension funds sectors are characterized by collecting revenues advanced to costs, indeed policyholders pay premiums at a defined rate to be covered by any future disbursements. Insurances and pension funds mainly invest in bonds (€ 621.4 billion) and mutual funds (€ 222.64 billion) to build up the technical reserves of policyholders, in particular the portion relating to Italian government securities has reached € 342.93 billion in the second quarter of 2019. However, political imbalances, volatility, economic slowdown and new Solvency II rules are leading Italian insurance companies to review investment policies on Italian public debt (Martino, 2019) toward a major geopolitical diversification. The Italian National Insurance Association (ANIA) shows that investments in Italian government securities (held for linked and non-linked policies) went from € 336,107 million in 2015 to € 307,965 million in 2018, while in the same period the flow of investments towards foreign government securities amounted to + € 21,877 million. Even pension funds at the end of 2018 reduced their exposure to Italian public debt, passing from a portfolio share of 22.7% in 2017 to 21.4% at the end of 2018 against an increase in investments in foreign government securities (COVIP, 2019).

4.2.7 Public administrations

The public administrations sector includes institutional units producing goods and services for satisfying collective needs and for redistributing income and wealth to the country. A product or service to be classified as not intended for sale, must have revenues of less than 50% of the production costs. The main source of revenues for this category is represented by taxes, duties and social security contributions paid by the other institutional sectors. It is possible to segment this sector into three categories: central administrations, local administrations and social security and welfare agencies.

Central administrations are all the administrative bodies whose competence and power are extended to the whole territory (except for central social security institutions) including non-profit institutions controlled and funded mainly by central administrations.

Local administrations are the group of entities operating in a defined portion of the country (excluding local social security institutions) including non-profit institutions controlled and financed mainly by local administration. The category comprehends regional and provincial administrations,

metropolitan cities, municipal administrations, unions of municipalities, bodies that produce health services, bodies that produce economic and regulatory services and even universities, public education institutions and charitable institutions.

Finally, *social security and welfare agencies* comprehend both central and local units (INPS, INAIL, INPDAP and others) committed to provide social benefits.

4.2.8 Rest of the world

Here are represented all non-resident units that carry out operations or have some sort of economic relations with residential players. The accounts of this sector summarize all economic relations between Italy and the rest of the world.

The Rest of the world sector is internally consolidated so relations between non-residents do not appear either as assets or as liabilities.

4.3 Savings of Italian households

4.3.1 The total wealth of Italian families

Households represent the ultimate source of financing in the economy of each country, money in the hands of households reaches companies of any category through direct financing that can take the form of bonds or equity (among the most common), or through indirect financing in which financial intermediaries convey the savings of families to sectors that require financing.

In this category, consumer families and producer families can be distinguished, the former are classifiable as a group of individuals in their function as consumers, while the latter represent individuals identifiable as entrepreneurs, who produce goods and services (financial and non-financial services) for sale. This category includes workers, employees, pensioners, taxpayers, beneficiaries of other transfers and sole proprietorships with up to five employees.

Within the institutional sector of households, private non-profit social institutions serving families (ISP hereafter) are also included, this category comprehends ecclesiastical and religious institutions, political parties and auxiliary organizations (as youth organizations associated with a political party), trade unions and associations for trade union purposes, and professional orders.

Total household wealth is constituted by the financial and non-financial assets, known as real assets; real wealth mainly consists of dwellings, non-residential properties and cultivated land, in particular dwellings nowadays make up almost 85% of the entire non-financial wealth.

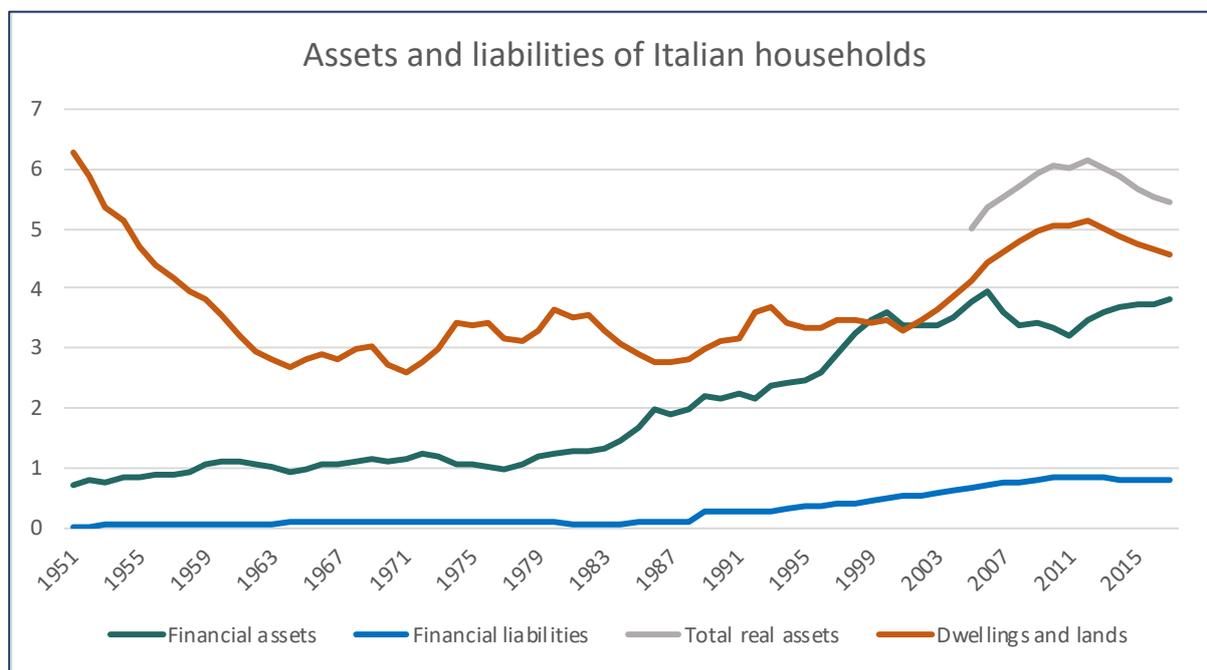


Figure 31: Timeline of assets and liabilities of Italian households in proportion of disposable income. Source: Caprara, De bonis and Infante, 2018.

Figure 31 shows how the composition of total wealth has changed in the past 70 years in relation to disposable income. In the still predominantly agricultural economy of the 1950s, housing and land represented the main form of wealth, they were worth more than 6 times the disposable income compared to the limited role of financial wealth that was even lower than disposable income itself (Caprara, De Bonis and Infante, 2018). During the 60s a growth of financial wealth was recorded; it has persisted steadily over the following decades in the face of a sharp reduction of real wealth deriving from housing price which halved in value.

The figure highlights how the financial wealth has always been lower than housing wealth except for a short period at the beginning of the new millennium marked by the boom of the world stock exchange, confirming how the Italians consider the purchase of the house a solid and safe investment. In 2017, real wealth stood at 5.47 times disposable income while financial wealth was 3.81 times; considering also households' financial liabilities, the estimate of total net worth represented 8.5 times the disposable income.

The other components of households' real wealth play a marginal role compared to dwellings, in 2017 housing was worth 83.8% of the entire real wealth while other non-residential properties were 10.8% (Istat 2019).

Other fixed assets accounted just for 1.4% of the total, the category includes processing plants and machinery, means of transport, cultivated biological resources and intellectual property rights. The last component concerns warehouse stocks with a weight of 0.4% and cultivated land with 3.6%. Of the real components mentioned, consumer families account for of dwellings and cultivated land only since they do not own non-residential properties, other fixed assets or warehouse stocks.

Figure 32 points out composition of households' financial wealth from 1950 to the 2019, grouping financial instruments into 6 main classes: deposits and currency, debt securities, equity instruments, investment fund shares, insurance pension funds and standardized guarantee schemes and other

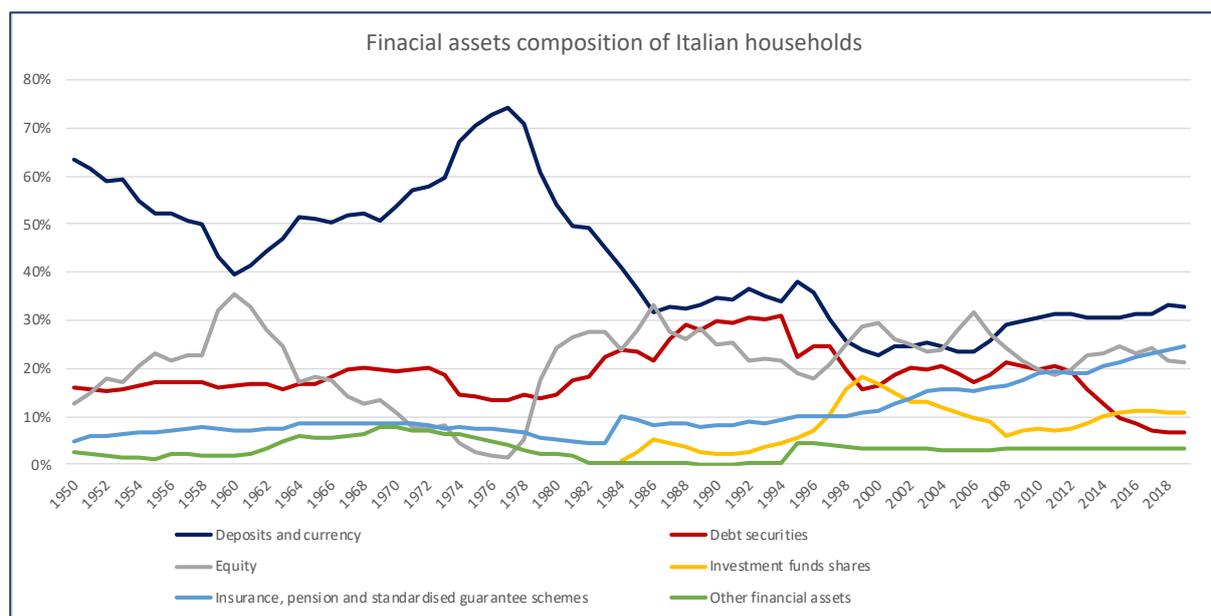


Figure 32: Timeline of financial assets composition of Italian Households. Source: Caprara, De bonis and Infante, 2018

financial assets. The composition of the financial portfolio is influenced by various factors, both cyclical and structural (Caprara and De Bonis 2017); among the most significant there is the level of interest rates, the taxation of financial instruments, the performance of the stock markets, the agents' propensity to save and consume, the risk propensity, the policies on supply of products by banks and other intermediaries, the centrality of banks with respect to the size of the financial markets and even the conditions of public pension systems. Furthermore, the stock value of each component depends on two fundamental phenomena: market fluctuations and the variation of new wealth flows. Every year financial resources are added or removed by households; new wealth can come from the liquidation of real wealth which is then reinvested in financial instruments. However, even financial instruments can be liquidated to facilitate the acquisition of real assets and in this case, households are decreasing their financial portfolio value. This phenomenon is commonly called flow effect.

The market effect, on the other hand, concerns the appreciation or depreciation of financial instruments according to market conditions and it is also the cause of portfolio rebalancing in favour

of one financial instrument to another based on their present and expected value. Discerning the contribution of the market effect from the flow effect to analyse the trend of financial wealth and its composition is not simple as the two factors are closely connected, dependent on each other and are influenced by other macroeconomic and political aspects.

Households' financial portfolio experienced deep modifications; the financial wealth over the past 70 years has seen a reduction in value of currency and deposits, passing from more than 60% to around 33% in favour of other products including equity and asset management products which have seen their contribution increase to over 30% in recent years. Asset management products are classified as insurance products, pension funds and mutual funds shares that allow the saver to invest in a diversified basket of securities offering attractive returns. The methodological note of financial accounts provided by Bank of Italy specifically explains the characteristics of each financial instrument in order to uniquely identify its boundaries; the subsequent definitions in this paragraph refer to the aforementioned methodological note.

4.3.2 An overview of households' financial assets

Currency and deposits

The component that still represents the most important portion is represented by currency deposits which in the second quarter of 2019 accounted for 32.9% of the total financial wealth. The instrument accounts for € 1,421,800 million, of which € 160,400 million in currency and € 1,261,400 million in deposits. As currency are intended all the banknotes and coins issued by resident monetary authorities in possession of resident and non-resident agents, and banknotes issued by non-resident authorities in the hands of residents. Deposits are both transferable deposits (immediately convertible into money and used for payments) and non-transferable deposits, for which instantaneous conversion into money is not possible. Term deposits are included in this latter category (i.e. deposits available only at an agreed maturity), as well as savings deposits, savings books and short-term repurchase agreements. The classification of deposits also includes postal deposits as Poste Italiane offers its own form of bank deposit even though it is not a bank.

Deposits	2017	2018	Q2 2019
located at MFI	87.5%	88.2%	88.5%
located at Government	6.1%	5.7%	5.4%
located at NFCs	3.2%	3.0%	3.0%
located at RoW	3.2%	3.1%	3.1%

Table 4: Percentage of deposits of Italian households among institutional sectors. Source ECB Statistical warehouse

Deposits represented the primary component of financial wealth over the decades except for moments of strong stock market expansion and before the financial crisis in which bonds and equity recorded a higher value. One out of two families in Italy holds all their financial wealth in deposits (Prometeia, 2020), a capital that remains confined in bank accounts at no zero-cost as it is estimated that those who have not invested in a 15-year period have lost about 30% of potential wealth in real terms. Regarding to the counterparty sectors (*table 4*), in 2019 households placed 88.5% of their deposits at MFI, 5.4% at public government institutions, 3% were placed at non-financial corporations (postal deposits) and 3.1% at deposit-taking corporations outside Italy. The composition has remained almost unchanged over the previous two years except for an increase in bank deposits (+ 1% between 2017 and Q2 2019) to the detriment of deposits placed at public administrations (- 0.7%).

Debt securities

Debt securities are negotiable financial instruments that certify the existence of a debt that the issuer contracts towards those who purchase the security. Securities are characterized by some properties as the issue and redemption date, the issuing price and the face value, the maturity, the coupon rate and the payment scheme and finally the currency the security is traded.

Debt securities can be divided into two categories in relation to their maturity, short-term securities present a maturity of less than one year while long-term securities are characterized by maturities of more than 12 months.

Debt securities	2017	2018	2019 Q2
Short term debt securities	0.11%	0.34%	0.50%
issued by Government	0.06%	0.28%	0.46%
issued by RoW	0.05%	0.05%	0.05%
Medium/long term debt securities	99.89%	99.66%	99.50%
issued by MFI	29.34%	22.68%	22.72%
issued by Government	43.09%	48.81%	49.51%
issued by NFCs	1.18%	0.87%	0.66%
issued by other financial institutions	2.52%	1.97%	1.52%
issued by insurance corp.	0.26%	0.21%	0.15%
issued by RoW	23.50%	25.12%	24.94%

Table 5: Percentage of debt securities held by Italian households by issuer. Source: ECB Statistical warehouse

Table 5 shows how long-term securities account for almost all of debt securities held by families, in the first half of 2019 they were composed for almost 50% of Italian government bonds, while the other half was constituted mainly by bank securities issued by MFI (22.72%) and other securities issued by non-residential units. Overall, debt securities only account for 6.7% of the entire wealth, the lowest figure since statistics are available, due to the marked divestment of bank bonds which in 18 months

(between 2017 and Q2 2019) dropped from € 88.74 billion to € 65.43 billion. The amount of bank bonds in the hands of families is strictly dependent on the tax incentives in place and the yields of government bonds (Coletta and Santioni, 2016).

As shown in *figure 33* from 1950 to the early '70s, the share of bank securities held by households grew steadily year by year, in 1973 it represented 58.3% of debt securities and almost 11% of all financial activities of families. In those years, the Monetary Financial Institutions often resorted to the issue of new bonds as a form of long-term financing and their placement was facilitated by the public ownership of the banks which ensured their stability. Subsequently, demand contracted due to competition from government bonds (which benefited from tax incentives on profits), competition from certificates of deposit and inflation due to the oil shocks of 1973 and 1979 so as to bring the weight of the bank bonds out of total bonds at only 5% in 1986. After the favourable period recorded in the following 25 years, the percentage of bank bonds began to decline again also to bankruptcies from 2013 onwards.

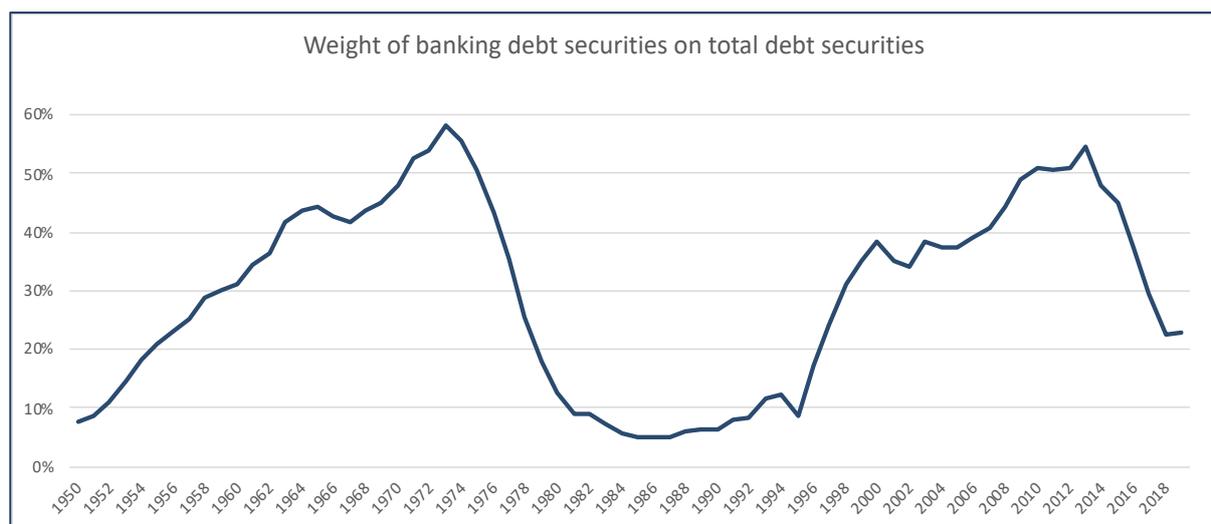


Figure 33: Weight of banking debt securities on total debt securities held by Italian households. Source: Coletta and Santioni, 2016

Equity instruments

As equity instruments are intended all equity investments in domestic and non-resident enterprises, both in listed and unlisted share. Of the € 920,360 million held in the first half of 2019, 87% regards equity in unlisted resident companies, typically private SMEs, whose ownership is maintained by the families that manage them.

Shares and other equity	2017		2018		Q2 2019	
	1,046.0	100.00%	915.5	100.00%	920.4	100.00%
Unlisted shares issued by residents	908.6	86.86%	788.2	86.10%	800.3	86.95%
Unlisted shares issued by RoW	44.9	4.29%	48.5	5.29%	35.7	3.88%
Listed shares issued by	92.5	8.84%	78.8	8.61%	84.4	9.17%
NFCs	38.4	3.67%	31.6	3.45%	31.3	3.41%
MFI	12.6	1.21%	8.2	0.89%	8.1	0.88%
Other financial institutions	0.9	0.09%	0.7	0.08%	1.4	0.15%
Insurance corp.	3.1	0.30%	2.7	0.30%	2.9	0.32%
RoW	37.4	3.57%	35.7	3.90%	40.6	4.41%

Table 6: Values of equity instruments held by Italian households by issuer (€ billion). Source: ECB Statistical warehouse

The wealth held in equity and equity investments reached a weight of 35% in the 60s and then recorded a drop and a consequent growth since the end of the supported by Consob's⁴⁰ interventions and corporate governance reforms. In the first half 2019, the weight of the shares stood at 21.3% of financial assets, representing the third preferred instrument by Italian families to invest their assets after deposits and insurance instruments.

In an international perspective, *figure 34* shows the importance of listed shares held by households as a percentage of the total financial assets of Italy, France, Spain, Germany, Canada and UK at the end of 2018. The figure clearly highlights how the contribution of listed shares in the hands of Italian families represents just 1.7% of their total financial assets while in the main European countries it

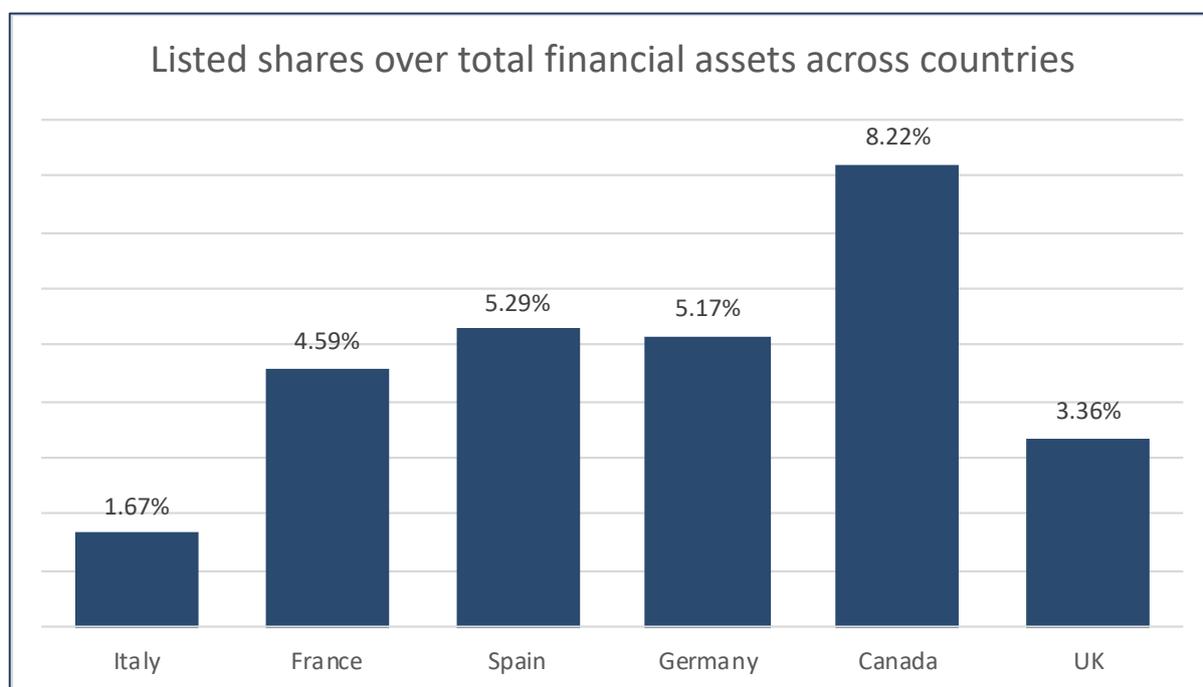


Figure 34: Importance of listed shares as a percentage of financial assets of households across countries. Source: OECD Statistics

⁴⁰ The National Commission for Companies and the Stock Exchange is the entity aimed at investor protection, efficiency, transparency and development of the Italian securities market

stands at values between 3% and 5%. In countries with a more developed stock market and with a more in-depth financial culture as Canada and the US, the importance of listed shares exceeds 8%, more than 4 times the value recorded in Italy. Of course, each country has a certain type of investment structure in relation to the policies in place and historical preferences. For instance, in the United States shares and participations are always been most important financial instrument in the household portfolio while in the United Kingdom around 55% of households' financial resources are absorbed by pension and insurance instruments.

Investment fund shares

Italian mutual funds were introduced in Italy with law n. 77 of March 23rd, 1983 (although already in 60s were available solutions inherent in foreign investment funds), offering Italian savers a new diversified and low risk investment opportunity. In the 70s, foreign mutual funds had proven to be a good form of investment to counter the high inflation that eroded savers' deposits. A particularly favorable collection cycle dates back to the late 1990s in which a series of factors favored the growth of the Italian and foreign mutual funds sector in Italy (Coletta and Santioni, 2019). These factors are due to an improvement in the legislation on mutual funds⁴¹, a decrease in interest rates, a more mature financial culture of savers towards diversified products and the favorable period on the stock exchange due to the dot-com bubble. The following years have experienced a marked reduction of household investments in Italian funds in favour of foreign ones; since 2013 foreign funds have become the most important foreign asset in households' financial wealth and, since the beginning of 2017, they overcome in value domestic funds. The advantage of investing in foreign funds relies in the fact that Italian households increase the geographical and sectoral diversification of their financial portfolios. From 2007 to 2017, investments in foreign mutual funds increased by € 180 billion, confirming the cross-border effect of capitals moving outside Italy, mainly through indirect investments in bonds and foreign shares issued by intermediaries. (Coletta and Cardillo, 2017). Political instabilities of 2018 have intensified this phenomenon and more and more households are considering moving part of their capital abroad (Franceschi and Longo, 2018). In 2018 Italy was the fourth country in the world in importance of mutual funds over household financial assets on an equal footing with the United States (11.5%)⁴². The ranking sees Canada on the top (19.9%) followed by Belgium (14.7%) and Spain (13.9%). In 2019 investments in mutual funds represented 11% of total financial wealth, in particular 56.1% of the shares of mutual funds in the portfolio are referred to

⁴¹ The regulation in exam is the Legislative Decree of February 24th, 1998 n. 58 (Consolidated text of the provisions on financial intermediation).

⁴² OECD statistics

quotas of foreign mutual funds, 42.9% were shares of Italian non-monetary mutual funds, while approximately 1% were represented by quotas of mutual funds issued by resident MFI.

Insurance, pension and standardized guarantee schemes

Insurance reserves, pension funds and standardised guarantees all together weighed 24.8% of total financial wealth of Italian families at the first half of 2019. In particular, of the € 1,069,200 million of assets, 72.6% was represented by life insurance reserves, 24.5% by pension funds' investments and only 2.8% by non-life technical reserves and reserves for the enforcement of standard guarantees. The first category includes the net rights of families on the life reserves of insurance companies that will receive in case of life-related accidents. Net rights are calculated on the basis of premiums paid, cumulated interest and adjusted for the costs managing costs, benefits and other procedures. Within the category of pension funds are included even retirement funds and the severance pay. Regarding the technical provisions of non-life insurances, these include the premiums paid for the following year and the compensation for claims that have occurred but have not been settled yet. Standard guarantees, on the other hand, are provisions usually built up by public administrations and financial companies (acting as guarantors) in anticipation of payments for covering guarantees. The incidence of insurance and pension reserves on financial wealth has remained almost unchanged from 1950 to the early '90s just below the 10% threshold; subsequently it began to increase at double-digit annual growth rates, exceeding the symbolic threshold of 20% in 2010. The root cause has to be found in public pension system reforms of the 1990s (Caprara, De Bonis and Infante, 2018) which promoted the diffusion of pension funds and private insurance as a complementary tool to public pension provision. Among the most important reforms⁴³ there is the Amato reform of 1992 (D.L. 503/1992) which raised the retirement age and extended the contribution period, and the Dini's reform of 1995 (law 335/1995) through which the pension system switched from a retributive regime to a contributory regime. The concerns following these reforms were related to the decrease in household consumption to compensate for both reductions in actual pension payments and increased uncertainty about their future claims. Zollino's analysis (2001) in the dissertation "*Personal savings and social security in Italy: Fresh evidence from a time series analysis*" underlined how the corrective measures made since the 90s contributed to depress expenditures of Italian households; however, social security wealth exerted a much weaker effect on long-run consumption demand than real and financial assets. The situation resulted in a low degree of substitution between pension and conventional wealth.

⁴³ Information from COVIP, "*The evolution of Italian Pension system*"

Other financial assets

This last category includes all the other financial instruments not mentioned above, they are employee derivatives, stock options, loans granted by households and other financial assets. The employee derivatives and stock options in the first half of 2019 stood at € 1.1 billion, a part is composed by derivative contracts recorded at fair value and held by natural persons as forwards, futures, options, swaps and forward rate agreements. The other component is constituted by employee stock options, agreements between employees and the company through which employees have the right to purchase shares of the enterprise for a pre-established price and on a certain date (or at pre-established time intervals). Loans granted by households amount to € 13.8 billion and refer to loans granted to cooperatives that are included in the sector of non-financial corporations. Lastly, households have other financial assets for a total of € 130.1 billion, they concern financial credits created with a counterparty regarding financial or non-financial transactions and characterized by the presence of a time span difference between the moment in which the transaction takes place and that of its effective regulation. They are divided into trade receivables in favour of producing households and other receivables for the displacement between cash flows and accruals relating to taxes, duties, social benefits and other transfers.

4.3.3 Financial liabilities

In order to present a comprehensive picture of financial stock of households and NPISH, it is necessary to examine the situation of financial liabilities. The most influential component is represented by loans granted by MFI which made up 67% (equal to € 631 billion) of all liabilities in the first half of 2019. Loans granted by intermediaries and financial auxiliaries amounted to € 93 billion while loans from public administrations and insurance corporations cover a more marginal role with a contribution of € 1 billion and € 5.9 billion respectively.

Household balance sheet also recorded € 38 billions of liabilities relating to insurance instruments and approximately € 179 billions of other financial liabilities concerning tax offsets and payments not yet performed regarding transactions that have already taken place. In the 18 months between the end of 2017 and first half of 2019, household liabilities increased by just 2.2% from € 926.5 billion to € 947.6 billion mainly driven by the contribution of loans granted by auxiliaries and financial intermediaries which increased by 30%.

4.4 The Private Banking context

Global financial wealth in 2018 reached USD 188,000 billion with an average growth of 8% per year since the 2008 crisis (AIPB, 2019-a). Before the financial crisis, the CAGR stood at 11% and forecasts

indicate a further flattening of the growth trend by 2022. Globally, financial wealth belonging to private households exceeded retail wealth in 2018 representing 51% of global financial wealth equivalent of USD 96,000 billion. In Italy, the private banking market can be defined as the set of operators offering personalized financial portfolio management services and / or advanced financial advice to individuals who have a portfolio⁴⁴ of activities of at least € 2 million including banking assets, insurance assets as well as real estate (AIPB, 2018). Financial portfolios of private clients include liquidity, debt securities, listed shares, assets under managements (both individually managed and mutual funds shares) and life insurance products. Therefore, unlisted shares, other equity, severance pay and non-life insurance products are assets not managed by private operators and so do not account as investable wealth. In the first half of 2019, the private banking sector in Italy was accountable for € 844 billion of assets, an increase of 6% compared to the previous six months, confirming of how the private market manages to increase the value of its assets under management at a higher rate than operators managing retail customers (+ 2.6% in the same period).

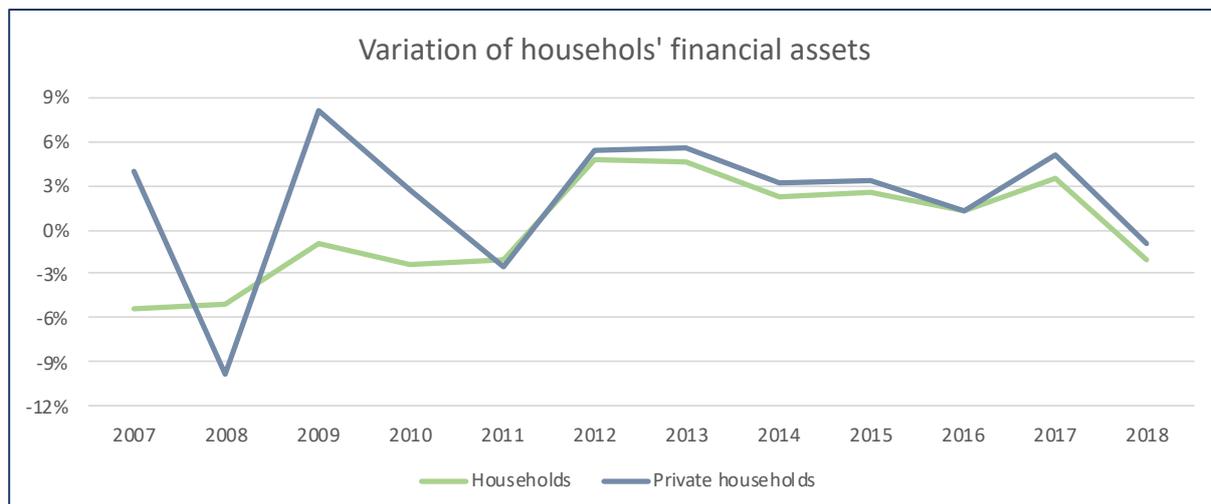


Figure 35: Annual variation of financial assets of Italian households and private families. Source: AIPB, 2018

Figure 35 shows the annual percentage change in the wealth of private households and households as a whole. After a significant loss of 9.8% between 2007 and 2008 almost exclusively due to the market effect, private bankers managed to gather performance on average higher than the whole households' sector. The difference is particularly marked in the two-year period 2009-2010 during which were recorded increases of 4.7% and 2.7% (mainly thanks to new wealth flows) against negative variation recorded by the whole sector.

⁴⁴ Are considered personal portfolio, family portfolio and portfolio of activities related to the professional or entrepreneurial work

Private households have an average financial portfolio of € 1.7 million and presents consistent differences in asset allocation compared to the average household portfolio.

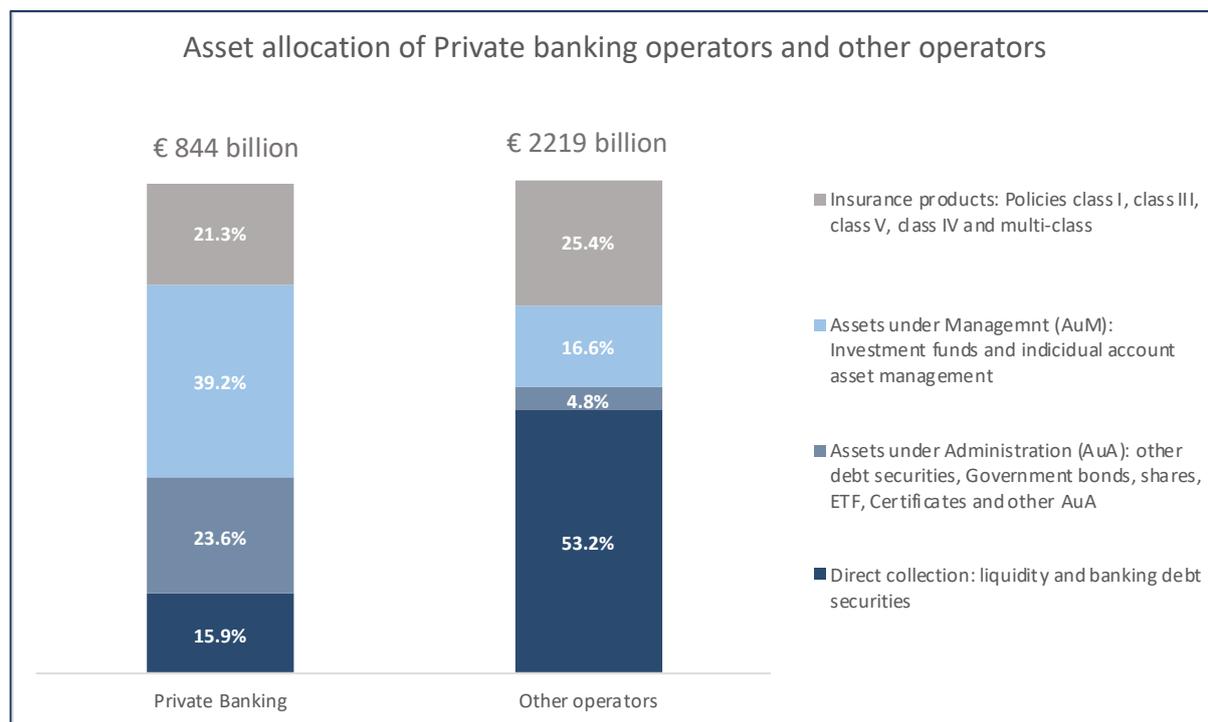


Figure 36: Asset allocation of Private Banking operators and other operators in H1 2019. Source: AIPB

Private households’ portfolio record 16% of liquidity and bank debt securities compared to 52.3% in the portfolios of retail families who prefer keeping half of their investable wealth in deposits that can be immediately converted into cash. In private portfolios, administered and managed assets weigh 23.6% and 39.2% respectively, while in retail only 4.8% and 16.6%. On the other hand, the component of insurance products is similar, covering 21.3% of private portfolios and 25.4% of retail ones. The difference between the two portfolios appears evident. If on the one hand private households prefer investments in managed and administered instruments, on the other, retail families do not take full advantage of managed assets and keep most of their savings in liquidity or instruments with limited profitability.

The AIPB Report in collaboration with Censis⁴⁵ (2019-b) suggests how the potential of private banking, in a recovery situation as the current one, can be useful for moving capitals towards investments in infrastructures, a key resource capable of improving the business environment. However, private clients highlighted several factors that hamper this move. Besides the illiquid nature of infrastructural investments, one out of three private clients expressed concerns about blockage and delays in infrastructure work, 29% of respondents also stressed the risk of a non-economic return on the investment and 27.4% expressed an excess of bureaucratic intrusiveness. Considering these

⁴⁵ Censis is an Italian socio-economic research institute

impediments, 35.3% of private families would be willing to invest part of their capital in infrastructure and public works such as schools, hospitals but also in works aimed at alternative energies. The 70% of the private clients consider very or quite important to generate value for the country. In particular they pay attention in helping the real economy to generate employment and income, to enhance their territory and the communities they belong to, protecting the environment and improving people's quality of life (Itinerari Previdenziali, 2019). Prof. Brambilla, President of the Social Studies and Research Centre of Itinerari Previdenziali, stated that investing in the real economy, socially responsible, would give the private banking sector a social role that could significantly improve its image by removing its elite labelling. Regarding the time horizon of investments, only 36% of the private customers interviewed were willing to invest part of their capital for 10 years, in exchange for higher returns and / or tax incentives, and 43% of them would invest a share of their assets between 6% and 10% (AIPB, 2019-c).

4.5 Research questions

The previous chapters have univocally defined the concept of real economy in Italy, defining it as the set of all non-financial industries identified by ATECO codes, excluding just sectors K, O and U and including real estate and infrastructure. The different players operating in the financial circuit have been identified through the classification present in financial accounts based on ESA 2010, they are briefly grouped into 5 categories: non-financial companies, financial companies, public administration, households and NPISH and the rest of the world. Finally, financial instruments negotiated by institutional players were analysed considering that each sector adopt certain types of financial instrument to undertake their investments.

Considering the importance of households in the financing framework of non-financial companies in Italy, the report addresses the following research questions:

- 1. What is the amount of direct and integrated investments of Italian households toward Italian real economy represented by resident non-financial companies and how has the situation changed in the last 18 months?*
- 2. What was the contribution of Private families and how does it differ from the contribution of the households sector as a whole?*

Both questions will be addressed through the construction of a model that estimates the contribution of household to the real economy with the integration of some hypotheses. Furthermore, in answering research questions, will be addressed even the contributions that Italian families towards

other institutional sectors, if they promote or hinder the flow of funds to Italian non-financial companies.

4.6 Construction of Dataset

As explained in the previous paragraphs, financial accounts represent the accounting tool that best summarizes the flow of investments within a closed system. For the analysis of the investments, financial accounts in the database of the European Central Bank were employed, integrated with information gathered from Bank of Italy's database. If necessary, hypotheses were formulated with the aim of uniquely attributing the flow of investments from one institutional sector to another.

For the purposes of the analysis, three data extractions were carried out referring to three different time points: the first extraction concerns the stock of financial accounts at December 31st 2017, the second refers to the investment stock at December 31st, 2018 and the last refers to the stock situation of the financial accounts described in the second quarter of 2019, the most recent data at the time of the start of the research (*appendix a*). Therefore, the research analysis period extends for 18 months, a time horizon sufficient to understand the trend of households' investments in the real economy in a short-medium term. Concerning data on the Private Banking sector, the research was carried out in collaboration with the Italian Association of Private Banking (AIPB) which provided statistics for the private sector with sufficient detail to be processed by the proposed model.

4.7 Definition of the model

Analysing financial accounts, it is evident the contribution of direct investments that an institutional sector undertakes toward another player simply by adding the investments in equity and bonds or other forms of direct investment. The analysis on indirect investments is more complicated, here are considered all those investments that pass through managed products or intermediaries who in turn invest in the final sector. The focus of the analysis concerns the investments of Italian households towards the real economy represented in the financial accounts by non-financial companies. In addition to the investments directly held by Italian families in NFCs, it is also possible to reconstruct the indirect contribution referring to households' financial operations on investment funds, insurance and intermediaries which in turn act as investors and supporters of real economy. Once funds have been collected by the lenders, the intermediaries can invest directly in the real economy through the market securities or in turn invest in asset management products as well as in financial instruments of other intermediaries that in turn finance NFCs. For example, Italian households own part of debt securities issued by resident banking institutions; these banks with the funds available can provide loans to non-financial companies but can also invest in mutual funds.

Therefore, households' wealth passes through banks that finance the real economy both directly through the provision of loans and indirectly through investments in mutual funds that procure financial resources to country's economy. The logic can be applied to any sector and for any instrument that invests in the real economy backed by households' savings. However, it is not straightforward to derive the specific contribution of each indirect financing to the real economy because it would be necessary to have an extremely high level of detail. Indeed, for each financial product on the market and for each intermediary, it would be necessary to know the asset allocation according to the definition of real economy previously introduced. Given the impossibility of obtaining a so precise level of detail, the methodology adopted to solve this problem employ a "*macro*" level of detail and is inspired by the input-output models developed by Leontief (1986) for the analysis of economic systems. They were employed to quantify interactions between industries of a given nation, the models are based on an input / output table that provide a schematic representation of the relationships determined by the production and circulation of goods between various internal and external sectors (imports and exports) of a national economic system.

This methodology has already been employed in the Italian context by Brioschi *and others* (1990) for the study of direct and indirect ownership in enterprise groups. By group of enterprises are meant a set of legally independent companies linked by mutual equity liaisons which can be analytically represented through the matrix of equity holdings, a square matrix in which are displayed equity investments that each company has towards the others of the group. In a group, each enterprise owns shares of other group companies and in turn is owned (completely or in part) by other companies belonging to the group. The same logic can be applied to relationships persisting between institutional sectors by considering the system that includes all sectors as a group. Therefore, each sector owns a share of the total funding of other sectors of the system (as well as financing itself) and in turn receives funding (completely or partially) from other sectors of the system (as well as itself). From here it is possible to introduce the concepts of direct financing, intended as direct investments that an institutional sector undertakes towards another sector, indirect financing obtained from indirect investments and finally integrated financing, obtained from the sums of the direct and indirect contribution.

By integrating statistics from financial accounts of the ECB database with data provided periodically by Bank of Italy, it is possible to build the source-purposes matrix that summarizes financial relationships between financial players identified as: (1) Non-financial companies, (2) Monetary Financial Institutions, (3) Financial Intermediaries and Auxiliaries, (4) Non-monetary mutual funds, (5)

Insurance Companies and Pension Funds, (6) Public Administrations and (7) Rest of the World. The households sector instead, represent the financial player outside the group for which the vector of integrated contribution will be computed.

4.8 First research question

4.8.1 Hypothesis development

In order to implement the model and applying it to the context of the financial accounts, was necessary to formulate hypotheses in situations where was not possible to uniquely identify the flow of funds from one institutional sector to another.

In particular, the level of detail proposed in the financial accounts regarding the unlisted shares and other equity investments was not sufficient to univocally allocate the investments between the various sectors. Considering that the distribution of the unlisted shares issued by the RoW and held by each resident sector was easily obtainable integrating statistics of Bank of Italy, the assumptions concerned just unlisted equity holdings issued by resident units (*appendix b*). Regarding equity investments of non-financial companies, has been assumed that they are totally attributable to other non-financial companies; therefore, unlisted shares held NFCs refer only to the rest of the world and to the Italian real economy. For the equity participations held by MFI, a portion of approximately 65% of the shares issued by residents refers to NFCs while the remaining part is divided between insurance corporations, other intermediaries and financial auxiliaries and in participations of others MFI. A similar proportion was implemented for financial intermediaries and auxiliaries. Non-monetary mutual funds instead employ around 50% of their investments in unlisted equity towards the Italian real economy, hold shares in MFI and Insurance corporations and pension funds in a similar amount while they hold a smaller portion of unlisted equity in financial intermediaries and auxiliaries. Considering the insurance and pension fund sector, around 85% of investments in unlisted shares are deployed to the Italian real economy while the remaining part is distributed among MFI, financial intermediaries and auxiliaries and other insurance companies (with a greeter incidence of investments in MFI). Public administrations, on the other hand, hold about 80% of resident equity participations in Italian non-financial enterprises. This assumption is supported by the large number of non-financial companies (especially transport and services) partially or totally participated by public administrations including the Ministry of Economy and Finance. The remaining resident equity investments are addressed for approximately € 16 billion in MFI and the remaining part divided between auxiliaries, intermediaries, insurance corporations and pension funds. Households, on the other hand, employ

more than 90% of their equity investments in unlisted shares of NFCs, this is based on the large number of family-run SMEs spread the whole Italian territory. It is assumed that households are responsible for approximately € 850 billion, € 750 billion and € 750 billion respectively in 2017, 2018 and Q2 2019 invested in unlisted real economy enterprises. The remaining part is mainly employed in equity participations of MFI and, to a lesser extent, in intermediaries, auxiliaries, insurance corporations and pension funds. Finally, the unlisted resident equity investments held by rest of the world have been computed in a residual manner taking into account that unlisted equity issued by each resident player must be equal to the sum of unlisted equity investments performed by all other sectors towards that actor. In other words, in a closed system for each financial instrument there must be a passive party balanced by an active counterparty.

The other assumptions regard the allocations of insurance and pension funds instruments, identified in financial accounts under *“insurance, pension and standardized guarantees”* (appendix c). Since there are no data with an adequate level of detail, was necessary to formulate assumptions about where financial players deposits their insurance products, otherwise all the direct and indirect insurance contribution that families bring to the real economy would be lost (especially given the their growing importance in the household’s portfolio). The most significant components are liabilities of insurance and pension funds as their core business is to receive insurance premiums in exchange for future benefits. This component was completely allocated to households as natural persons are the main policyholders in Italy. The families also hold insurance activities towards NFCs for around € 96 billion as the liquidation of the employee severance indemnity are recorded in this category. NFCs hold part of their insurance assets towards public administrations (for the total insurance liabilities of PAs) and the remaining part towards the rest of the world.

Referring to the household and NPISH sector, as it is not possible to discern the contribution of producer and consumer families from non-profit associations, the entire sector is considered as families. The focus of this research regards just financial wealth as real wealth represents households’ assets immobilized in dwellings or properties that do not financially support other institutional sectors. Real wealth has a significant weight in the portfolio of families, but it does not contribute to the direct or indirect financing of the country's real economy.

The segmentation of public administrations proposed by Bank of Italy in financial accounts concerning local administrations, central administrations and social security and welfare agencies is not included in the model as it is more relevant to consider the contribution of PA as a whole rather than subdividing it into the three segments. Finally, was necessary to adjust the NFCs sector. As defined in

the previous paragraph, if an enterprise proposes some sort of financial services but its core business still rely to the production of non-financial goods, it will be included in the non-financial company sector. This is the case of Poste Italiane SpA which, with Bancoposta business unit, offers its customers postal account and investment services as saving accounts. The volumes of deposits and investments managed by Bancoposta are not negligible and the definition of Poste Italiane SpA is not consistent with the definition of real economy provided in *Chapter 1* therefore, the estimated contribution of Bancoposta to non-financial companies will be isolated in order to meet the definition.

4.8.2 Implementation of the model

Having defined the assumption on allocation of funds and having considered the household sector as external agent, it is possible to build the source-purposes matrix. The source-purposes matrix is a square matrix $N \times N$ where N represents the number of institutional sectors in a closed system (in the system there are 7 institutional sectors). Each element of the matrix represents the stock of direct financing that, on a certain date, the subject on the lines claims towards the subject on the columns. The direct financing component is given by the sum of the contribution of currency, deposits, debt securities, loans, shares and other equity, investment fund shares, insurance, pension funds and standardized guarantees. Moreover, is defined the vector of the direct contribution of households to the seven sectors in the system, it is computed in a similar process to the elements of source-purposes matrix, thus by adding up the assets that households hold towards other sectors.

Table 7 shows the source-purposes matrix in absolute terms for the reference periods 2017, 2018 and Q2 2019.

2017	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Non-financial corporations (1)	369.8	368.4	2.4	6.9	8.0	63.8	362.9
Monetary financial institutions (2)	839.0	1,058.2	312.8	9.9	26.8	1,015.5	414.7
Financial interm. and auxiliaries (3)	188.3	326.9	7.0	21.1	20.6	68.1	283.0
Non-MMF investment funds (4)	17.8	34.4	2.7	-	3.7	55.5	157.9
Insurance corp. and pension funds (5)	74.1	45.5	2.9	37.4	3.7	340.3	436.1
General government (6)	153.4	92.4	20.8	1.4	3.5	59.7	41.2
Rest of the world (7)	600.4	939.1	160.2	21.7	82.8	805.9	-
Households	1,035.1	1,381.6	18.6	225.3	848.8	204.6	471.4
2018	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Non-financial corporations (1)	351.5	364.2	2.1	8.5	7.8	61.1	389.2
Monetary financial institutions (2)	789.2	997.2	320.4	15.8	26.4	1,075.9	440.1
Financial interm. and auxiliaries (3)	233.7	358.4	8.8	20.1	18.5	59.5	273.6
Non-MMF investment funds (4)	18.1	37.4	4.3	-	5.4	54.0	140.9
Insurance corp. and pension funds (5)	69.9	41.2	2.4	48.7	2.2	324.9	430.4
General government (6)	152.8	97.0	21.9	1.4	4.5	58.7	45.0
Rest of the world (7)	605.9	954.2	202.3	22.7	73.7	726.5	-
Households	931.0	1,363.4	16.3	199.8	848.5	208.6	462.6
Q2 2019	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Non-financial corporations (1)	354.6	377.9	4.2	7.5	8.8	47.7	392.6
Monetary financial institutions (2)	777.5	1,018.7	316.5	16.3	24.0	1,117.7	452.7
Financial interm. and auxiliaries (3)	236.5	334.8	8.3	21.3	18.2	63.6	293.8
Non-MMF investment funds (4)	19.6	44.2	5.6	-	4.1	50.9	145.5
Insurance corp. and pension funds (5)	67.1	40.3	1.9	56.2	0.9	342.9	472.2
General government (6)	156.4	133.1	20.9	1.4	5.3	64.9	43.1
Rest of the world (7)	635.8	940.2	200.6	22.3	55.5	789.4	-
Households	931.1	1,384.5	8.8	202.6	932.1	212.2	475.5

Table 7: Use-purposes matrix of 2017, 2018 and Q2 2019 (€ billion)

The value of operations that the rest of the world makes toward non-residential units is absent in the table as, following the directives contained in ESA 2010, all the funding flows that take place between non-resident actors are cancelled.

For the purpose of the research, it is possible to express the source-purposes matrix in percentage terms. Is therefore defined the matrix F where each element f_{ij} represents the stock of financing that, on a certain date, the subject i (along the lines) claims towards the subject j (along the columns) as a percentage of the total of the sources of j . The total sources of j are given by the sum of all the financial liabilities of the subject j including deposits, currency, debt securities, equity, investment fund shares, loans and insurance instruments, are also considered monetary gold and SDRs, financial derivatives,

stock options and other liabilities⁴⁶. Similarly, is defined the vector \vec{X} where each element x_i represents the percentage contribution that households directly bring to the financed category i .

The percentage values of the source-purposes matrix are summarized in *table 8* for the period in question; as shown in column (7) is assumed that the weight of financing that originate from Italy to non-residential units is negligible compared to the stock of the total financing of the rest of the world.

2017	(1)	(2)	(3)	(4)	(5)	(6)	(7)
NFCs (1)	9.50%	8.37%	0.46%	2.13%	0.81%	2.34%	0.00%
MFI (2)	21.56%	24.04%	58.65%	3.05%	2.68%	37.28%	0.00%
Financial interm. and auxiliaries (3)	4.84%	7.43%	1.31%	6.52%	2.07%	2.50%	0.00%
Non-MMF investment funds (4)	0.46%	0.78%	0.51%	0.00%	0.37%	2.04%	0.00%
Insurance corp. and pension funds (5)	1.90%	1.03%	0.54%	11.54%	0.37%	12.49%	0.00%
General government (6)	3.94%	2.10%	3.90%	0.43%	0.35%	2.19%	0.00%
Rest of the world (7)	15.43%	21.33%	30.04%	6.69%	8.30%	29.59%	0.00%
Households (X)	26.60%	31.38%	3.48%	69.52%	85.77%	7.51%	0.00%
2018	(1)	(2)	(3)	(4)	(5)	(6)	(7)
NFCs (1)	9.36%	8.36%	0.35%	2.67%	0.79%	2.28%	0.00%
MFI (2)	21.02%	22.89%	54.73%	4.97%	2.67%	40.13%	0.00%
Financial interm. and auxiliaries (3)	6.22%	8.23%	1.50%	6.33%	1.87%	2.22%	0.00%
Non-MMF investment funds (4)	0.48%	0.86%	0.73%	0.00%	0.54%	2.01%	0.00%
Insurance corp. and pension funds (5)	1.86%	0.95%	0.41%	15.35%	0.23%	12.12%	0.00%
General government (6)	4.07%	2.23%	3.74%	0.44%	0.46%	2.19%	0.00%
Rest of the world (7)	16.14%	21.90%	34.56%	7.15%	7.47%	27.10%	0.00%
Households (X)	24.80%	31.30%	2.78%	62.97%	86.24%	7.78%	0.00%
Q2 2019	(1)	(2)	(3)	(4)	(5)	(6)	(7)
NFCs (1)	9.29%	8.47%	0.73%	2.29%	0.84%	1.70%	0.00%
MFI (2)	20.37%	22.82%	55.04%	4.96%	2.29%	39.75%	0.00%
Financial interm. and auxiliaries (3)	6.20%	7.50%	1.45%	6.48%	1.73%	2.26%	0.00%
Non-MMF investment funds (4)	0.51%	0.99%	0.97%	0.00%	0.39%	1.81%	0.00%
Insurance corp. and pension funds (5)	1.76%	0.90%	0.34%	17.13%	0.09%	12.20%	0.00%
General government (6)	4.10%	2.98%	3.64%	0.42%	0.51%	2.31%	0.00%
Rest of the world (7)	16.66%	21.06%	34.89%	6.81%	5.29%	28.07%	0.00%
Households (X)	24.39%	31.02%	1.52%	61.77%	89.18%	7.55%	0.00%

Table 8: Use-purposes matrix in percentage of 2017, 2018 and Q2 2019

Taking into consideration the financing stock at the end of 2018, it is possible to highlight some considerations that confirm topics already known in Italy. The country's real economy, well approximated by non-financial corporations, is heavily dependent on the banking circuit receiving the

⁴⁶ As a consequence, $0 \leq f_{ij} \leq 1$ for $i, j = 1, 2, \dots, 7$ and $\sum_i f_{ij} \leq 1$ for $j = 1, 2, \dots, 7$. Therefore, assuming that there are no entirely self-financed institutional sectors, it is proven that the eigenvalue of maximum module of the matrix F is: $\lambda(F) < 1$.

21.02% of the resources directly from MFI. Moreover, NFCs receives funds from non-residential units for 16.14% and from households for 24.8% (mainly due to the equity investments of unlisted companies). The contribution from mutual funds appears to be very limited, as they account just for the 0.48% of the funds received.

By applying the value model introduced by *Brioschi and others* (1990) to financial accounts, the balance sheet of each sector of the system can be briefly represented as:

Asset	Liabilities
W_i	V_i
$\sum_{j=1}^n f_{ij}V_j$	

Table 9: Balance sheet of Institutional sectors according to the value model. Source: *Brioschi, Buzzacchi and Colombo, 1990*

Where W_i represents the value of the financial assets of the institutional sector net of financing toward other sectors, V_i represents the value of the sector's own resources and therefore the component $\sum_{j=1}^n f_{ij}V_j$ represents the stock of investments held by sector i towards the other sectors of the system. By equalling assets and liabilities of the balance sheet:

$$V_i = \sum_{j=1}^n f_{ij}V_j + W_i$$

This expression represents the summary of the balance sheet of an institutional sector within a system and can be written in matrix form by introducing the vectors \vec{V} and \vec{W} , composed by the respective scalars V_i and W_i

$$\vec{V} = F \vec{V} + \vec{W}$$

Therefore⁴⁷:

$$\vec{V} = (I - F)^{-1} \vec{W}$$

Successively, it is possible to define the aggregate percentage contribution y_j that an external agent (represented by households) bring to the liabilities of NFCs and the remaining $j-1$ institutional sectors. The integrated contribution consists of the sum of direct financing (x_j) and indirect financing obtained from the flow of funds that families bring to other sectors on the market, which in turn, finance the Italian real economy. The integrated value can be obtained as:

⁴⁷ Considering conditions expressed in footnote n. 46, the matrix $(I - F)$ has a non-negative inverse matrix $(I - F)^{-1}$

$$y_j = x_j + \sum_{k=1}^7 y_k f_{kj}$$

By expressing the equation in matrix form and introducing the aggregate vector $\vec{Y} = [y_i]$ it is possible to establish the relationship:

$$\vec{Y} = \vec{X} + F^T \vec{Y}$$

The relation can be solved⁴⁸ for \vec{Y} :

$$\vec{Y} = (I - F^T)^{-1} \vec{X}$$

Where I represents the identity matrix, a square matrix of grade 7 that assumes values equal to 1 on the diagonal (0 otherwise) and F^T represents the transpose of the matrix F .

The result of the equation is summarized in *table 10*, which shows the percentages of the vector \vec{Y} for the three reference periods.

	NFCs	MFI	Financial interm. and auxiliaries	Non-MMF investment funds	Insurance corp. and pension funds	General Government	RoW
\vec{Y} 2017	48.42%	53.68%	38.30%	85.16%	89.19%	43.45%	0.00%
\vec{Y} 2018	46.23%	52.62%	34.89%	82.96%	89.52%	44.21%	0.00%
\vec{Y} Q2 2019	45.16%	52.26%	33.80%	83.52%	91.96%	43.58%	0.00%

Table 10: Households' integrated financing in percentage of sectors' liabilities

To determine the contribution that households bring, directly or indirectly, to NFCs (and other sectors), is necessary to multiply the values of y_j by the total stock of financial sources for each category, net of the investments towards other categories.

Starting from the total stock of the financial sources of each sector (identified by the total financial liabilities present in the financial accounts), must be subtracted all the investments that each sector j makes towards other $j-1$ sectors (households excluded). These investments are computed as the sum of the investments along the lines of each sector of the use-purposes matrix (without considering the investments towards the rest of the world). Recalling the value model, the difference just computed represents the vector \vec{W} , the value of the financial assets of the institutional sector net of financing toward other sectors.

⁴⁸ Even the matrix $(I - F^T)$ has a non-negative inverse matrix $(I - F^T)^{-1}$ according to note n.46

	NFCs	MFI	Financial interm. and auxiliaries	Non-MMF investment funds	Insurance corp. and pension funds	General Government
\vec{W} 2017	3,072.5	1,140.4	-98.6	210.0	494.1	2,392.5
$\vec{W}^* \vec{Y}$ 2017	1,487.8	612.1	-37.8	178.8	440.7	1,039.5
\vec{W} 2018	2,959.1	1,131.5	-113.5	198.2	497.7	2,344.6
$\vec{W}^* \vec{Y}$ 2018	1,367.9	595.4	-39.6	164.4	445.6	1,036.5
\vec{W} Q2 2019	3,016.1	1,193.4	-107.7	203.6	539.5	2,429.8
$\vec{W}^* \vec{Y}$ Q2 2019	1,362.1	623.6	-36.4	170.0	496.1	1,058.9

Table 11: Households' integrated financing in real terms (€ billion)

The vector $\vec{W}^* \vec{Y}$ represents the integrated financing that Italian households make to resident sectors, it includes both direct contributions made through direct investments in securities, deposits, insurance instruments and loans, and through indirect investments intermediated by other sectors.

Continuing with the analysis, it is possible to derive the integrated contribution to the various sectors net of loans granted to families given that Italian households receive loans not only from MFI but to a lesser extent also from financial intermediaries, financial auxiliaries, general government and insurance corporations. Finally, it was necessary to isolate the contribution⁴⁹ of Poste Italiane SpA as it does not reflect the definition of the real economy provided in *Chapter 1*. Table 12 summarizes the results obtained showing integrated household financing for different financial sectors. The negative values referring to MFI and the financial intermediaries and auxiliaries mean that in aggregate terms (directly and indirectly), the assets claimed by the Families are lower than the liabilities to which are exposed. In fact, these two sectors represent the primary source of funds for families through bank loans.

⁴⁹ Estimated contribution based on Annual Financial reports of Poste Italiane.

2017	NFCs	MFI	Financial interm. and auxiliaries	Non-MMF investment funds	Insurance corp. and pension funds	General government
\vec{X} (households)	26.60%	31.38%	3.48%	69.52%	85.77%	7.51%
Direct financing	1,035.1	1,381.6	18.6	225.3	848.8	204.6
\vec{Y} (households)	48.42%	53.68%	38.30%	85.16%	89.19%	43.45%
Integrated financing	1,487.8	612.1	-37.8	178.8	440.7	1,039.5
Integrated financing net of loans	1,487.8	-17.0	-108.9	178.8	439.5	1,033.0
Integrated financing net of loans and contribution of Poste Italiane SpA	1,442.0	-14.5	-108.8	179.0	439.7	1,074.1

2018	NFCs	MFI	Financial interm. and auxiliaries	Non-MMF investment funds	Insurance corp. and pension funds	General government
\vec{X} (households)	24.80%	31.30%	2.78%	62.97%	86.24%	7.78%
Direct financing	931.0	1,363.4	16.3	199.8	848.5	208.6
\vec{Y} (households)	46.23%	52.62%	34.89%	82.96%	89.52%	44.21%
Integrated financing	1,367.9	595.4	-39.6	164.4	445.6	1,036.5
Integrated financing net of loans	1,367.9	-30.9	-127.3	164.4	444.7	1,030.5
Integrated financing net of loans and contribution of Poste Italiane SpA	1,318.2	-28.4	-127.2	164.6	444.9	1,072.7

Q2 2019	NFCs	MFI	Financial interm. and auxiliaries	Non-MMF investment funds	Insurance corp. and pension funds	General government
\vec{X} (households)	24.39%	31.02%	1.52%	61.77%	89.18%	7.55%
Direct financing	931.1	1,384.5	8.8	202.6	932.1	212.2
\vec{Y} (households)	45.16%	52.26%	33.80%	83.52%	91.96%	43.58%
Integrated financing	1,362.1	623.6	-36.4	170.0	496.1	1,058.9
Integrated financing net of loans	1,362.1	-7.3	-129.3	170.0	495.2	1,053.0
Integrated financing net of loans and contribution of Poste Italiane SpA	1,305.9	-4.8	-129.2	170.2	495.4	1,098.3

Table 12: Direct and integrated contribution of households net of loans and Poste Italiane SpA (€ billion)

4.8.3 Considerations on outcome of first research question

The results shown in *table 12* reveal some interesting considerations. First of all, financing flow from households towards the real economy increases significantly, starting from a direct financing share of 24.8% (in 2018) to an integrated contribution of 46.23% due to the intermediation of other institutional players. The incidence of households on banking institutions' liabilities also increased significantly, going from 31.3% in direct terms to 52.62% in integrated terms; banking institutions are used to finance each other but the main source of resources remains household's bank deposits. Another interesting result is the growth of incidence of financing toward public administrations which

has increased by six times from 7.55% in direct terms to 43.58% in integrated terms. Integrated household financing in favor of Italian real economy in 2018 is quantifiable at € 1,305.9 billion net of loans and contribution of Poste Italiane SpA, whose deposits paid by account holders mainly finance government bonds. The analysis pointed out an interesting phenomenon: compared to direct investment, flow of resources brokered by banks, financial intermediaries, insurance companies and investment support non-financial enterprises less than the general governments. Considering the time horizon of 18 months, *table 13* highlights the direct and integrated financing of households both towards the real economy and towards public administrations.

	2017		2018		Q2 2019	
	NFCs	General government	NFCs	General government	NFCs	General government
Direct financing	1035.1	204.6	931	208.6	931.1	212.2
Integrated financing	1,487.8	1,039.5	1,367.9	1,036.5	1,362.1	1,059.0
Integrated financing net of debt	1,487.8	1,033.0	1,367.9	1,030.4	1,362.1	1,053.0
Integrated financing net of debt and contribution of Poste Italiane SpA	1,442.0	1,074.1	1,318.2	1,072.7	1,305.9	1,098.3

Table 13: Comparison of direct and integrated financing of households to NFCs and General government

Between 2017 and 2018 households' direct financing to non-financial companies decreased by - € 104.1 billion while in integrated terms by - € 123.8 billion. In the same period was recorded an increase in the direct contribution to the public administration of - € 4 billion and a decrease in integrated terms of just - € 1.4 billion. In the following two quarters, direct investments to real economy increased by just € 0.1 billion while contribution in favor of general governments increased by + € 3.6 billion. Even more evident was the tendency in integrated terms, integrated financing toward real economy fell by - € 12.3 billion and for general government it increased by + € 25.6 billion. There is a clear trend of reduction of households' wealth in the real Italian economy. The phenomenon occurred both directly (albeit with a slight recovery in Q2 2019, mostly caused by the revaluation of listed shares) and indirectly (much more marked). The comparison in *table 13* shows that who benefited from this negative flow is the General government, both for the direct contribution and for that 'induced' by the intermediaries especially in the first half of 2019 (also thanks to the reduction of markets spread). Another interesting point is the analysis of foreign assets owned by the resident units (*table 14*). At the end of 2017, the stock of direct investments held by households on foreign assets was worth € 471 billion; in the following 12 months it shrunk to € 462.6 billion and then returned to € 476 billion at first half of 2019, a value slightly higher than the starting amount. However, taking in consideration all the other resident sectors including non-MMF investment funds, MFI, Insurance corporations and pension funds and even General government, total foreign assets increased by + € 104 billion in 18

months, going from € 1,695.8 billion in 2017 to around € 1,800 billion in Q2 2019. On the other hand, in 2018 foreign investors significantly reduced their exposure to the Italian economy for an amount of - € 24.5 billion (affecting all residential units). There was a marked recovery of € + 58.4 billion in the first half of 2019 which impacted mainly on non-financial companies + € 29.9 billion but even more markedly on public debt (+ € 62.9 billion).

	2017		2018		Q2 2019	
	To RoW	From RoW	To RoW	From RoW	To RoW	From RoW
Households	471.4	-	462.6	-	475.7	-
Other Institutional sectors	1,695.8	2,610.0	1,719.2	2,585.5	1,799.7	2,643.9
Total	2,167.2	2,610.0	2,181.8	2,585.5	2,275.4	2,643.9

Table 14: Direct flow of funds from and towards Rest of the world by households and other resident institutional sectors (€ billion)

The results obtained from the model are consistent with the increase of Italian public debt during the period in exam. Between December 2017 and June 2019, the overall Italian public debt stock increased by + € 113.7 billion from € 2,328.7 billion to € 2,442.4 billion. During the same period, the share held by foreign investors decreased from € 732.1 billion to € 730.1 billion, falling below the symbolic threshold of 30% of the total. In conclusion, it is possible to assert that the increase in public debt was financed mainly by resident households through direct financing and, even more stressed, by allocation of resources through banks, intermediaries and funds. In addition, families maintained their exposure to foreign countries almost constant over the 18 months considered, while intermediaries increased it significantly. All this went to the detriment of the real economy represented by Italian non-financial companies that did not benefit from resources of the resident sectors who channelled their resources both abroad and to the public administration.

4.9 Second research question

4.9.1 Hypothesis development

The following paragraph will deal with applying the use-purposes model to the private household sector, the sub-sector of households characterized by high capital requirements. The private families sector in Italy represents a strategic player capable of providing a concrete support to the real economy and well-being of the country. The assumptions employed in this second part are the same as those used for the first research question both in terms of allocation of unlisted shares and in terms of allocation of insurance instruments between the various institutional players. It's necessary to point out that private families manage part of their financial wealth through the network of private banking intermediaries. The private banking network provides financial advisory only over some categories of

financial instruments, in particular tradable financial instruments. Therefore, all unlisted shares that refer to family businesses are not under the responsibility of private banking operators. Unlisted shares will not be included in the calculation of the financial assets of private families but are nevertheless part of the private household portfolio. Furthermore, it is appropriate to assume that private households do not have financial debt (loans) to credit institutions, therefore it is assumed that the amount of loans granted to private households is zero.

4.9.2 Implementation of the model

The procedure adopted is similar to that used for the first part, the use-purposes matrix remains the same but changes the vector of direct financing of private families which is shown in *table 15*.

2017	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Non-financial corporations (1)	369.8	368.4	2.4	6.9	8.0	63.8	362.9
Monetary financial institutions (2)	839.0	1,058.2	312.8	9.9	26.8	1,015.5	414.7
Financial interm. and auxiliaries (3)	188.3	326.9	7.0	21.1	20.6	68.1	283.0
Non-MMF investment funds (4)	17.8	34.4	2.7	-	3.7	55.5	157.9
Insurance corp. and pension funds (5)	74.1	45.5	2.9	37.4	3.7	340.3	436.1
General government (6)	153.4	92.4	20.8	1.4	3.5	59.7	41.2
Rest of the world (7)	600.4	939.1	160.2	21.7	82.8	805.9	-
Private Households	38.2	254.8	-	-	115.1	62.0	276.4
2018	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Non-financial corporations (1)	351.5	364.2	2.1	8.5	7.8	61.1	389.2
Monetary financial institutions (2)	789.2	997.2	320.4	15.8	26.4	1,075.9	440.1
Financial interm. and auxiliaries (3)	233.7	358.4	8.8	20.1	18.5	59.5	273.6
Non-MMF investment funds (4)	18.1	37.4	4.3	-	5.4	54.0	140.9
Insurance corp. and pension funds (5)	69.9	41.2	2.4	48.7	2.2	324.9	430.4
General government (6)	152.8	97.0	21.9	1.4	4.5	58.7	45.0
Rest of the world (7)	605.9	954.2	202.3	22.7	73.7	726.5	-
Private Households	38.5	241.8	-	-	112.7	60.6	264.6
Q2 2019	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Non-financial corporations (1)	354.6	377.9	4.2	7.5	8.8	47.7	392.6
Monetary financial institutions (2)	777.5	1,018.7	316.5	16.3	24.0	1,117.7	452.7
Financial interm. and auxiliaries (3)	236.5	334.8	8.3	21.3	18.2	63.6	293.8
Non-MMF investment funds (4)	19.6	44.2	5.6	-	4.1	50.9	145.5
Insurance corp. and pension funds (5)	67.1	40.3	1.9	56.2	0.9	342.9	472.2
General government (6)	156.4	133.1	20.9	1.4	5.3	64.9	43.1
Rest of the world (7)	635.8	940.2	200.6	22.3	55.5	789.4	-
Private Households	39.2	264.7	-	-	122.7	62.4	288.1

Table 15: Use-purposes matrix for private families of 2017, 2018 and Q2 2019 (€ billion)

Table 15 does not show the direct contribution of private households toward non-MMF investments funds as private households invest in mutual funds whose asset composition is known by the private banking intermediaries. Therefore, was possible to allocate the investments of private families in mutual funds directly to the other institutional players.

The next step consists in identifying vectors \vec{X}_p and \vec{Y}_p which respectively represent the direct and integrated financing vectors in percentage terms. By applying the matrix passages and subtracting the estimated contribution of Poste Italiane SpA, the results shown in table 16 are obtained.

2017	NFCs	MFI	Financial interm. and auxiliaries	Non-MMF investment funds	Insurance corp. and pension funds	General government
\vec{X}_p (Private households)	0.98%	5.79%	-	-	11.63%	2.28%
Direct financing	38.2	254.8	-	-	115.1	62.0
\vec{Y}_p (Private households)	4.14%	9.04%	5.77%	2.17%	12.11%	7.61%
Integrated financing	127.2	103.0	-5.7	4.6	58.8	182.1
Integrated financing net of contribution of Poste Italiane SpA	81.4	105.5	-5.6	4.8	59.0	223.2

2018	NFCs	MFI	Financial interm. and auxiliaries	Non-MMF investment funds	Insurance corp. and pension funds	General government
\vec{X}_p (Private households)	1.03%	5.55%	-	-	11.46%	2.26%
Direct financing	38.5	241.8	-	-	112.7	60.6
\vec{Y}_p (Private households)	4.08%	8.58%	5.14%	2.72%	11.89%	7.57%
Integrated financing	120.6	97.1	-5.8	5.4	58.8	177.6
Integrated financing net of contribution of Poste Italiane SpA	70.9	99.6	-5.7	5.6	59.0	219.8

Q2 2019	NFCs	MFI	Financial interm. and auxiliaries	Non-MMF investment funds	Insurance corp. and pension funds	General government
\vec{X}_p (Private households)	1.03%	5.93%	-	-	11.74%	2.22%
Direct financing	39.2	264.7	-	-	122.7	62.4
\vec{Y}_p (Private households)	4.17%	9.16%	5.50%	3.02%	12.14%	7.77%
Integrated financing	125.7	109.3	-5.9	6.1	65.0	188.7
Integrated financing net of contribution of Poste Italiane SpA	69.5	111.8	-5.8	6.3	65.2	234.0

Table 16: Direct and integrated contribution of private families net of Poste Italiane SpA (€ billion)

4.9.3 Considerations on outcome of second research question

From an analytical perspective, private households have not decreased direct funding to the real Italian economy. In 2017, direct financing stood at € 38.2 billion and increased to € 39.2 billion in the following 18 months. An increase in percentage terms, albeit of limited size, of 2.6% against a contraction in funding for the entire household sector equal to - 10%. Compared to the unfavorable trend that characterized the first half of 2019, private banking was characterized by a greater stability

of the resources invested directly in Italian NFCs. In a positive market context and a decrease in country risk, retail households were more influenced by uncertainty towards economic growth, while private banking responded with greater attention to investments in domestic non-financial enterprises. As experienced for the whole household sector, the financing flow from private families towards the real economy increases significantly through intermediation, starting from a direct financing share of 1.03% (in 2018) to an integrated contribution of 4.17% due to the intermediation of other institutional players. The incidence of private families on banking institutions' liabilities increased as well, passing from 5.55% in direct terms to 8.58% in integrated terms. In real terms, integrated exposure to the real economy went from € 127.2 billion in 2017 (€ 81.4 billion without the contribution of Poste Italiane SpA) to € 125.7 billion in 2019 (€ 69.5 billion without the contribution of Poste Italiane SpA), a similar trend to that described in the first research question. A further consideration regards the relationship with foreign countries, it is interesting how private households increased their stock of direct foreign assets from € 276.4 billion in 2017 to € 288.1 billion in Q2 2019, equivalent to an increase of 4.2% against an increase of only 0.8% recorded by retail families. Furthermore, the reduction of the integrated stock of resources invested in the Italian real economy has benefited the general government which, in terms of integrated financing, passed from € 223.2 billion in 2017 to € 234 billion in the following 12 months (+4.8% respect the +2.2% recorded by household sector as a whole).

In conclusion, unlike retail families, private families kept constant their direct support to non-financial enterprises but in terms of integrated financing they reduced the flow of funds toward NFCs in favor of general government, just as turned out for retail families.

Chapter 5:

Conclusions

The dissertation aims of quantifying the contribution of Italian households to the real economy through the analysis of direct and indirect investments.

The research began with an analysis of the Italian and European macroeconomic context, highlighting how real economy enterprises (whose perimeter was defined according to ATECO codes) are mainly SMEs, with all the characteristics of the sector. The context in which non-financial companies operate is still deeply affected by the consequences of the economic crisis dating back to 2008 and 2012. The recovery process has shown encouraging results regarding figures of SMEs' value added which have returned to pre-crisis levels and the employment rate which has started to grow again. However, it is necessary to emphasize that the Italian recovery process is still fragile and lagging behind other European countries that have managed to revive their situation in a shorter period. Economic repercussions in Italy are manifested in access to bank credit, a particularly important condition in a bank-centric system as the Italian one. This situation led real economy enterprises to rely on alternative sources of financing based on both equity instruments, asset-based instruments, alternative debt instruments and hybrid instruments that can guarantee more flexibility for both borrowers and investors. The entire Italian and European context are backed by policies, supporting economic plans and projects with the aim of promoting access to funds for businesses and start-ups. Numerous initiatives have emerged in recent years allowing institutional and retail investors to both benefit from adequate returns on their investments and actively support the country's real economy. The research wanted to pay particular attention to the infrastructure system, one of the most important enabling factors representing the keystone of the entire country. The infrastructure analysis highlighted an infrastructure gap that must be bridged to maintain the nation's growth expectations.

5.1 Summary of the main findings

The work is based on an innovative approach aimed at investigating the financing of real economy. The existing literature has mainly dealt with quantifying the financing of credit institutions to non-financial companies, without paying enough attention on households, the institutional sector in financial surplus that represents the main source of resources that many financial players rely on. The research developed a model based on the use-purposes matrix derived from the value model

proposed by *Brioschi et others* (1990) in the Italian context. The matrix is employed to financial accounts, the economic system of accounts allowing to have an overall perspective of the existing financial relationships among institutional sectors in the system. The application of the model enables to provide a quantitative evidence of the stock of resources employed by Italian households towards real economy both in direct and indirect terms between the end of 2017 and the first half of 2019.

In particular, the first research question focuses on quantifying the savings of households towards the real economy which, at the end of 2017, amounted to € 1,035.1 billion in direct terms and to € 1,442.0 billion in integrated terms net of loans and contribution of Poste Italiane. Figures highlight how the stock of resources employed by Italian families increases significantly considering also indirect investments that intermediaries as banking institutions, mutual funds and Insurance corporations make in the real economy. Over the following eighteen months this stock has decreased considerably, reaching in Q2 2019 € 931.1 billion in direct terms and € 1,305.9 billion in terms integrated. The model showed a negative balance of € 136 billions of which of € 104 billion in direct contribution. The public administration benefited by the whole situation. The increase in public debt experienced in the reference period was mainly financed by resident households through direct investments and, more markedly, through resources allocated by banks, intermediaries and funds. Total net financing from households to debt of general government increased by € 24 billion (of which € 7.6 billion directly) passing from € 1,074 billion to € 1,098 billion. Moreover, during the reference period was experienced the phenomenon of capital flight abroad by financial intermediaries, funds and insurance companies while households maintained constant their foreign exposure.

The dissertation provided a further step forward by employing the model to analyze the contribution of private families and the evolution of their stock of resources invested in real economy over the 18 months under review. Private banking clients are considered key players in the Italian panorama, both for the amount of assets managed that in the first half of 2019 amounted to € 845 billion, and for their potential to actively support Italian non-financial companies and infrastructures. In 2017, the model quantified the stock of private households' resources invested directly in the real economy at € 38.2 billion while the integrated net contribution amounted to € 81.4 billion. Unlike retail households, private clients increased the direct stock of resources toward real economy by + € 1 billion in the following 18 months. However, the analysis of integrated flow of funds has shown a similar behavior of retail families, in terms of integrated financing they reduced the flow of funds toward NFCs in favor of general government (proportionately even more markedly than retail households).

Considering the results obtained, I believe it is reasonable to expect that if the public debt keeps increasing, it will continue to absorb other resources, and financial intermediaries will have an incentive to satisfy the demand for capital by General government, having already in the portfolio public debt securities. Therefore, an effort from the government side is necessary to reduce the needs of the State which, in addition to impact on the perceived risk and market spread, will bring advantages on the capital offer of companies. Tax incentives have to be followed by reforms that can improve the competitiveness and attractiveness of the Italian system; in particular, the country has to dedicate particular attention to reforms aiming to relaunch infrastructure, simplify bureaucracy and investing in R&D. Furthermore, new options for the promotion of illiquid instruments for institutional and retail investors will have to be considered as the results obtained by the latest reforms have not led to the expected outcome. A concrete alternative to the PIR (which have shown that open-end funds are not a suitable instrument for this kind of investments) could be ELTIFs, which have been successful in the European context and could be attractive to Italian retail investors due to the closed-end nature of the funds. Moreover, private bankers can play a fundamental role in raising the awareness of high net worth individuals on the opportunities offered by the real economy by placing greater effort on involving the new generations as they are more available to consider long-term investments. The role played by the Private Banker remains strategic as it represents the bridge between clients with high propensity to risk and companies ready to deal with professional investors.

5.2 Limitations of the work and recommendations for future research

Although the research provided an explanation to the questions presented at the beginning of the dissertation, some limitations occurred during the work. First of all, there is no real literature that deals with the contribution of Italian households to the real economy in indirect terms, trying to reveal the contribution of intermediaries who on the one hand collect resources from families and on the other invest in Italian non-financial enterprises. Another crucial point has been the construction of the assumptions for allocating unlisted equity and insurance products as there were not sufficient detailed statistics to uniquely allocate these instruments. The reason lies in the fact that the unlisted shares refer to family-run businesses whose entire structure is unknown. However, I believe that the hypotheses described in the previous chapter are precise to the point of providing a fair picture of the unlisted equity situation.

Regarding future developments, I believe it is interesting to develop an even more significant and extensive analysis over a longer time horizon in order to understand the political and economic determinants that led to the shift of household capitals (directly and indirectly) between the various institutional players. Furthermore, the application of the model in the context of the main European

and non-European countries would be useful for an international comparison in order to identify the investment preferences of foreign families and intermediaries according to the phenomenon of capital flight abroad that our country is undergoing

In conclusion, I believe that this work has provided both practitioners and academic with valid contribution, highlighting the real behavior of the financial sectors towards financing of the real economy.

Appendixes

Appendix a: Financial Accounts of Italy of 2017, 2018 and Q2 2019 (€ billion). Source: ECW Statistics

Financial instruments	2017																							
	Non financial corporations						MFI						Financial corporations						Institutional sectors					
	Non financial corporations		MFI		Financial intermediaries and auxiliaries		Non-MMF investment funds		Insurance corporations and pension funds		General government		Households and NPISH		Rest of the world									
	Assets	Liabilities	Assets	Liabilities	Assets	Liabilities	Assets	Liabilities	Assets	Liabilities	Assets	Liabilities	Assets	Liabilities	Assets	Liabilities								
Monetary gold and SDRs																								
Currency and deposits																								
Debt securities																								
issued by MFI	1.3	240.1	506.3	506.3	9.6	118.8	194.1	138.6	7.5	21.3	593.0	16.3	39.6	2,136.7	302.4	1,026.9								
issued by General gov.	52.5	735.0	47.0	735.0	57.0	6.8	194.1	7.0	340.3	21.2	11.5	2,136.7	11.5	2,136.7	130.5	754.8								
issued by NFCs	5.5	167.3	89.9	167.3	6.8	89.9	194.1	2.1	0.5	0.1	14.6	3.6	6.6	7.6	69.4	79.5								
issued by Financial interm. and auxiliaries	6.1	167.0	9.3	167.0	16.1	29.3	65.3	1.4	0.1	16.3	3.8	71.2	1.5	0.8	-12.9	552.2								
issued by Insurance corp. and pension funds	12.2	145.0	156.2	145.0	3.0	5.1	1.3	0.4	0.5	0.8	23.6	1.1	23.6	1.1	94.8	62.1								
issued by Rest of the world	69.9	1,066.8	1,855.7	1,066.8	60.1	237.5	289.1	10.5	10.5	11.5	144.9	10.7	124.9	708.1	229.0	191.8								
Financial derivatives and stock options																								
Loans																								
granted by MFI	726.7	1,855.7	52.8	1,855.7	237.5	4.5	237.5	10.5	10.5	5.0	11.1	629.2	71.1	71.1	8.9	102.6								
granted by Financial interm. and auxiliaries	141.8																							
granted by Insurance corp. and pension funds	69.9	39.8	7.3	39.8	7.3																			
granted by General gov.	46.1																							
granted by NFCs	10.7																							
granted by Households and NPISH	101.7																							
granted by Rest of the world	693.6	1,904.1	177.4	1,904.1	231.9	44.1	46.3	6.1	116.7	114.5	155.9	51.1	229.0	567.3	589.4	454.0								
Shares and other equity																								
Unlisted shares and other equity	533.0	1,515.8	145.8	1,515.8	51.9	34.5	9.2	85.7	82.9	124.3	31.6	92.5	288.3	288.3	279.0	135.4								
Listed shares	160.6	388.3	31.6	388.3	127.5	9.6	6.4	2.0	31.0	16.9	38.4	38.4	227.6	227.6	30.8	135.4								
issued by NFCs	61.6	9.4	127.5	9.4	4.6	0.1	2.1	0.8	0.2	0.4	5.6	12.6	3.0	3.0	5.1	15.5								
issued by MFI	2.4	0.4	0.4	0.4	0.1	9.6	0.2	0.1	0.1	0.4	0.4	1.0	1.0	1.0	1.0	1.0								
issued by Financial interm. and auxiliaries	8.0	1.4	1.1	1.4	1.1	1.1	0.5	0.5	31.6	31.6	7.3	37.4	4.2	4.2	13.5	727.7								
issued by Insurance corp. and pension funds	19.0	7.3	8.9	7.3	8.9	27.9	63.0	323.7	199.9	4.2	10.9	21.7	21.7	21.7	21.7	21.7								
issued by Rest of the world	16.7	16.2	4.1	16.2	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1								
Investment fund shares																								
issued by FMI	0.5	0.2	4.1	0.2	4.1	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5								
issued by Non-MMF investment funds	6.9	9.9	21.1	9.9	21.1	228.4	63.0	323.7	37.4	1.4	2.8	255.6	2.8	255.6	14.9	42.0								
issued by Rest of the world	9.4	6.2	19.7	6.2	19.7	228.4	63.0	323.7	37.4	1.4	2.8	255.6	2.8	255.6	14.9	42.0								
Insurance, pension and standardised guarantees																								
issued by Rest of the world	624.9	605.2	13.5	605.2	2.4	4.3	1.0	5.4	4.5	842.3	4.2	134.6	86.1	127.4	95.6	126.1								
Other assets and liabilities																								
Total	1,841.4	3,891.9	4,658.7	3,891.9	1,002.4	533.4	273.4	324.1	956.3	989.6	562.3	2,723.8	4,351.6	2,787.2	2,641.2	2,641.2								
Net financial assets	-2,050.4	256.2	469.1	-2,050.4	-50.7	-33.3	-2,161.4	3,425.1	145.9															

Financial instruments	2018																	
	Non financial corporations						Financial corporations						Institutional sectors					
	MFI			Financial intermediaries and auxiliaries			Non-MMF investment funds			Insurance corporations and pension funds			General government		Households and NPISH		Rest of the world	
	Assets	Liabilities		Assets	Liabilities		Assets	Liabilities		Assets	Liabilities		Assets	Liabilities	Assets	Liabilities	Assets	Liabilities
Monetary gold and special drawing rights (SDRs)																		
Currency and deposits	363.9	46.2	1,027.0	3,506.1	8.0		344.8		28.2	21.3	88.1	243.7	1,398.1	8.0	803.8	280.2	95.1	
Debt securities	58.9	150.8	1,365.1	455.8	97.6	128.1	197.6	16.5	581.3	18.1	43.8	2,092.4	280.2	803.8	917.9	559.4	280.2	
issued by MFI	0.8		239.5	455.8	5.6	6.7					1.6		63.6		120.0			
issued by General gov.	47.6		794.2	47.5	53.6	324.9					12.3	2,092.4	137.6		675.1			
issued by NFCs	5.6	150.8	48.0	5.1	197.6	6.5	19.1	0.4	19.1	6.6	6.6		2.5	57.2				
issued by Financial interm. and auxiliaries			97.2			3.6			0.4	15.5	15.5		5.5	75.5				
issued by Insurance corp. and pension funds			10.2			1.3				16.5	16.5		0.6	-9.9				
issued by Rest of the world	5.0		176.1	26.7	56.4	218.8				6.1	6.1		70.5	559.4				
Financial derivatives and stock options	15.7	14.2	127.5	139.0	2.2	5.4	0.4	0.8	0.4	0.8	21.2	21.2	1.1	94.8	62.1			
Loans	72.3	1,079.7	1,809.1	62.1	307.0	335.1	216.2	4.3	11.7	11.8	141.6	225.1	13.8	284.5	205.1			
granted by MFI		678.5	1,809.1	55.3	307.0	4.8			11.7	4.3	119.7	119.7	626.3	108.8	108.8			
granted by Financial interm. and auxiliaries		190.4									12.0	12.0	87.7	12.1	12.1			
granted by Insurance corp. and pension funds										0.4	141.6	40.4	6.1	10.8	10.8			
granted by General gov.		39.0		6.9						0.4	141.6	40.4	1.7	48.9	48.9			
granted by NFCs	72.3	46.1												24.6	24.6			
granted by Households and NPISH		13.8																
granted by rest of the world		111.9																
Shares and other equity	684.2	1,777.9	168.8	160.3	82.6	45.5	114.1	7.1	112.8	106.0	157.5	51.4	915.5	284.5	533.3	612.4		
Unlisted shares and other equity	544.1	1,431.7	139.1	70.8	59.5	37.6			82.6	76.2	126.8		836.7	303.7	303.7	488.0		
Listed shares	140.1	346.2	29.7	89.5	23.1	7.9			30.2	29.8	30.7		78.8	229.6	229.6	124.4		
issued by NFCs	60.6	346.2	16.2	11.8	11.8	6.4			2.2	17.1	17.1		31.6	201.1	201.1			
issued by MFI	52.9		8.6	89.5	2.8	1.7			0.6	4.4	4.4		8.2	10.3	10.3			
issued by Financial interm. and auxiliaries	2.1		0.5	0.1	0.1	0.2			0.1	0.4	0.4		0.7	4.0	4.0			
issued by Insurance corp. and pension funds	7.8		1.7	0.9	0.9	0.6			0.5	29.8	29.8		2.7	14.1	14.1			
issued by Rest of the world	16.9		2.8	7.5	7.5	27.4			26.9	7.3	7.3		35.7	124.4	124.4			
Investment fund shares	18.2	20.5	3.2	240.3	55.9	316.9	55.9	4.2	200.0	4.2	4.2		453.1	16.7	688.8			
issued by FMI	0.4		0.1	3.2	0.5				0.2	8.1	8.1		8.1	-6.0	-6.0			
issued by Non-MMF investment funds	8.5		15.8	20.1	219.7	55.9			151.1	2.8	2.8		245.2	22.7	22.7			
issued by Rest of the world	9.4		4.6							843.0	1.1	9.2	1,007.6	13.4	13.4	40.9		
Insurance, pension and standardised guarantees	11.2	96.5	9.5	19.2	3.8	1.8			4.3	5.8	5.8		182.3	101.5	132.6			
Other assets and liabilities	613.9	589.9	13.6	2.6	3.8				4.8	4.8	4.8		131.6	101.5	132.6			
Total	1,838.4	3,754.2	4,636.2	4,356.3	1,078.3	585.4	492.9	-56.0	936.7	983.9	570.5	2,680.9	4,201.1	2,773.9	2,676.6			
Net financial assets		-1,915.8		279.9					-47.2		-2,110.4		3,259.5	97.3				

Financial instruments	Institutional sectors																								
	Non financial corporations						Financial corporations						Households and NPISH						Rest of the world						
	MFI			Financial intermediaries and auxiliaries			Non-MMF investment funds			Insurance corporations and pension funds			General government			Households and NPISH			Rest of the world						
	Assets	Liabilities		Assets	Liabilities		Assets	Liabilities		Assets	Liabilities		Assets	Liabilities		Assets	Liabilities	Assets	Liabilities						
Monetary gold and SDRs																									
Currency and deposits																									
Debt securities																									
issued by MFI	1.0	239.8	460.7	104.8	3,567.4	8.0	322.6	104.1	197.3	128.7	7.5	621.4	15.7	20.0	62.6	122.0	129.3	42.2	2,209.1	248.3	1,421.8	778.7	8.0	104.8	
issued by General gov.	35.5	831.5	461.0	239.8	460.7	460.7	6.1	52.5	342.9	50.9	6.7	18.6	0.3	342.9	18.6	738.9	13.0	6.7	2,209.1	143.9	1.9	62.6	1.9	62.6	
issued by NFCs	4.2	151.8	46.1	46.1	95.2	95.2	5.0	12.8	197.3	3.6	1.3	0.3	15.7	18.6	0.3	78.2	15.5	1.6	2,209.1	4.4	0.4	78.2	4.4	78.2	
issued by Financial interm. and auxiliaries	4.7	182.4	184.3	182.4	9.7	9.7	27.7	242.2	197.3	1.3	58.8	242.2	15.7	18.6	0.3	-10.1	1.6	3.8	2,209.1	0.4	72.0	-10.1	0.4	-10.1	
issued by Insurance corp. and pension funds	19.2	16.5	164.9	164.9	184.3	184.3	2.3	6.4	197.3	1.3	58.8	242.2	15.7	18.6	0.3	78.2	1.6	3.8	2,209.1	0.4	72.0	-10.1	0.4	-10.1	
issued by Rest of the world	73.1	1,067.1	1,800.6	1,800.6	55.0	55.0	314.9	4.7	197.3	3.6	1.3	0.3	15.7	18.6	0.3	78.2	1.6	3.8	2,209.1	0.4	72.0	-10.1	0.4	-10.1	
Financial derivatives and stock options																									
Loans																									
granted by MFI	658.8	1,800.6	55.0	1,800.6	55.0	55.0	314.9	4.7	197.3	3.6	1.3	0.3	15.7	18.6	0.3	78.2	1.6	3.8	2,209.1	0.4	72.0	-10.1	0.4	-10.1	
granted by Financial interm. and auxiliaries	192.4			55.0			4.7		4.7				4.1	11.7			11.2		11.2	119.8			630.9	115.2	
granted by Insurance corp. and pension funds	38.7			55.0			4.7		4.7				4.1	11.7			11.2		11.2	119.8			630.9	115.2	
granted by General gov.	73.1			55.0			4.7		4.7				4.1	11.7			11.2		11.2	119.8			630.9	115.2	
granted by NFCs																									
granted by Households and NPISH																									
granted by rest of the world																									
Shares and other equity																									
Unlisted shares and other equity	698.3	1,818.1	171.0	171.0	162.6	162.6	82.9	53.1	50.8	50.8	113.1	103.5	8.7	113.1	103.5	270.7	920.4	836.0	558.8	270.7	50.5	270.7	558.8	620.8	
Listed shares	550.7	1,457.7	135.1	135.1	69.8	69.8	59.6	37.1	12.6	12.6	78.2	69.7	33.8	78.2	69.7	315.7	836.0	315.7	315.7	50.5	315.7	315.7	481.4		
issued by NFCs	147.6	360.4	35.9	35.9	92.8	92.8	23.3	16.0	38.2	38.2	34.9	33.8	33.8	34.9	33.8	243.1	84.4	243.1	243.1	50.5	243.1	243.1	139.4		
issued by MFI	68.0	360.4	17.3	17.3	92.8	92.8	11.1	8.4	6.9	6.9	2.5	2.5	2.5	2.5	2.5	203.3	31.3	203.3	203.3	50.5	203.3	203.3	139.4		
issued by Financial interm. and auxiliaries	49.9		8.7	8.7	92.8	92.8	2.8	0.1	1.8	1.8	0.7	0.7	0.7	0.7	0.7	15.6	8.1	15.6	15.6	50.5	15.6	15.6	139.4		
issued by Insurance corp. and pension funds	4.2		0.9	0.9	0.9	0.9	0.1	16.0	0.3	0.3	0.1	0.1	0.1	0.1	0.1	8.1	1.4	8.1	8.1	50.5	8.1	8.1	139.4		
issued by Rest of the world	8.8		1.9	1.9	1.9	1.9	1.0	8.4	0.7	0.7	0.6	0.6	0.6	0.6	0.6	16.0	2.9	16.0	16.0	50.5	16.0	16.0	139.4		
Investment fund shares																									
issued by Rest of the world	16.7		7.0	7.0	16.7	16.7	8.4	30.9	28.6	28.6	30.9	33.8	33.8	30.9	33.8	40.6	40.6	40.6	40.6	50.5	40.6	40.6	139.4		
Investment fund shares																									
issued by FMI	16.9	1.8	21.1	21.1	258.6	258.6	0.4	0.4	57.0	57.0	327.5	222.6	4.2	222.6	222.6	18.9	471.7	18.9	18.9	50.5	18.9	471.7	741.7		
issued by Non-MMF investment funds	0.2	1.8		1.8			0.4				0.1	0.1	4.2	0.1	0.1	-3.4	4.5	-3.4	-3.4	50.5	-3.4	4.5	741.7		
issued by Insurance corp. and pension funds	7.5		16.3	16.3	21.3	21.3	21.3	237.0	57.0	57.0	327.5	222.6	4.2	222.6	222.6	22.3	202.6	22.3	22.3	50.5	22.3	202.6	741.7		
issued by Rest of the world	9.2		4.8	4.8	237.0	237.0	237.0				56.2	56.2	4.2	56.2	56.2	22.3	202.6	22.3	22.3	50.5	22.3	202.6	741.7		
Insurance, pension and standardised guarantees																									
Other assets and liabilities																									
issued by Rest of the world	11.4	96.5	9.5	9.5	15.7	15.7	57.0	57.0	57.0	57.0	327.5	222.6	4.2	222.6	222.6	38.3	1,069.2	38.3	38.3	50.5	38.3	1,069.2	41.0		
Total	1,890.4	3,816.9	4,756.1	4,756.1	4,463.9	4,463.9	1,090.4	575.0	271.6	271.6	328.0	1,045.3	613.5	2,811.9	2,811.9	947.6	4,316.1	947.6	947.6	50.5	947.6	4,316.1	2,805.9		
Net financial assets	-1,926.5		292.3	292.3			515.4		-56.4	-56.4		-46.4	-2,198.4			3,368.5		3,368.5	3,368.5	50.5	3,368.5		50.7		

Appendix b: Allocation of unlisted shares across Institutional sectors (€ billion)

Institutional sector	NFCs		MFI		Financial intermediaries and auxiliaries		Non-MMF investment funds		Insurance corporations and pension funds		General government		Households and NPISH		RoW	
	Assets	Liab.	Assets	Liab.	Assets	Liab.	Assets	Liab.	Assets	Liab.	Assets	Liab.	Assets	Liab.	Assets	Liab.
2017																
Unlisted shares and other equity issued by	533.0	1,515.8	145.8	104.4	51.9	34.5	9.2	82.9	85.7	82.9	124.3	953.5	288.3	454.0		
NFCs	244.8	1,515.8	50.0		25.0		4.4		50.0		90.0	850.0	201.6			
MFI			10.0	104.4	6.8		1.2		5.2		15.0	46.0	20.2			
Financial interm. and auxiliaries			8.0		2.4	34.5	0.4		2.4		5.8	10.0	5.4			
Insurance corp. and pension funds			11.1		3.3		1.7		3.1	82.9	0.2	2.6	61.2			
Rest of the world	288.2		66.7		14.3		1.4		25.0		13.2	44.9		454.0		
2018																
Unlisted shares and other equity issued by	544.1	1,431.7	139.1	70.8	59.5	37.6	11.7	76.2	82.6	76.2	126.8	836.7	303.7	488.0		
NFCs	233.0	1,431.7	44.0		26.0		5.2		48.0		90.0	750.0	235.5			
MFI			8.0	70.8	8.0		1.8		4.0		16.0	26.0	7.0			
Financial interm. and auxiliaries			6.5		3.9	37.6	0.5		2.0		6.0	10.0	8.7			
Insurance corp. and pension funds			10.2		4.8		3.6		1.7	76.2	1.1	2.2	52.5			
Rest of the world	311.1		70.4		16.8		0.6		26.9		13.7	48.5		488.0		
Q2 2019																
Unlisted shares and other equity issued by	550.7	1,457.7	135.1	69.8	59.6	37.1	12.6	69.7	78.2	69.7	127.7	836.0	315.7	481.4		
NFCs	233.6	1,457.7	50.0		27.8		6.1		46.0		91.0	750.0	253.2			
MFI			4.0	69.8	6.0		2.0		4.0		16.5	25.0	12.3			
Financial interm. and auxiliaries			3.5		3.5	37.1	1.6		1.5		4.5	3.0	19.5			
Insurance corp. and pension funds			8.3		4.4		2.2		0.3	69.7	1.5	22.3	30.8			
Rest of the world	317.1		69.3		17.9		0.7		26.4		14.2	35.7		481.4		

Appendix c: Allocation of Insurance products across Institutional sectors (€ billion).

Institutional sectors	NFCs		MFI		Insurance corp. and pension funds		General government		Households and NPISH		RoW	
	Assets	Liab.	Assets	Liab.	Assets	Liab.	Assets	Liab.	Assets	Liab.	Assets	Liab.
2017												
Insurance, pension and standardised guarantees at	12.2	93.8	8.3	19.7	4.5	842.3	1.2	7.9	1,002.3	37.7	14.9	42.0
MFI				19.7						4.8		14.9
General government	7.9							7.9				
NFCs		93.8								93.8		
Insurance corp. and pension funds						842.3				842.3		
Housholds										37.7	37.7	
Rest of World	4.3		8.3		4.5		1.2		23.7			42.0
2018												
Insurance, pension and standardised guarantees at	11.2	96.5	9.5	19.2	4.3	843.0	1.1	9.2	1,007.6	38.3	13.4	40.9
MFI				19.2						5.8		13.4
General government	9.2							9.2				
NFCs		96.5								96.5		
Insurance corp. and pension funds						843.0				843.0		
Housholds										38.3	38.3	
Rest of World	2.0		9.5		4.3		1.1		24.0			40.9
Q2 2019												
Insurance, pension and standardised guarantees at	11.4	96.5	9.5	15.7	4.4	906.5	1.1	9.2	1,069.3	38.3	11.5	41.0
MFI				15.7						4.2		11.5
General government	9.2							9.2				
NFCs		96.5								96.5		
Insurance corpo. and pension funds						906.5				906.5		
Housholds										38.3	38.3	
Rest of World	2.2		9.5		4.4		1.1		23.8			41.0

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