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**“Piani Individuali di Risparmio”: a three-card trick or a concrete game
changer for Italian SMEs?**

(Investigations on the impact of the newbie instrument on financial markets and the real economy.)

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“Gentlemen, we have run out of money. Now we must think.”

Ernest Rutherford

Abstract

Piani Individuali di Risparmio (PIR), introduced in Italy by the “2017 Budget Law”, have the potential to challenge and pursue the development of the Country economy. The instrument was born to intercept Italian households’ wealth with the intention to channel it towards Small and Medium Enterprises and incentivize their access to capital markets.

The benefit for companies consists in the possibility to raise awareness about the management of their financial structure, looking for a better balance of capital sources and focusing on risk capital. The benefit for households is twofold: firstly, they can efficiently differentiate their portfolio composition, towards long term investments oriented on value creation; secondly, they can indirectly provide financial resources to domestic companies that invest, innovate and export and, thus, are worthy to be supported.

This study analyses PIRs from several different angles, considering the aspects which the legislator cares the most. In particular, our aim is to assess whether the newbie fiscal scheme effectively generated positive and lasting effects on the financial markets, on the asset management industry and on the real economy in Italy.

Abstract – Italian Version

I Piani Individuali di Risparmio (PIR), introdotti in Italia dalla "Legge di Bilancio del 2017", hanno tutte le carte in regola per perseguire lo sviluppo economico del Paese. Questi strumenti sono stati concepiti per intercettare il "tesoretto" delle famiglie Italiane, con l'intento di indirizzarlo verso le Piccole e Medie Imprese (PMI) ed incentivarne l'accesso al mercato dei capitali.

Per le imprese è l'occasione per pensare finalmente a un salto, anche culturale, nella gestione della propria struttura finanziaria, diversificandone le fonti, soprattutto in favore di operazioni legate al capitale di rischio. Per i risparmiatori, invece, è l'occasione giusta per diversificare in modo efficiente il proprio portafoglio, convogliando indirettamente risorse finanziarie nella parte sana del Paese che investe, innova, esporta e cresce.

Questo elaborato analizza quindi i Piani di Risparmio da tutte le prospettive possibili focalizzandosi sugli aspetti più cari al legislatore. Nello specifico, l'obiettivo è quello valutare se il nuovo schema fiscale abbia effettivamente avuto un impatto positivo e duraturo sui mercati finanziari, sull'industria del risparmio gestito e in ultima analisi, sull'economia reale del Paese.

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Executive Summary

This dissertation focuses on the “Piani Individuali di Risparmio” (PIRs), one of the most important innovation of the last years for the Italian financial market. PIRs were introduced from January, 1st, 2017 by the 232/2016 Law (‘Legge di Bilancio 2017’), recalling similar instruments already working in other countries, such as United Kingdom and France. The idea is exempting from taxes the financial incomes accrued on a portfolio of securities, held for a certain period of time by individuals, under fixed conditions. This is the result of the precise willingness of the legislator to support the development of Italian financial markets, by driving the savings of households especially towards SMEs. PIRs are believed to revolutionize the asset management industry and its dynamics. Their introduction, in fact, brings a wide set of challenges and opportunities for all the actors involved, in particular: households, SMEs and intermediaries. For investors, there is the opportunity to move their savings investing in more profitable financial products, while sustaining the Country’s economy at the same time. The challenge for them, instead, is to understand in deep how the instrument works, in order to be able to grab the fiscal benefits that PIRs can generate. The opportunity for SMEs is given by the fact that, for the first time, a huge amount of capital collected from savers becomes available on the Italian financial market. Given that the vast majority of Italian SMEs is not listed, in order to enter the basket of securities where PIRs can invest in, the challenges for them would be twofold. First of all, they need either to list themselves or to issue new bonds on capital markets; then Italian SMEs should find ways to enhance their visibility, in order to become a potential target for PIRs’ investments. For the few already listed SMEs, of course, it would be only a matter of struggling for higher appeal towards PIR funds’ managers. Finally, for intermediaries, the opportunity is to increase their fee-related activities, lowering the dependence from the credit lending business. On the other hand, the challenge for them consists in providing households with products that target companies characterized by high growth potential, therefore offering to investors a concrete and profitable way to support the real economy. Considered what we just outlined, the success of PIRs will thus depend on the interaction and commitment of the above-mentioned actors.

The aim of this thesis is to give an assessment of the PIR instrument, based on the impact that it has had on the Italian financial markets and real economy, after two years from its release. Before doing so, it is necessary to better display what the instrument was meant for. We can distinguish two main objectives from the side of the legislator: the first one, circumscribed to Italian SMEs, is to provide them with fresh capital to boost their growth; the other one, more general, is to foster the expansion of Italian capital markets, that turns out to be systematically underdeveloped with respect to stock exchanges of comparable European countries. The fuel for this instrument is represented by the Italian households' savings, that, as a matter of fact, are locked into bank deposits. Italian families, in fact, were culturally anchored to the idea that bank accounts are the safest place where to keep their money. PIRs were structured so that, through the tax exemption on capital gains, they could drive Italian households towards more profitable and long-term oriented investments. Given the purposes of the instrument, the valuation has been performed by looking both at the demand-side (i.e., households), and at the offer-side (i.e. SMEs), taking into account also that intermediaries are fundamental as a bridge for matching the two sides.

We structured our dissertation in 6 chapters:

In **Chapter 1**, a rigorous review of the context of analysis provides an in-depth investigation of the determinants which lead to the credit crunch. For sure, the triggering events for this issue were the global financial crisis of 2008 and the subsequent sovereign debt crisis; the proximity in time of these two events made the credit crunch even more impacting. After having traced the scenario at European level, we focus on Italy, where some endemic factors further amplified the effects of the credit crunch. An example could be the structural weakness of Italian SMEs, due to a too low level of capitalization and to a strong dependency upon the banking system. So, in Italy, the credit crunch and, consequently, the stricter constraints on the lending activity of banks, brought such a lack of financing sources that many companies were forced to look for other financing solutions.

In **Chapter 2**, we go through all the available alternative financing solutions in Italy: we classify them according to their novelty level. Business Angels, Venture Capitalists, Private Equity and IPOs are old-fashioned funding sources to raise equity capital, while old-

fashioned channels to raise debt for SMEs are Mini-Bonds and Basket Bonds. We identify also some disruptive (technology enabled) financing solutions, like Crowd-funding, ICOs, Direct lending and Invoice trading. For all of them, we provide a brief explanation of the way in which they work, and an overview of the market in Italy. PIRs were born as a tool with the objective to encourage alternative financing solutions.

Chapter 3 is dedicated to an exhaustive explanation of the PIR normative. The main issue about PIRs is that, since their conception, several incongruences and criticalities came out. So, we sum up all the most important developments and clarifications about the newbie instrument, considering, in particular, the guidelines document provided by the Italian Minister of Economy and Finance in October 2017, the Circolare of Agenzia delle Entrate n. 3/E in February 2018, and information provided by Assogestioni. Then, we outlined some future advisable developments as, for example, turning PIRs into close-end funds, always investing into SMEs. The second half of the chapter is dedicated to an overview on some more or less similar measures developed at international level, in order to identify best practices and criticalities and to make it possible, eventually, a comparison. In fact, being aware of the answers given by international legislators to the same issue, could furtherly help in fine-tuning PIRs in the future.

In **Chapter 4** and Chapter 5 we look at PIRs from the standpoint of, respectively, Italian households and SMEs. In particular, Chapter 4 addresses the offer-side, willing to understand whether so far PIRs have been able to attract Italian retail investors or not. In fact, on one side, this solution can be considered appealing per se for the final customer; on the other side, our concern is in verifying if the intermediators that distributed PIR compliant financial products operated in the real interest of investors, without deteriorating margins with extraordinary high fees. Answered to this question, in the last paragraph of this chapter we provide an estimation of the total potential offer of capital in the future.

Chapter 5 is aimed at assessing whether the capital collected was effectively supplied to Italian SMEs. To do so, we analyse the prospectus of most important PIR compliant funds in terms of asset under management, tracing where funds were invested. Since we are talking about SMEs, the focus was on the Mid, Small and AIM segments. Then, another step

has been to evaluate the impact that this new flows had on financial markets. On the primary market we look at the number of IPOs, at the capital increases, and at the dynamics of alternative financing solutions; on the secondary market, we consider volumes, liquidity and returns. We conclude talking about non listed SMEs: the third section of Chapter 5 is dedicated to providing an estimation of their total potential demand for capital in Italy.

The last chapter of our thesis, **Chapter 6**, is dedicated to a questionnaire we prepared to be addressed to all the companies that went public on the AIM market between 2015 and 2018. Our purpose is to collect and share the experience of entrepreneurs that already approached capital markets, with the main objective of highlighting the benefits and costs, the advantages and the drawbacks of the stock exchange.

In our view, the main value added of this work is to look at PIRs from several different angles, considering the aspects which the legislator cares the most. It gives a full picture of the instrument, at two years from its launch, and the analysis is structured in a way that could be possibly replicated to update the valuation in the future.

Introduction

The introduction of the “Piani Individuali di Risparmio” (PIRs) was one of the most important events of 2017 for the Italian financial market. Initial forecasts have been largely overcome by reality. Since their introduction, the total amount collected by PIRs has exceeded € 18 billion and we estimate that in five-years period, up to 2021, this sum can reach € 70-90 billion of assets under management. Considering the PIRs’ structure, which impose to invest at least 21% of the portfolio in national SMEs, our forecasts be confirmed, this would mean additional resources in the next 3 years of € 14.7-18.9 billions. The economic and financial crisis of the last decade brought the limits of SMEs’ financial structure out, revealing an extreme dependency on the banking system. The effect of the crisis and the increasing capital requirements deteriorated assets’ quality on the balance sheet of banks, and generated a contraction in the provision of credit. Companies have seen a radical reduction in the financial resources supplied by the banking system. This raises the question of the sustainability of SMEs’ financing mechanism, predominantly fed by the commercial banking system. So, it generated the need for these companies to diversify their sources of financing, turning to alternative financing solutions. In addition, the regulatory changes that banks themselves are experiencing will inevitably lead to changes in the composition of the intermediation margin, towards more fee-related and less credit-oriented service activities. From the point of view of savers, bank deposits and investments in government bonds proved to no longer represent efficient and effective instruments, at least if used alone. For sake of diversification, households need to look for a more balanced portfolio composition, by finding alternative forms of investment, more oriented towards the long term and the value creation, that bring financial resources available to the healthy part of the business system in the search for returns consistent with the risks assumed. Moreover, the detractors of PIRs should consider that the possible € 70-90 billion are anyway less than 2% of the over 4,000 billions of financial wealth held by Italians. The real scope of PIRs is to represent a virtuous mechanism of channelling financial resources to the real economic system and, in particular, acting as a new finance tool for supporting SME. For companies, it is an opportunity to finally think about a jump, even cultural, in the management of their own finance, by diversifying the sources both

with transactions on the debt market and, above all, with risk capital operations, including the listing. Besides, market conditions for SMEs' listing are more favourable today, thanks to liquidity and transaction costs. For savers, it is an opportunity to diversify their portfolio more efficiently and effectively, bringing financial resources to the healthy part of the country that invests, innovates, exports and grows. Lastly, for intermediaries, it is an opportunity to make the economic results less dependent on the credit activity that has manifested some critical elements, especially in the current rate system. This occasion, however, needs to be managed with responsibility and care in order to not waste the enormous potential that the PIRs have, this requires at least three conditions to be verified: careful identification by the intermediaries of the companies on which to allocate the resources collected; from the side of companies, a responsible search for serious and concrete projects of growth and innovation is expected, ; for savers, a careful selection of the most appropriate PIR product. This is the only way for PIRs' to generate positive and lasting effects on the asset management industry and on the real economy system of our Country.

1. Context of Analysis: The Credit crunch issue and the peculiarities of the Italian economy

The word **credit crunch** is generally related to a contraction on the credit offer provided by the banking system towards companies and households. This causes a contraction of investments that progressively forces the economy to slow down, putting the basis for a recession: people lose their jobs, companies shut down business and finally the GDP decrease. In recent years, the credit crunch represented the main plague for the European economy, and a big deal for governments. Between 2010 and 2016, Italy registered an investment reduction of € 31 billion¹. In those years, the European Commission forced the state member to implement austerity policies. Government had to reduce investments and cut on costs to respect very tight limits on their expenditure capacity: the common objective was to reduce debt. In addition, banks suffered the new regulations coming from the Basel Committee on Banking Supervision such as Basel III that put additional constraints on the Bank capacity to lend money. In this scenario, two events happened: **a)** companies, struggling to raise money from the banking system, started to consider alternative financing solutions; **b)** intermediaries understood the need to fulfil the demand of capital that banks were not able to satisfy. Indeed, new financial instruments were introduced in the market. In particular, referring to the Italian case, we observed a series of intervention to sustain financial markets. We are talking about the introduction of Mini-Bonds instruments, fiscal incentives to incentivize company's IPOs and the newbie "Piani Individuali di Risparmio" also called PIR or in English ISA "Individual Saving Accounts".

But which were the causes of the credit crunch and why it had such a harmful impact on Italy? In the following **paragraph** we will try to answer these questions. In **paragraph 1.1** we will discuss the path to the credit crunch and its effect on the European countries, starting from the origins of the Global Financial Crisis. Then **paragraph 1.2** will focus on Italy, to stress out its peculiarities, and its challenges. The topics that we will debate in

¹ Source: analysis by Confesercenti on data from the bank of Italy.

paragraph 1.2 are: issues of the Italian banco-centric financing system, the characteristics of the entrepreneurial ecosystem in Italy, that is composed especially by not listed Small and Medium Enterprises (SMEs), and the role of financial markets, in this case of the Milan Stock Exchange, operating to diversify SMEs strategies to raise capital for investments and to mobilize Italian households' savings, among the highest in Europe.

1.1. From Lehman Brothers to the Sovereign Debts crisis: The path to the credit crunch issue

In this paragraph, we will illustrate the steps that led to the problem of the credit crunch in Europe. In particular we will start observing the causes of the Global Financial Crisis trying to consider all the relevant actors involved in it. Then we will focus on how it was possible to spread it all over the world and put the basis for the Sovereign debt crisis. Finally, we will discuss the impact of the credit crunch phenomenon in Europe.

1.1.1. The Global Financial Crisis (GFC): the causes and the actors involved

Everything began in 2007 with a crisis in the subprime² mortgage market in the United States and developed into a full-blown international banking crisis with the collapse of the investment bank Lehman Brothers on September 15, 2008. However, the causes of the

² In finance **subprime lending** means making loans to people who may have difficulty maintaining the repayment schedule. Indeed, **subprime mortgages** are characterized by higher interest rates, poor quality collateral, and less favorable terms in order to compensate for higher credit risk.

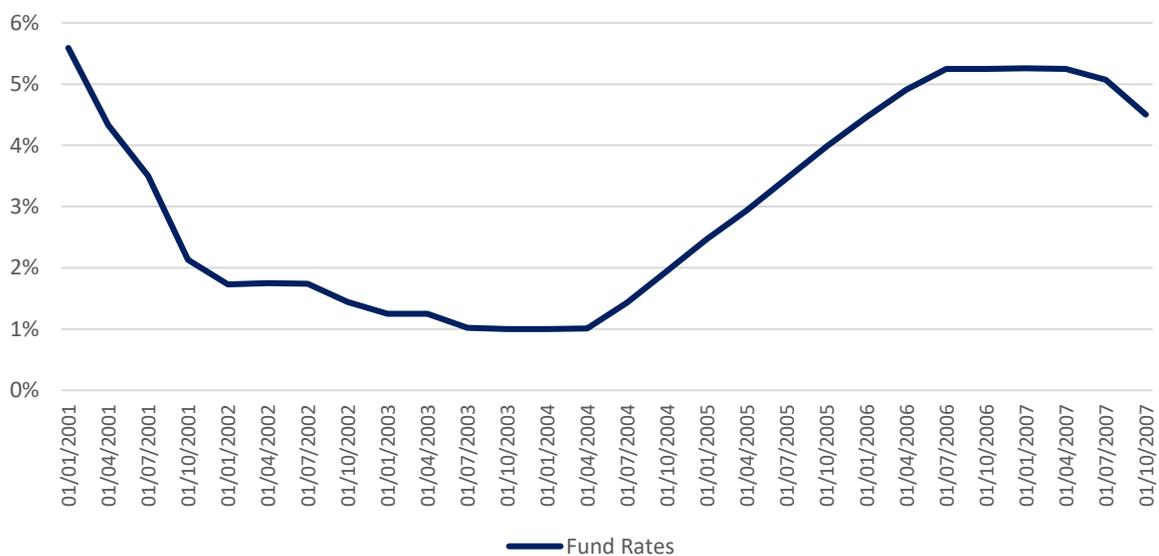
Global Financial Crisis (GFC) cannot be linked only to the fault of the mortgage market. Four main causes can be identified:

- a) Low interest rates and the housing boom;
- b) Fraudulent and opportunistic underwriting practices;
- c) Opacity in the risk profile of sophisticated financial instruments;
- d) The housing boom collapse.

a) Low interest rates and the housing boom

After the dot-com crisis and the terrorist attacks of 2001, FED decided to cut fund rates (*Graph 1*) to prevent deflation risk and soften the effects of the two events. Federal fund rates were ca. 6% in 2001 and were reduced to ca. 1.5% in 2002 and then 1% in 2003³.

Graph 1: Fed's Fund Rates

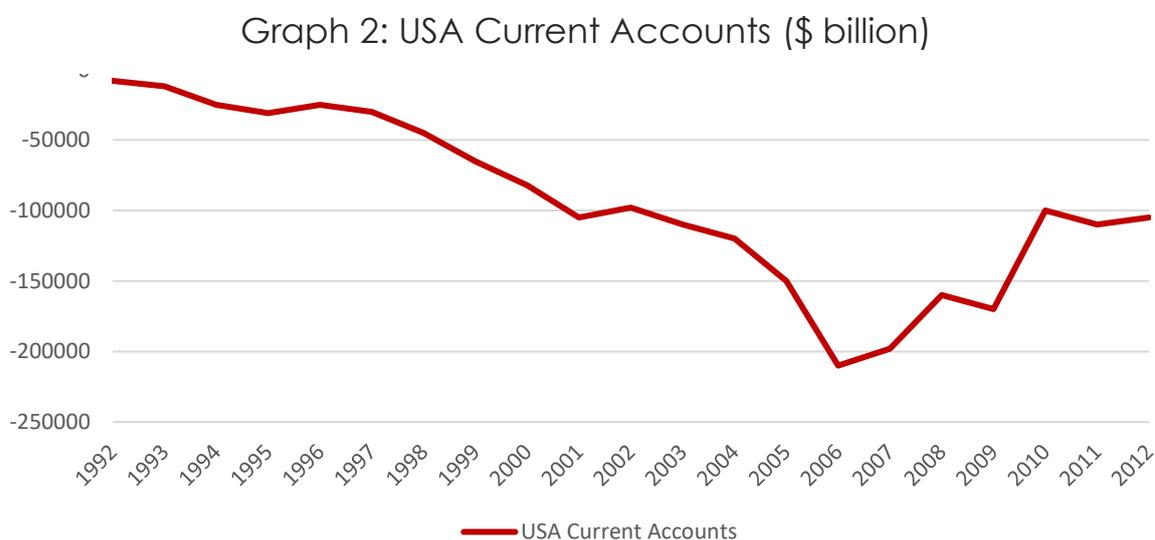


Sources: trading economies and students elaborations

³ Sources: <http://www.federalreserve.gov/monetarypolicy/openmarket.html>

In addition, downward pressure on interest rates was created by the high and increasing US account deficit, which peaked along with the housing bubble in 2006. Federal Reserve chairman Ben Bernanke⁴ explained that between 1996 and 2004, the US current account deficit increased by \$250 billion, from 1.5% to 5.8% of GDP (**Graph 2**). To finance this deficit, the US Government issued treasury bonds that were subscribed by many emerging countries running trade surplus, such as China, other Asian developing economies and all the oil-exporting nations. In this view, the excess of savings over investment, characteristic of these emerging market economies, popularly referred to the “global saving glut”, led to a surge in capital inflows to the United States that increased available credit and lowered interest rates. In fact, when the demand for Bond increases the price of bonds increases too. As a consequences rates decrease as they are inversely proportionate to bond prices.

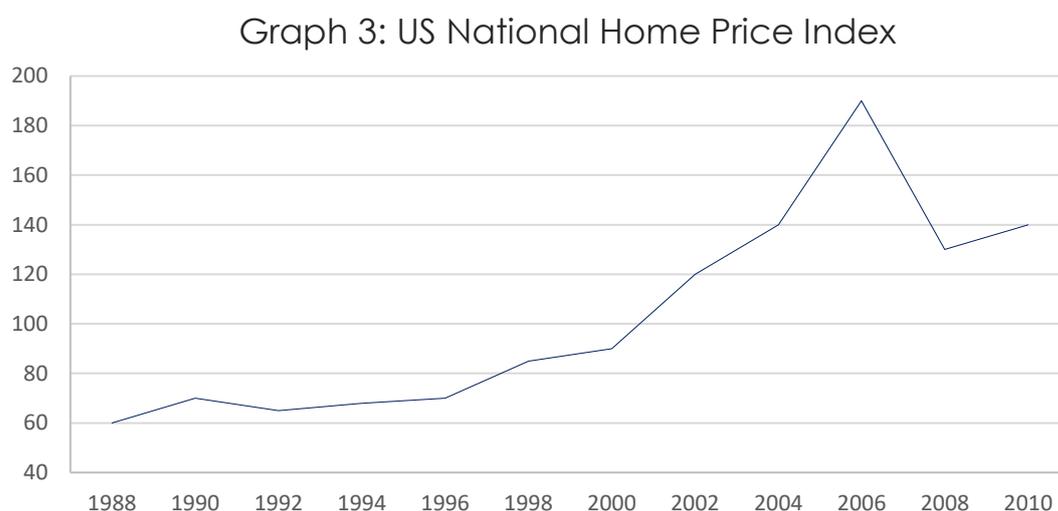
$$\text{Bond Price} = \frac{\text{Par Value}}{\text{rate } (r)}$$



Sources: trading economies and students' elaborations

⁴ Source: (Bernanke, 2005, 2007)

Thus, we can say that both the accommodative monetary policy of the FED and the “global saving glut” contributed in different ways to lowering interest rates. This led to a credit market boom in the following years that fuelled the house market (**Graph 3**).

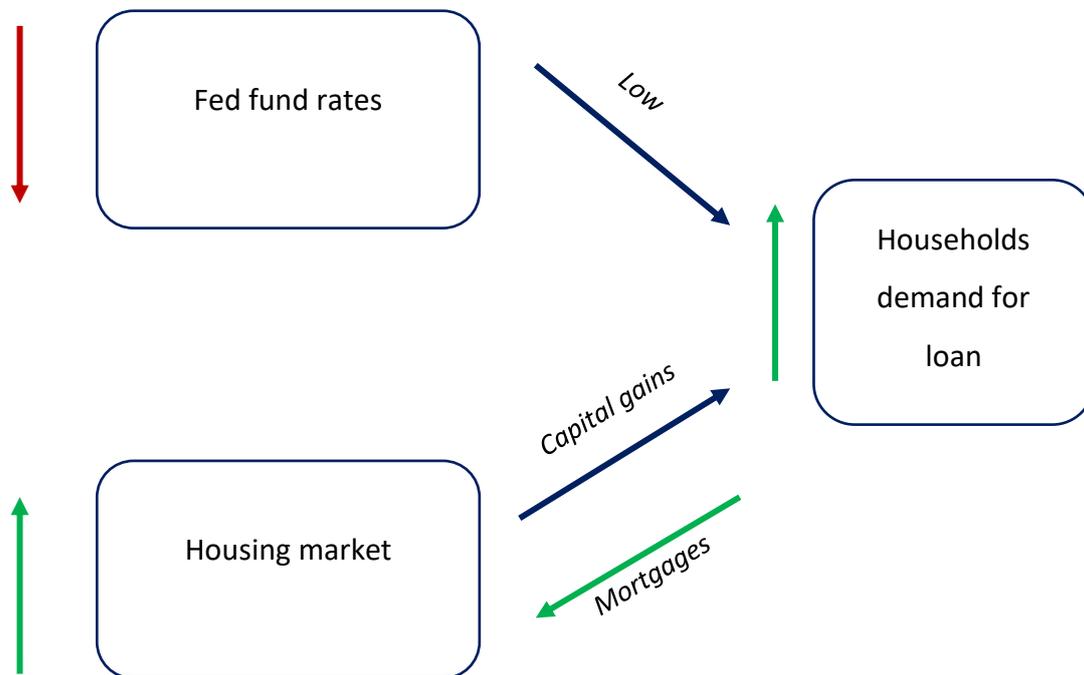


Sources: trading economies and students' elaborations

The over-supply of credit affected the demand for new houses. In 2005, 1,283,000 new single-family houses were sold, compared with an average of 609,000 per year during 1990–1995. The largest home builders, such as D. R. Horton, Pulte and Lennar saw their largest share prices and revenues in 2004–2005. D. R. Horton's stock went from \$3 in early 1997 to all-time high of \$42.82 on July 20, 2005. Pulte Corp's revenues grew from \$2.33 billion in 1996 to \$14.69 billion in 2005. In addition to this, primarily home equity loans and cash out refinancing grew considerably since the early 1990s. According to US Federal Reserve estimates, in 2005 homeowners extracted \$750 billions of equity from their homes (up from \$106 billion in 1996), spending two thirds of it on personal consumption, home improvements, and credit card debt.

So, the problem existed because the credit was fuelling housing instead of business investment. This created an uncontrolled asset appreciation, with specific to the housing sector (**See Chart 1**) that was a major determinant of the rise in consumer spending.

Chart 1: Housing bubble scheme



Sources: students' elaborations

b) Fraudulent and opportunistic underwriting practices

The market for mortgage loans is characterized by asymmetric information between the borrowers, who know their financial situation, and the mortgage lenders who have only incomplete information on the borrowers. Due to this asymmetric information in issuing loans, the loan origination process involves significant fixed costs related to setting up the infrastructure necessary to evaluate loan applicants, issue loans, service payments, and handle the legal process if default occurs. Consequently, loan origination is performed by financial institutions with the necessary resources and expertise. The loan originators finance the loans with debt and equity. Since direct lending requires for lenders to assume a financial risk, they should also be very severe in the assessing of the real credit worthiness of borrowers. Thus, if credit lending constraints exist, the scheme above (*Figure1*) works until households have the adequate credit worthiness to obtain mortgages from banks. This means that if constraints holds, the number of potentials client asking for a loan to buy

a house is limited and linked to their personal wealth or job. However, to take advantage of the economies of scale in their infrastructure, Banks (the loan originators) started to sell these loans to third parties. The third parties are: Special Purpose Vehicles (SPV) such as banks subsidiaries, the government-sponsored enterprises Fannie Mae and Freddie Mac and more in general all the entities that are able to issue credit derivatives such as Mortgage Backed Securities (MBS) or more in common Asset Backed Securities (ABS). This form of indirect lending is called securitization.

The Process of securitization

Step 1: Borrowers (households) obtain loan from the financial institutions (banks), thanks to the intermediation of Mortgage Brokers;

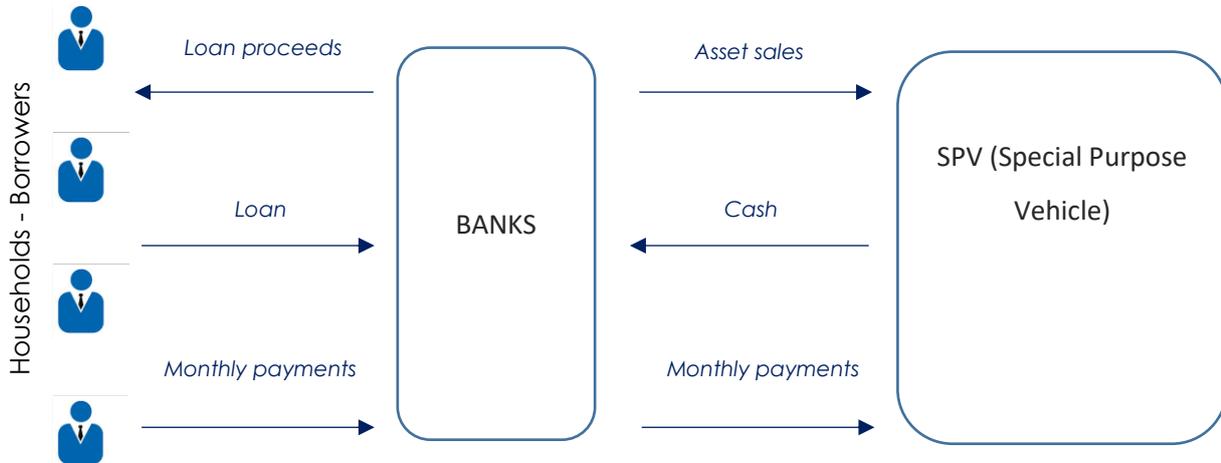
Step 2: Banks pool mortgage together to create baskets of loans and sell these packages to a Special Purpose Vehicle (SPV), often instituted by the Bank itself;

Step 3: The SPV sells these pooled mortgages to investors issuing securities. The underwriter helps the SPV issuing securities and the Rating Agency provide the correct risk profile for these kinds of instruments. Securities are called ABS or MBS in case the underlying asset is a commercial mortgage;

Step 4: Banks obtain funds from the SPV.

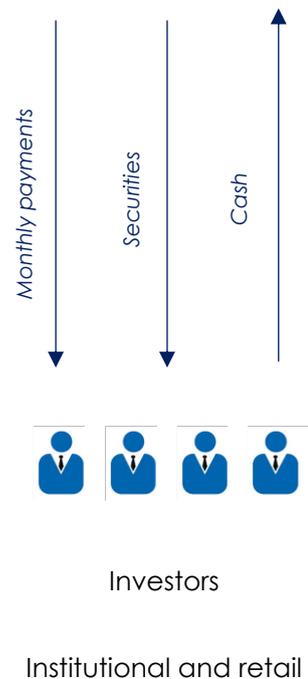
(See Chart 2) for a graphical representation.

Chart 2: Securitization Scheme



Enablers

- Mortgage Broker: is the link between banks products (mortgaged) and households;
- Underwriter: allow the SPV to issue securities against pooled asset (mortgages);
- Rating Agency: rates the credit risk of ABS.



Sources: students' elaborations

The issue is that there is a conflict of interest: the mortgage originators can be incentivized to supply more loans if they do not write the loans on their Balance sheet. In this case, If the loans default, the costs are not absorbed by the mortgage originators, but by third parties. When sold to third parties, the mortgage originators are only responsible for fraudulently issued loans. Hence, under the right circumstances, indirect lending has the potential to generate lax lending standards where loans are issued in vast quantities to

borrowers who should not receive the loans. In fact, there are evidences that during 2000 and 2005, constraints on loans decreased. Subprime lending standards declined in the USA: in early 2000, a subprime borrower had a FICO⁵ score of 660 or less. By 2005, many lenders dropped the required FICO score to 620, making it much easier to qualify for prime loans and making subprime lending a riskier business. One subprime mortgage product, that gained wide acceptance, was the no income, no job, no asset verification required (NINJA) mortgage. Informally, these loans were aptly referred to as "liar loans" because they encouraged borrowers to be less than honest in the loan application process.

Thus, on one side we had the demand for loans that was increasing as interest rates were low and households could benefit from the appreciation of assets. On the other side the banking system was increasing fuelling that demand without taking into consideration the credit worthiness of the loan subscriber.

In addition to this phenomenon, we have also to underline the role of Fannie Mae and Freddie Mac. Fannie Mae and Freddie Mac were two government-chartered institutions created to buy up mortgages and provide mortgage lenders with more money to lend.

The **Federal National Mortgage Association (FNMA)**, commonly known as **Fannie Mae**, is a United States government – sponsored enterprise (GSE) and, since 1968, a publicly treated company. Founded in 1938, during the Great Depression, the corporation's purpose is to expand the secondary mortgage market by securitizing mortgages in the form of mortgage backed securities (MBS). Its "brother" organization is the Federal Home Loan Mortgage Corporation (FHLMC), better known as Freddie Mac.

⁵ A FICO score is a type of credit score created by the Fair Isaac Corporation. Lenders use borrowers' FICO scores along with other details on borrowers' credit reports to assess credit risk and determine whether to extend credit.

The **Federal Home Loan Mortgage Corporation (FHLMC)**, known as **Freddie Mac**, is a United States government – sponsored enterprise (GSE) headquartered in Tysons Corner, Virginia. The FHLMC was created in 1970 to expand the secondary market for mortgages in the US. Along with the Federal National Mortgage Association (Fannie Mae), Freddie Mac buys mortgages on the secondary market, pools them, and sells them as a mortgage backed security to investors on the open market. This secondary mortgage market increases the supply of money available for mortgage lending and increases the money available for new home purchases. The name, "Freddie Mac", is a variant of the company's full name that had been adopted officially for ease of identification.

Following their mission to meet federal Housing and Urban (HUD) housing goals, GSEs such as Fannie Mae, Freddie Mac and the Federal Home Loan Banks (FHL Banks) had striven to improve home ownership of low and middle income families, underserved areas, and generally through special affordable methods such as "the ability to obtain a 30-year fixed-rate mortgage with a low down payment, and the continuous availability of mortgage credit under a wide range of economic conditions". Then in 2003–2004, when the houses market boomed and mortgage originators began to distribute more and more of their loans through private label (MBSs), GSEs lost the ability to monitor and control mortgage originators. Competition between the GSEs and private securitizes for loans further undermined GSEs' power and strengthened mortgage originators. This contributed to a decline in underwriting standards and was a major cause of the financial crisis.

Investment banks were more willing to securitize risky loans because they generally retained minimal risk. Whereas the GSEs guaranteed the performance of their MBSs, private securitizes generally did not, and might only retain a thin slice of risk. Often, banks would offload this risk to insurance companies or other counterparties through credit default swap (CDS) making their actual risk exposures extremely difficult for investors and creditors to discern.

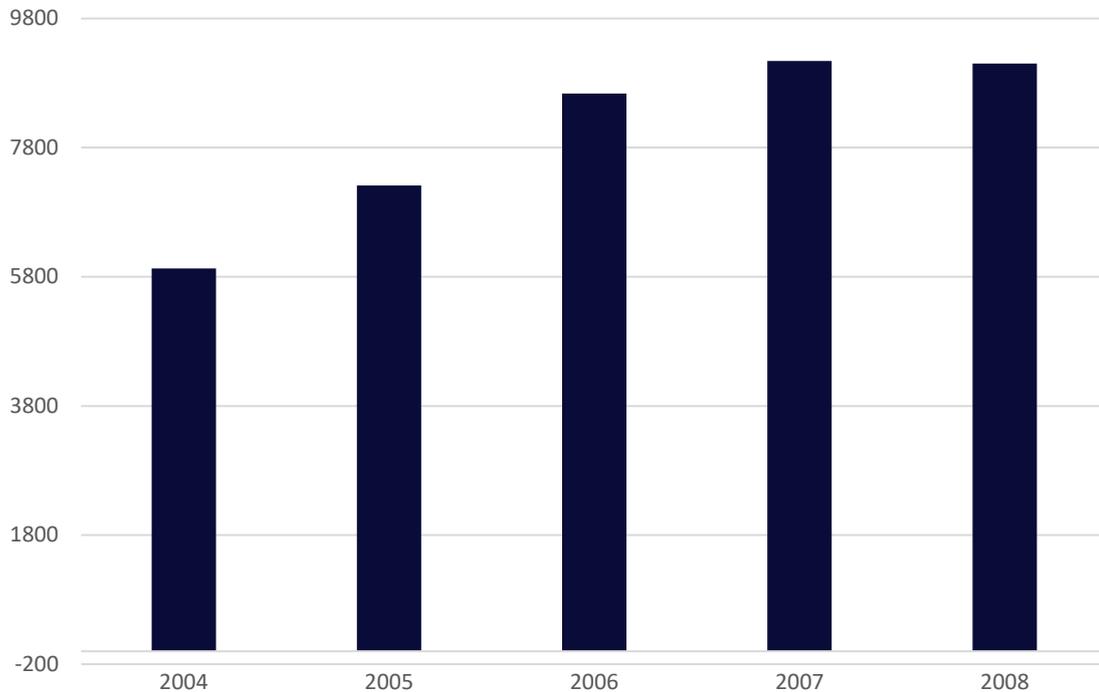
The shift toward riskier mortgages and private label MBS distribution occurred as financial institution sought to maintain earnings levels that had been elevated during 2001–2003 by an unprecedented refinancing boom due to historically low interest rates. Earnings depended on volume, so maintaining elevated earnings levels means expanding the borrower pool using lower underwriting standards and new products that the GSEs would

not (initially) securitize. Thus, the shift away from GSEs securitization to private-label securitization (PLS) also corresponded with a shift in mortgage product type, from traditional, amortizing fixed rate mortgages (FRMs) to non-traditional, structurally riskier, no amortizing, adjustable-rate mortgages (ARM's), and in the start of a sharp deterioration in mortgage underwriting standards. The growth of PLS, however, forced the GSEs to lower their underwriting standards in an attempt to reclaim lost market share to please their private shareholders. Shareholder pressure pushed the GSEs into competition with PLS for market share, and the GSEs loosened their guarantee business underwriting standards in order to compete. In contrast, the wholly public FHA/Ginnie Mae maintained their underwriting standards and instead decreased its market share.

The growth of private - label securitization and lacks of regulations on this market segment, resulted in the oversupply of under-priced housing finance that led, in 2006, to an increasing number of borrowers, often with poor credit, who were unable to pay their mortgages – particularly with adjustable rate mortgages (ARM), causing a precipitous increase in home foreclosures. As a result, home prices declined as increasing foreclosures added to the already large inventory of homes and stricter lending standards made it more and more difficult for borrowers to get mortgages. This depreciation in home prices led to growing losses for the GSEs, which back the majority of US mortgages. The US Treasury Department and the Federal Reserve took steps to boost confidence in the corporations, including granting both corporations' access to Federal Reserve low-interest loans (at similar rates as commercial banks) and removing the prohibition on the Treasury Department to purchase the GSEs' stocks. Despite these efforts, by August 2008, shares of both Fannie Mae and Freddie Mac had tumbled more than 90% from their one-year prior levels.

Thus, what happened was that these two government-chartered institutions started to sell the mortgages to investment banks that would bundle them with hundreds or thousands of others into a “mortgage-backed security” (see **Graph 4**) increasing the process of securitizations. The results were that in those years, billions of structured financial products came to the market.

Graph 4: Mortgage Based Securities Outstanding
in billions OF U.S. dollar



Sources: SFIMA research statistics

c) The opacity of Financial engineering and the role of Rating Agencies

We saw that the key causes of the expansion in the housing price boom were: low interest rates and a shift towards lax mortgage lending standards and easy credit. In addition, we discussed also the fact that securitization played an important role in transferring the risk from financial institution or loan supplier to financial markets. However, financial markets and more in specific financial instruments are verified by rating agencies, whose objective is to evaluate corporate and structured debt issues, assigning them ratings according to their credit quality. In the US, credit rating agencies are those organisms designated by the SEC as "national statistical rating organizations" which include Moody's, Standard and Poor's (S&P), and Fitch Investor Services, among others. Therefore, if financial products credit risk profile were assessed by Rating Agencies the question is:

How it was possible for investors to buy very poor and risky assets?

The answer is in: **a)** the complexity of the financial products that were engineered during those years; **b)** the conflict of interest within Rating Agencies.

Regarding financial engineering, during those years, investment banks and operators introduced many different instruments with specific characteristics and features and different risk profile: Asset Backed Securities (ABS), Credit Default spread (CDS) and Collateralized Debt Obligations. Description of these instruments follow:

i. Asset Based Securities (ABS)

An ABS can be seen as a liability issued by a financial institution or a corporation. However, the legal structure of the entity issuing the ABS is quite different from a typical corporation, and for this reason the issuer is usually called special purpose vehicle (SPV). The assets purchased by an SPV are called the collateral pool. The collateral pool usually consists of a collection of loans of a particular type, for example, either auto loans, student loans, credit card loans, commercial real estate loans, or residential mortgages. In the discussion of the credit crisis below, the ABS of greatest interest are those with residential mortgage loan collateral pools. The liabilities issued by these SPVs are often called RMBS (residential mortgage backed securities). For simplicity, however, we will still refer to these RMBS as ABS.

To finance the purchase of the collateral pool, the SPV issues debt securities. The debt is issued in various tranches, from the senior bond tranches to the mezzanine and junior bond tranches. These bond tranches have different claims to both the cash flows from the collateral pool and any losses realized on the collateral pool. The cash flows, consisting of interest and principal payments, are paid to the most senior bonds, then the mezzanine bonds, then the junior bonds, with the residual going to the equity. Losses are realized in the reverse order.

Table 1: Tranche characteristics

ASSETS	LIABILITIES	WATERFALL	
Collateral Pool	Senior bond tranches	↓ Cash flows	↑ Losses
	Mezzanine bond tranches		
	Junior bond tranches		
	Equity		

Sources: students' elaborations

Before issuing the various bond tranches in the market, they need to be rated by at least one of the credit rating agencies, but more often two. Because of the waterfall, the senior bond tranches are rated more highly than the mezzanine, which in turn are rated more highly than the junior bond tranches, which may not even be rated.

ii. Credit Default Swaps (CDS)

Credit default swaps (CDS) are insurance contracts written between two counterparties insuring the face value of a particular corporate, sovereign, or structured debt issue for a fixed period of time. For selling the CDS, the insurer receives premiums, paid regularly (usually quarterly) over the life of the CDS contract. The premium payment is based on the nominal value of the contract. The nominal value of the contract is the aggregate value of the insured bond in dollars. When buying or selling a CDS at the market clearing spread, the value of the contract is zero.

For corporate or sovereign debt, if a default or credit event occurs, the contract ends and the seller of the CDS either pays the face value of the debt and receives the debt issue (if physical settlement) or pays the difference between the face value and market price of the debt (if cash settlement).

Table 2: CDS scheme

BUYER	<i>Regular premium payments</i> →	SELLER
	<i>One-time credit event payment</i> ←	

Sources: students' elaborations

iii. Collateralized Debt Obligation (CDO)

Collateralized Debt Obligations can be of two form: cash flow CDO or synthetic CDO. A cash flow CDO is a type of ABS. The key difference between an ABS SPV and a CDO SPV is in the composition of the collateral pool. A subprime ABS has a majority of subprime residential mortgage loans in its collateral pool. On the contrary, a subprime CDO in its collateral pool, has a majority of mezzanine ABS bonds, rated below AAA. The collateral pool of ABS is composed by non-traded loans, while the collateral pool of CDOs is traded debt. Another minor difference is that CDOs waterfalls can be more complex, with various triggers that redirect cash flows to more senior tranches if certain collateralization or interest coverage ratios are violated (see Lehman 1998).

Given the complexity of the collateral pool and waterfall rules, CDOs are complex securities. An additional difficulty in evaluating CDOs is that each deal is slightly different in terms of its waterfalls, making modelling a tedious deal-by-deal exercise. This complexity was a key reason why many financial institutions, with limited research stablemen, depended solely on the credit agencies' ratings. In addition, this complexity in conjunction with their short-term compensation incentives provided the excuse for many financial institutions managers not to do their own due diligence.

CDO²s are CDOs in which the collateral pool mainly consists of mezzanine, junior or even the equity tranche bonds from subprime CDOs. Thus, a CDO² is a CDO whose collateral pool consists of other CDO bonds. A synthetic CDO is an ABS where the underlying collateral pool consists entirely of ABS CDS.

The problem was that for an investor that bought a CDO squared product, it was very difficult to really understand which were the assets behind that instrument and in particular which was the related credit risk and the losses in case of default, (**Table 3**). So, the role of credit agency was determinant to distinguish between good or bad instruments. But as we experienced from the crisis, Agency did not give a rating to those financial products in the correct way because of conflict of interest.

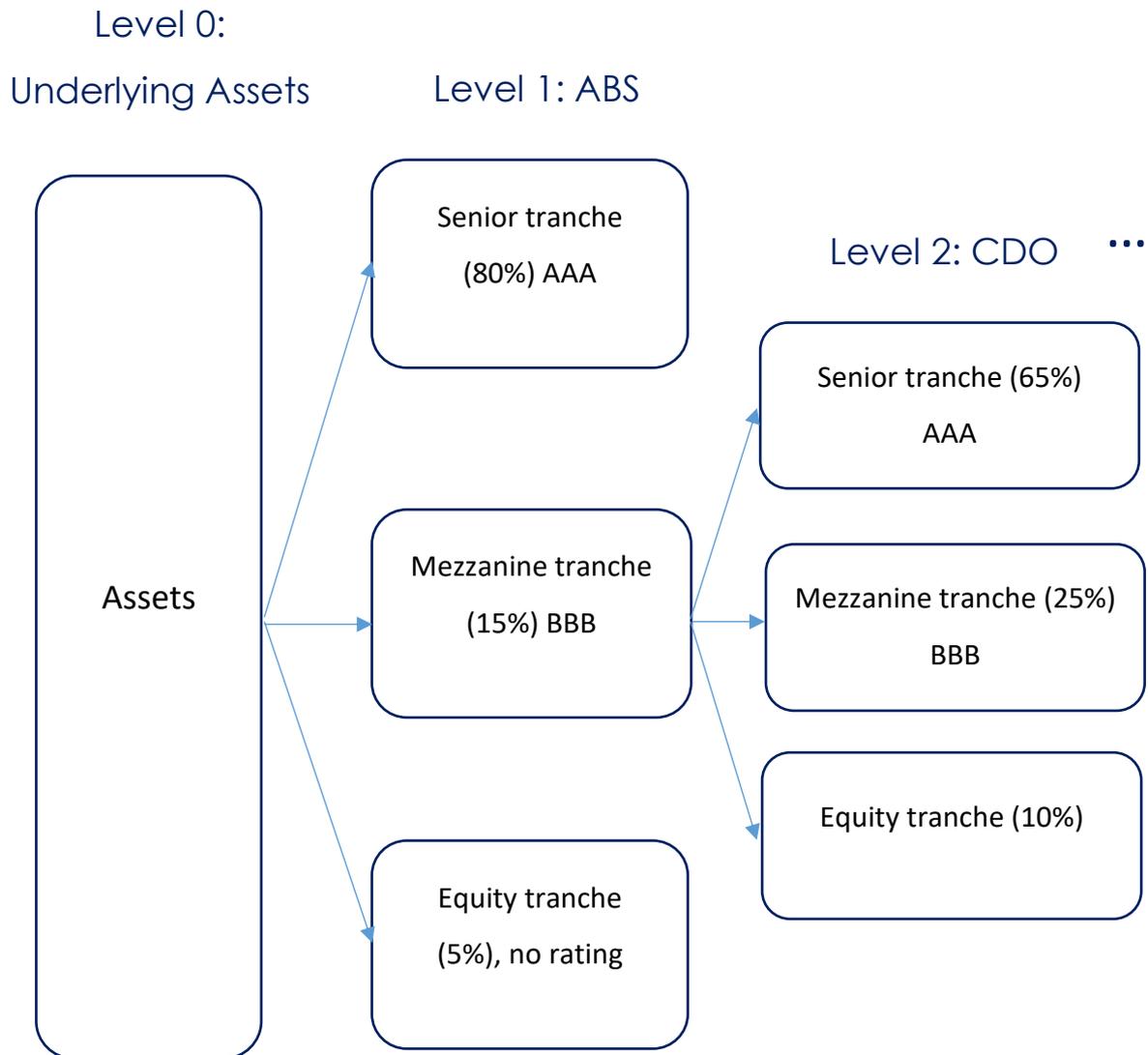
The issue is that Rating Agencies are paid by the entities that issue the debt. This payment is not a one-time fee, but better characterized as a stream of future payments for continued credit evaluations. It is quite common, therefore, that borrowers choose among rating agencies based on the ratings obtained (see Coval, Jurek, Staord - 2008). This payment fee structure creates a conflict of interest for the rating agency between issuing accurate ratings and retaining business clients (see U.S. Senate Report (2011); and Jarrow and Xu (2010) for an economic model of this conflict of interest).

Table 3: Losses scheme in ABS and CDOs

Losses on U. Assets	Losses to mezzanine. Tranche of ABS	Losses to equity tranche of CDO	Losses to mezzanine. Tranche of CDO	Losses to senior tranche of CDO
10,0%	33,3%	100,0%	93,3%	0,0%
13,0%	53,3%	100,0%	100,0%	28,2%
17,0%	80,0%	100,0%	100,0%	69,2%
20,0%	100,0%	100,0%	100,0%	100,0%

Sources: students' elaborations

Chart 3: Losses scheme in ABS and CDOs tranches



Sources: students' elaborations

d) The housing boom collapse

The housing price boom was too good to last. Housing prices crashed for three related reasons. First, the demand of houses saturated, creating a downward trend in housing

prices. Second, the FOMC⁶ decided for a tightening monetary policy starting in June 2004. Third, in 2006 the FED rates exceeded 5%. This led to a rise in adjustable rates of mortgages and overdid the paying capacity of those. Together, the increase of these issues, impacted on the ability of many subprime borrowers to meet their mortgage payments. Home prices began to decrease, and the America's housing market turned. As a consequence, a chain of reaction exposed fragilities in the financial system. Pooling and other clever financial engineering did not provide investors with the promised protection. Mortgage-backed securities slumped in value. Supposedly safe CDOs turned out to be worthless, despite the ratings agencies' seal of approval. It became difficult to sell risky assets at almost any price, or to use them as collateral for the short-term funding that so many banks relied on. Fire-sale prices, in turn, instantly dented banks' capital thanks to "mark-to-market" accounting rules, which required them to revalue their assets at current prices and thus acknowledge losses on paper that might never actually be incurred.

Trust, the ultimate glue of all financial systems, began to dissolve in 2007, a year before Lehman's bankruptcy as banks started questioning the viability of their counterparties. Banks and other sources of wholesale funding began to withhold short-term credit, causing those most reliant on it to founder. Complex chains of debt between counterparties were vulnerable to just one link breaking. Financial instruments such as credit-default swaps (in which the seller agrees to compensate the buyer if a third-party default on a loan) that were meant to spread risk turned out to concentrate it. AIG, an American insurance giant buckled within days of the Lehman bankruptcy under the weight of the expansive credit-risk protection it had sold. The whole system was revealed to have been built on flimsy foundations: banks had allowed their balance-sheets to bloat but set aside too little capital to absorb losses. In effect they had bet on themselves with borrowed money, a gamble that had paid off in good times but proved catastrophic in bad.

⁶ Federal Open Market Committee

1.1.2. The steps to the Sovereign Debt Crisis

A sovereign debt crisis is referred to the situation in which a country is thought to be unable to pay its bills. It starts with difficulties for the Country in obtaining low-interest rate from lenders. Why? Investors become concerned that the country could not afford to pay back bonds. They discount the probability of a default and start selling treasury bonds on the market increasing pressure on yields. Indeed, as investor starts to worry, they require higher and higher yields to offset their risk. The higher the yields, the more it costs the country to refinance its sovereign debt. In time, a government really cannot afford to keep rolling over debt. Consequently, it defaults. Investors' fears become a self-fulfilling prophecy.

In this paragraph we will illustrate the causes and the effects of the European sovereign debt crisis focusing on how it evolved in the so called credit crunch phenomenon. In particular, we identified two main enablers to the SDC:

- a) The effects of the GFC;
- b) Structural differences among European countries

a) The effects of the GFC;

A first group of factors that can be considered as enablers to the European sovereign debt are the direct consequences of the GFC. Indeed, after the fault of Lehman Brothers three things happened: first, the real GDP shrank 4.5% in 2009 in the Euro Area; second, there was a reduction in tax revenues because of the slowing economy; third, fiscal plans were introduced to sustain the real economy.

The problem was that as government increased expenditures to create fiscal incentives and sustain the economy but, tax income decreased and the GDP slowed, the current balance of the member states started to worsen and deficits rose. In **Table 4** we can observe the deterioration of governments balances.

Table 4: Governments Net balances and consolidated Debt

	Net balances of Governments (%GDP)		Governments consolidated debt (% GDP)		
	2006	2010	2006	2010	2013
Greece	-5,9%	-11,2%	103,5%	146,2%	177,0%
Ireland	2,2%	-32,3%	23,6%	86,8%	120,0%
Portugal	-4,3%	-11,2%	69,2%	96,2%	129,0%
Spain	2,2%	-9,4%	38,9%	60,1%	93,7%
Italy	-3,6%	-4,2%	102,5%	115,3%	128,8%
Germany	-1,7%	-4,2%	66,4%	81,0%	77,4%

Source: AMECO

In 2006 Spain and Ireland had budget surplus, but in 2010 they registered negative figures in their balances. In particular, Ireland had a budget deficit of ca. one third of the GDP. As deficit increased debt level increased too. In Ireland, debt levels tripled in four years. In Spain and Greece, it nearly doubled. As a comparison if we look at German debt it increased as well after the financial crisis because their banks were strongly connected to the USA banks. Indeed, from **Table 5** we can see that also Germany provided generous support to the financial system. But the debt level has not risen as in the PIIGS⁷ (Portugal, Italy, Ireland, Greece and Spain) countries. Furthermore, it decreased in 2013 as the country recovered.

⁷ PIIGS is an acronym, similar to others like BRICS and EAGLES, that defines a certain group of countries that have some commonality in location and economic environments. In this case, PIGS includes Portugal, Italy, Ireland, Greece and Spain

Table 5: Governments support to the financial system

	Liquidity support <i>(% point increase in central banks claims on financial institutions as a ratio of deposits and foreign liabilities)</i>	Gross Restructuring costs (% GDP)	Asset Purchase (% GDP)
Greece	42,3	23,5	n.d.
Ireland	16,3	40,7	20,3
Portugal	16,7	0	n.d.
Spain	3,5	3,8	1,8
Italy	5,7	0,3	n.d.
Germany	3,5	1,8	1,1

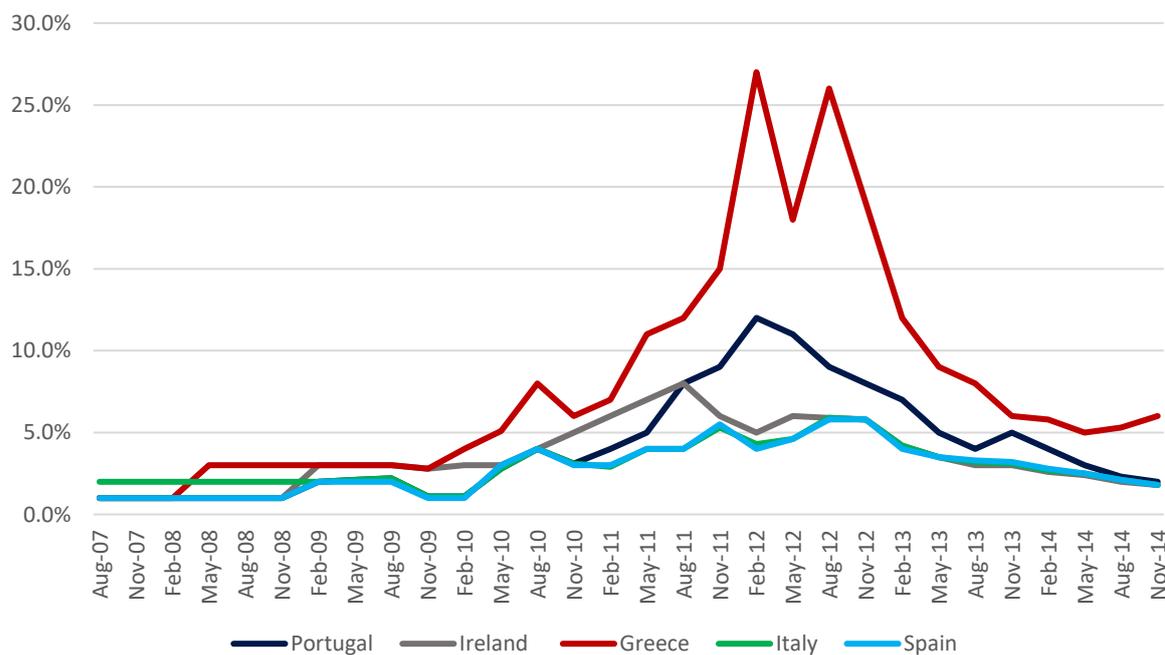
Source: AMECO

Despite raising deficits, until the end of 2009 the problem was thought to be related to the banking system. Sovereign debt markets remained stable initially (Lane 2012) and all the European countries were able to refinance their debt through financial markets. The issue came with the election in Greece. The newly elected government revised the budget deficit/GDP estimates for 2009 from ca. 6% to almost 13%. This shocked the market as investors were concerned about Greece capabilities to sustain such a level of deficit, considering the economy was slowing. Thus, rating agencies downgraded the Greek bonds. However, the government was still reliable and that credibility helped in reassuring the market and contributed to contain the spread around 5%. Things changed in 2010 when Greece was condemned for falsification in its public finance figures. This was a very big problem because impacted on the credibility of the Greece government. The lower the credibility of an institution the lower the willingness of investors to finance it and the higher the cost they charge to the financing. Indeed, in 2010 Bond holders started to sell treasury bonds and the yield increased sharply. The spread between GIPSI countries and the German bunds can be observed in **Graph 5**. The spread of Greece bonds was clearly distant from the others and reached ca. 27 percentage points by February 2012.

In May 2010 Greece could not be able to borrow from markets. When the country was about to default, the Troika⁸ provided €110 billion rescue fund to Greece. After these events, the perceived risk for countries not being able to repay their debt increased among investors, especially for those nations in which the ratio of debt over the GDP was close to or higher than one and the forecast of economic growth were poor and disappointing. Indeed, PIIGS countries were downgraded by rating agencies. The debt crisis was spread all over Europe. The escalation of the crisis follows.

After the Greek crisis, both rating agencies and investors in sovereign debt markets turned their eyes on Ireland because of high deficits figures and rising debt level. Rating agencies downgraded Ireland quickly and investors lost confidence. The rates of the 10-year sovereign bond exceeded 10%.

Graph 5: Sovereign Bond Spread



Source: Bloomberg

⁸ The **European troika** is the designation of the triumvirate representing the European Union in its foreign relations, in particular concerning its common foreign and security policy (CFSP). Currently, while talking about the Troika (especially in the media) one refers to a decision group formed by the European Commission (EC), the European Central Bank (ECB) and the International Monetary Fund (IMF).

As a consequence, Ireland was shut out from markets on November 2010. Troika provided € 90 billion rescue fund to the country. In May 2011, then it came to Portugal where the Troika granted a loan of 78 billion euros also to the Portuguese government. In the summer of 2011 the crisis reached also Italy and Spain. In Spain the problem was rooted in the banking system. With the burst of the housing bubble, banks' balance sheet deteriorated. On the other side the high level of debt in Italy worried investors. The 10 years yield of treasury bonds of these two countries increased contemporaneously. Credit agencies downgraded these bonds as well. However, the sovereign default of Spain and Italy threatened the existence of the Euro, as they were two very big economies of the euro area. Thus, the ECB started a program called Outright Monetary Transactions (OMT) and bought these countries bonds from the secondary market to support foreign bond markets.

b) Structural differences among European countries

The problems of the Euro Area countries dated back to Maastricht. In **Table 6**, one can follow the cumulative current account balances, the cumulative inflation between 2000 and 2007 and the real effective exchange rate (REER) in 1999 with respect to the historical average. If we consider data of Greece and Spain we can observe that the cumulative current account deficit was around 70 percent. The REER was also above the historical average in 1999 for these two countries. This means that they had entered the Euro Area with appreciated exchange rates. Intrinsicly, they had started with a disadvantageous position in competitiveness. In Portugal, the current account deficit was also high. In Ireland and Italy, the deficit was moderate but lower than zero. On the contrary, in Germany there was a cumulative surplus (+26%) and REER was at a 2,4% discount). In the deficit countries, the cumulative inflation was also above the normal. The lowest cumulative inflation was registered in Germany (12,9%).

Table 6: Current Accounts and Inflation in the Euro Area (2000-07)

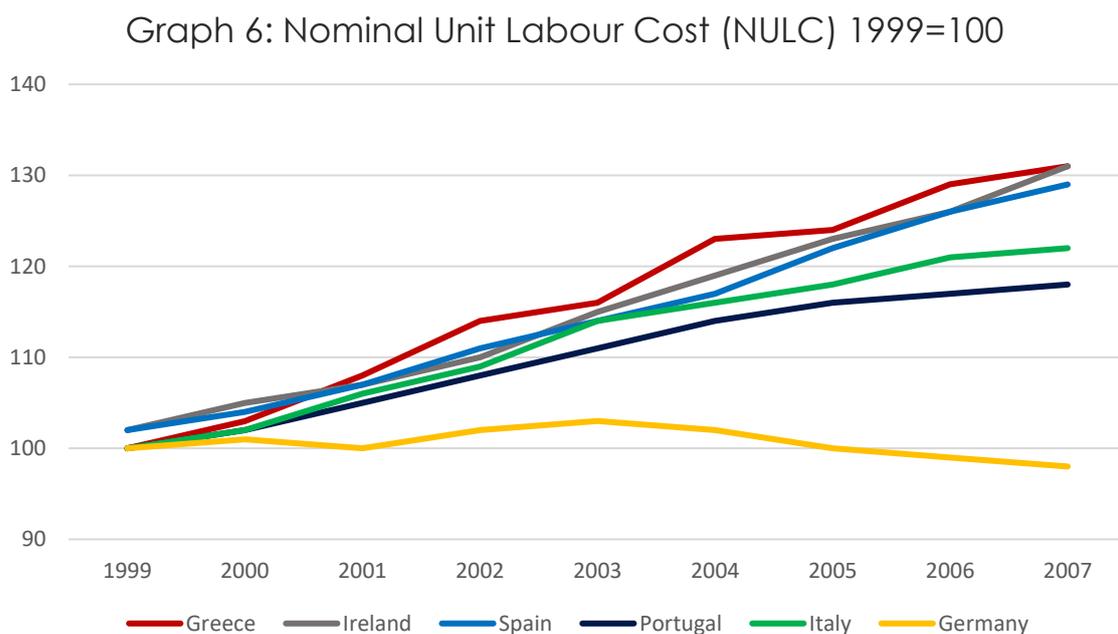
	Cumulative current account (as a % of GDP)	Cumulative inflation	REER in 1999 relative to 1980 -99 average
Greece	-67,0%	26,2%	9,4%
Ireland	-15,0%	32,0%	-5,7%
Spain	-71,0%	24,4%	12,3%
Portugal	-46,0%	25,8%	-1,0%
Italy	-10,0%	18,6%	-3,4%
Germany	26,0%	12,9%	-2,4%

Sources: Baldwin and Gros (2010), Chen et.al (2012) and AMECO

These data gave us a first explanation on why PIIGS countries had more disadvantages compared to Germany: they entered the euro with worse conditions. In particular they suffered from account imbalances that were below zero and thus they increased their debt level during the following years.

However, the problem is not only related to high debt level and huge account imbalances. Indeed, it is theoretically true that fast-growing countries can face current account deficits as it was for Greece, Ireland, Spain, etc. They could attract capital thanks to the high growth and finance these deficits. But with an exception: these funds should be channelled to the productive sectors to contribute to the future growth (Giavazzi and Speventa, 2010:7). But this was not the case. PIIGS countries did not invest the funds raised through public debt in productivity. Instead, they channelled funds to other destinations such as the housing market. The house prices rose 12.5 percent annually in Ireland between 1997 and 2007. In Spain, in the same period, house prices rose 8 percent annually. The point is that when financing current expenses with debt, countries must intervene in increasing productivity, working for example on reducing production cost, rather than inflating the demand. In Europe this issue wasn't perceived in the same way by all the governments because they operated with different policies and growth strategies. Thus, the effects of the crisis were a policy issue before than anything else.

In fact, Boltho and Carlin (2012) argued that rather than asymmetric shocks in the Euro Area, there were asymmetric policies. The reason behind this is the different socio-cultural structures of the countries. There are two different growth models that are prevalent in the Euro Area. “Core countries” like Germany, Austria, Netherlands and Belgium followed export-led growth strategies. They were able to decline their labour cost and gain a competitive advantage. Dustman et al. (2014), in their study, focused on German economy by stressing the role of several labour market reforms after the reunification on the success of Germany. Germany increased the labour market flexibility in this context. In 1996, with the cooperation of work councils, trade unions and employer associations, the zero-inflation in nominal unit labour cost was targeted in Germany. The bargaining process in Germany became decentralized. This enhanced the flexibility of the labour market (Bonatti and Fracasso, 2013:1029). In **Graph 6**, one can observe that, Germany was able to achieve lowest unit labour cost between 1999 and 2007.



Source: Bloomberg and students' computations

On the other hand, Greece, Portugal, Ireland, Spain and Italy followed demand-led growth strategies. (Hall, 2012: 360). In **Graph 6**, it could be observed that the unit labour cost climbed up in all GIPSI countries. Especially in Greece and Ireland the cumulative increase was nearly 35 percent during this period. In Spain the cumulative increase was above 30 percent.

The unit labour cost (ULC) is defined as the ratio of labour costs to labour productivity.

Nominal ULC (NULC) = $(D1/EEM) / (B1GM/ETO)$ with:

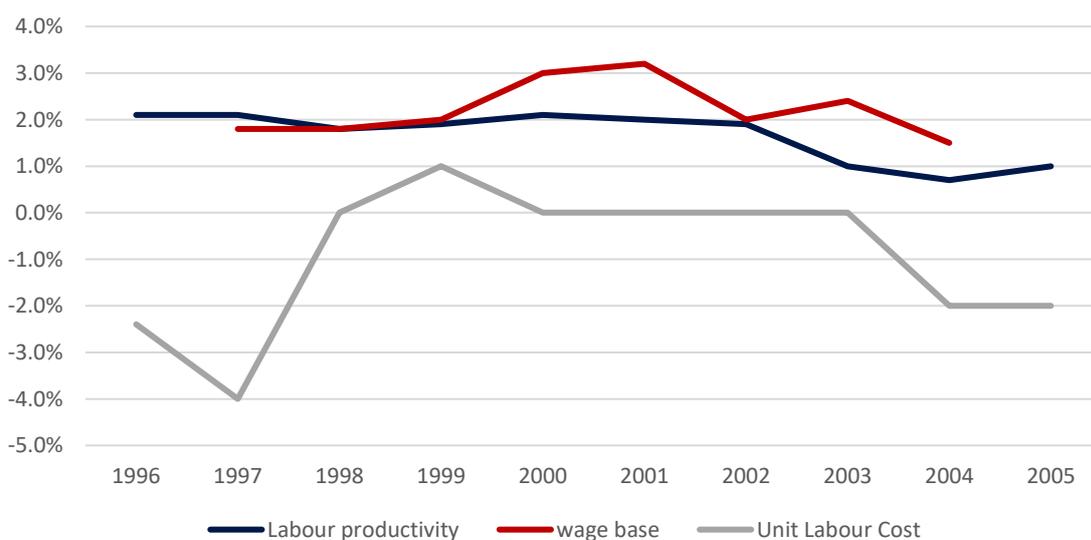
- D1 = Compensation of employees, all industries, current prices;
- EEM = Employees, all industries, in persons (domestic concept);
- B1GM = Gross domestic product at market prices in millions, chain-linked volumes reference year 2010;
- ETO = Total employment, all industries, in persons (domestic concept).

In other words, NULC are nominal labour costs per employee divided by real average value added (GDP) per worker.

In this sense there are two strategies to decrease NULC and become more competitive: **a)** reduce wages, decreasing the numerator of the ratio and consequently the value of NULC; **b)** increase the labour productivity, with an expansion of the denominator and consequently a reduction of NULC.

An example of strategy a) has been the case of Germany (see **Graph 7**) in recent years. Compared with other European countries, the increase in market sector wage costs has been very moderate between 2000 and 2007.

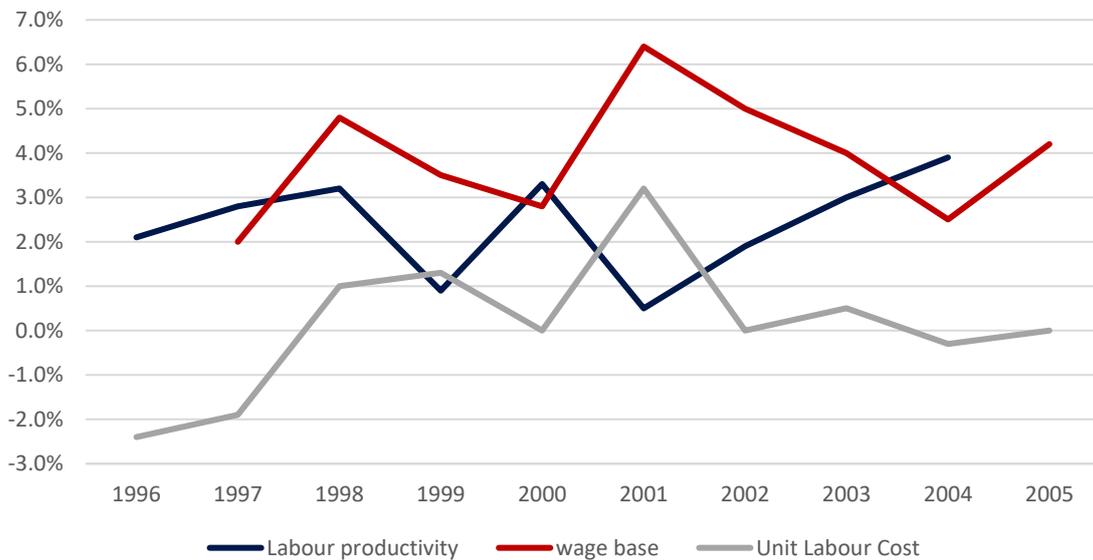
Graph 7: Wage base, productivity and unit labour costs in Germany



Source: Bloomberg and student computations

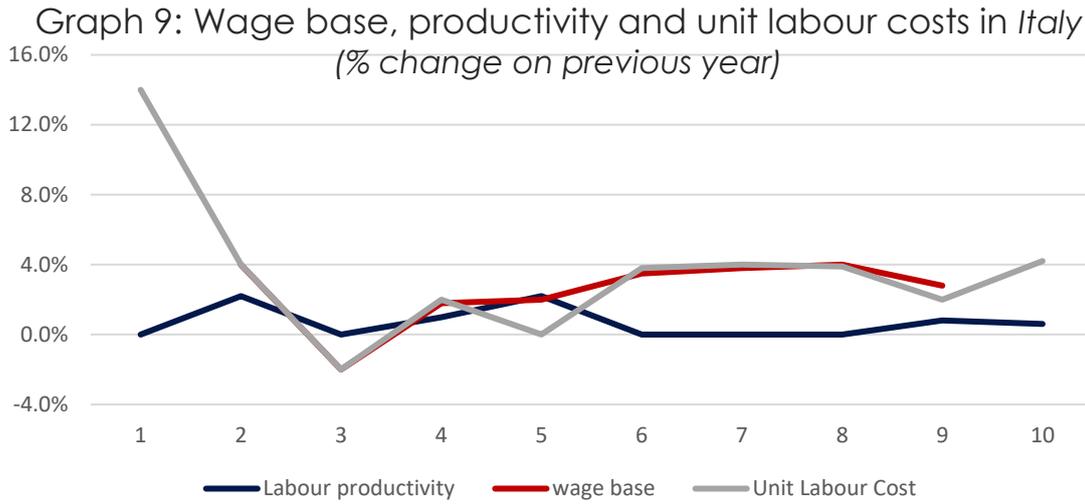
The second possibility to reduce unit labour consists is by using labour inputs more efficiently. An increase in labour productivity means that less labour is needed to realise a unit of output. The effect this will have on unit labour costs depends on the difference in development between the rise in wage costs and the rise in labour productivity. If labour productivity rises by enough, a significant rise in labour costs will not necessarily mean that unit labour costs also increase strongly. This can be seen clearly in Finland. On average, the market sector annual wage there has risen quite substantially in the last ten years, but the unit labour costs have risen hardly or not at all. This is because labour productivity has also risen quite strongly, see **Graph 8**.

Graph 8: Wage base, productivity and unit labour costs in Finland
(% change on previous year)



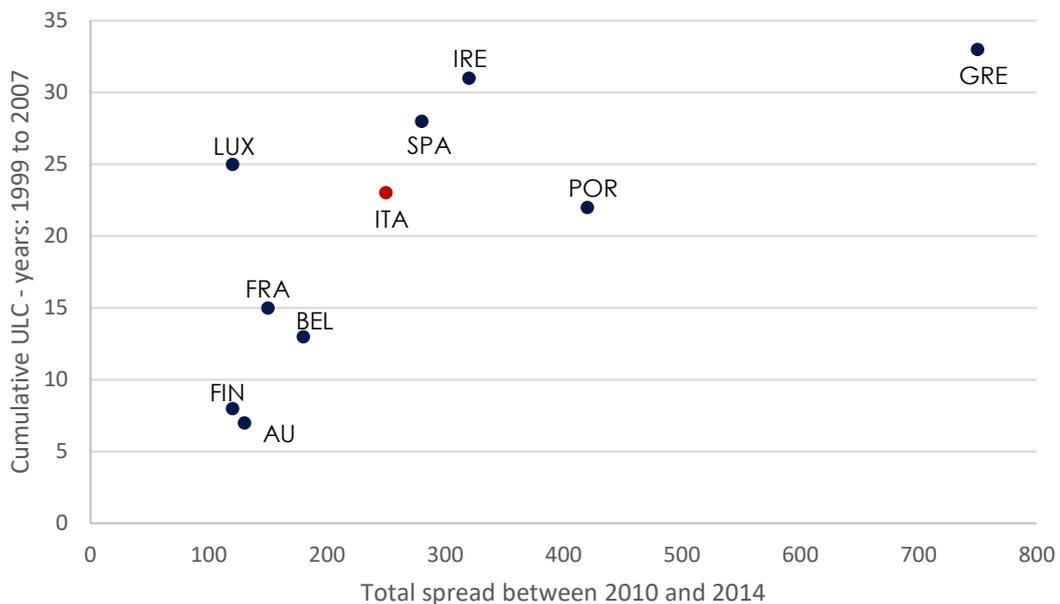
Source: Bloomberg and student computations

In the opposite situation, labour productivity does not rise by enough to be able to compensate the rise in wage costs. The consequence of this is a rise in unit labour costs. This has been the situation in Italy since 2001: a stagnation in labour productivity in combination with rising wages has led to a strong increase in labour costs per unit of output. **See Graph 9**. This is to say that PIIGS saw an increase in their NULC because they used to rise debt and increase current imbalance to finance consumption instead of invest into productivity.



Countries that had high unit labour cost after the introduction of Euro, lost competitiveness and faced large current account deficits. When the GFC hit those countries, banks' balance sheets deteriorated. Government intervened to avoid banking collapses. With the crisis unfolding in Greece, the banking crisis turned into a sovereign debt crisis and spread to other fragile economies of the union. The spread between the Member Countries bonds and German bunds spiked. **Graph 10** demonstrates this relationship. The y-axis, displays the cumulative increase in unit labour cost between 1999 and 2007. On the x-axis, the total spread during the SDC –between May 2010 and December 2014- could be observed. It is

Graph 10: Government's Total ULC vs Treasury yields



clear from the figure that there is a positive relationship between the unit labour cost increase after the introduction of the Euro and the spreads during SDC. In Greece, Portugal, Ireland and Spain the unit labour cost increase is the highest. That means the countries, which lost competitiveness after the Euro Area membership, were hit hardest by the SDC.

1.1.3. The Credit Crunch Issue

A DEFINITION FOR THE CREDIT CRUNCH

According to the Council of Economic Advisors (1991), credit crunch is *"a situation in which the supply of credit is restricted below the range usually identified with prevailing market interest rates and the profitability of investment projects"*. In other words, credit crunch specifically refers to a widespread reduction, *ceteris paribus*, in the supply of credit, both for unviable and viable firms (Costa and Margani, 2008).

However, the economics profession is unclear as to what constitutes a "credit crunch." The crucial differences in definition depend on the cause of the contraction and whether credit is rationed by means other than price.

Bernanke and Lown (1991) define a credit crunch as a decline in the supply of credit that is abnormally large for a given stage of the business cycle. Credit normally contracts during a recession, but an unusually large contraction could be seen as a credit crunch.

In their analysis, Bernanke and Lown compare the contraction in credit during the most recent recession to those in the previous five recessions. Total loans at domestically chartered commercial banks grew only 1.7 percent during the 1990–91 period, compared with an average of 7.1 percent during the previous five recessions. They conclude that there has been a credit crunch.

Bernanke and Lown attribute this reduced lending activity to demand and supply factors. Loan demand has been weak because borrowers' balance sheets have been weaker than normal, and as a result, borrowers have been less credit-worthy than usual. The supply of credit has been reduced by the decline in bank capital caused by severe loan losses during the recession (Clair and Yeats 1991). Bernanke and Lown's analysis indicates that the

demand factors have been far more important, accounting for three-fourths of the decline in lending in New England.

There is a disturbing dissonance created by the Bernanke and Lown definition of a credit crunch, the results of their analysis, and their conclusion that there was a credit crunch. They define the credit crunch as an abnormally large decline in the *supply* of credit. They argue that *demand* factors largely caused the reduction in lending. They then conclude that there is a credit crunch.

A second problem with the Bernanke and Lown analysis is their use of national data to determine if a credit crunch exists. Their cross-sectional analysis using state-level data assumes the imperfect substitutability of bank and nonbank credit and of bank credit from banks located in different states. Samolyk (1991) provides empirical evidence supporting this assumption. If bank credit cannot flow perfectly across state lines, however, then the problems of a credit crunch would be more likely to develop at the state level, not the national level, unless a nationwide economic shock caused the decline in bank capital.

The second definition of a credit crunch relies not on the contraction in lending but on the microeconomic principle of a shortage. If, at the current market price, the demand for a good exceeds the supply, then there is a shortage. The available supply will be rationed but by some means other than pricing. Non-price credit rationing may occur even in a market that might not be described as experiencing a credit crunch (Stiglitz and Weiss 1981). Owens and Schreft (1992) define a credit crunch as a period of sharply increased non-price rationing.

Owens and Schreft review historical episodes of non-price rationing—that is, credit crunches that were accompanied by binding interest rate ceilings, credit controls, or coercive posturing by administrative officials and bank regulators to discourage banks from lending. In the current recession, researchers argue, administrative officials and bank regulators have actively encouraged banks to lend.² Owens and Schreft do state that there was probably non-price rationing in loans secured by real estate, resulting from bank examiners' reaction to real estate loan losses. They cite the statements made by Robert Clarke, then comptroller of the currency, that discouraged banks from making real estate

loans. Owens and Schreft conclude that there is not a general credit crunch, but there might have been a sector – specific crunch in real estate. Since nonbank providers of credit also contracted their lending, Owens and Schreft attribute the decline in lending to ebbing loan demand.

The Owens and Schreft definition of a credit crunch has intuitive microeconomic appeal but may not provide the insights needed for economic policy analysis. Their definition does not consider actual lending activity. Consequently, a “credit crunch” can occur during a period of expanding credit as easily as during a contraction of credit.

Furthermore, Owens and Schreft dismiss anecdotal evidence from borrowers. They may be correct that borrowers would complain during any period of tight credit, but the type of complaint could be quite different. During non-price rationing, borrowers complain about not being able to get a loan at any price. During periods of simply tight credit, borrowers complain about the cost of credit.

Despite their differences, both the Bernanke–Lown and Owens–Schreft studies agree that a decline in credit demand explains the major part of the credit contraction, and both find little support for the explanation that more stringent bank examination practices account for the contraction in loan supply. Owens and Schreft link the decline in credit demand to the deterioration of real estate asset values, similar to the Bernanke and Lown view of weakened balance sheets.

The decline in credit demand can be ascribable to several factors due to the GFC: decrease of financial needs due to contraction in investments, drop of consumptions, weakness of the real estate market, worsening of bank clientele’s solvency (Panetta and Signoretti, 2010). The contraction in loan supply can be attributed to stricter regulation on the banking system that generated a downfall of bank loans granted to small and medium enterprises.

In addition, we observed in **paragraph 1.1.2**, that the sovereign debt crisis affected so much domestic banks, since they typically hold large portions of government securities in their portfolios both for investment reasons and as a primary source of collateral in repurchase market operations (RPO). Tensions on the government securities market entail, therefore, a **deterioration of the banking assets quality** and an increase of the funding cost. Besides,

profitability issues experienced by banks in a context of low interest rates, assets deterioration and worsening of the credit quality, have **reduced the propensity** of the banking institutes **to lend money** to families and enterprises, laying the foundations of the “credit crunch”. Indeed, in the economic system, banks have a crucial role: through their function of capital management and savings allocation, credit institutions are the primary source of external financing for entrepreneurial activity, in Italy as well as in the other countries, even where capital markets are more organized and developed (Signorini, 2012).

THE EFFECTS OF THE CREDIT CRUNCH

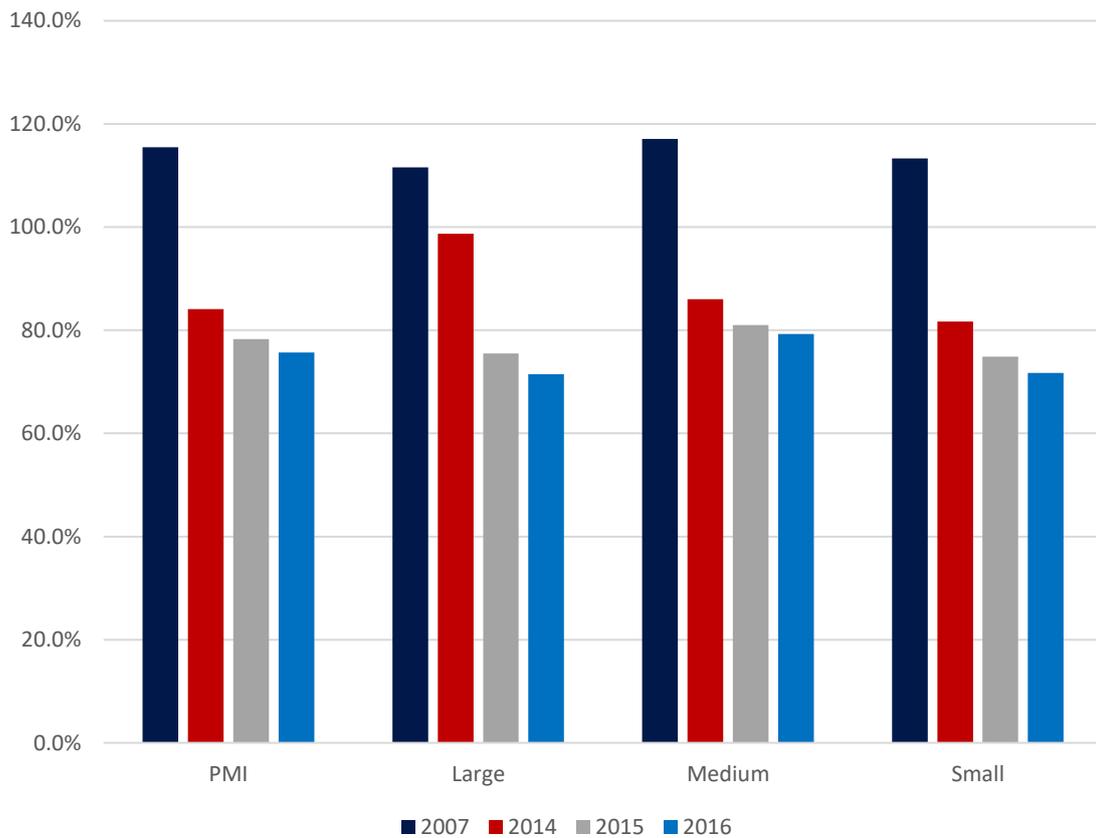
Between 2008 and 2014, the decline of almost ten percentage points of the Gross Domestic Product (-8.9% the cumulative decrease in the years of the economic crisis) has contributed to trigger a continuous decline in the demand for goods and services, forcing at the same time banks to run for cover, increasing the limits to the credit granted to companies. In our country, compared to the end of 2011, the stock of bank loans destined for the production system (non-financial companies and industrial companies), was reduced by 180 billion.⁹ As a consequence, companies reduced investments: between 2010 and 2016 there were a loss of investments equal to 31 billion euros¹⁰. These two events caused a decrease also in the number of small and medium-sized Italian companies that fell by 13 thousand units, reporting a drop in active companies of 9%.

The credit crunch issue hit Italy so badly that its effects are still present in the economy. Looking at recent data provided by the *2018 mini-bond report*, published by the **Observatory on mini-bond** of Politecnico di Milano, we can see that the existing stock of short-term bank loans for non-financial companies decreased over the course of 12 months from € 269.5 billion to € 239.3 billion, while long-term loans fell from € 513.8 billion to € 491.3 billion. In addition, we can observe that the level of leverage decreased too. The

⁹ Source: Centro Studi CNA, luglio 2018

¹⁰ Source: analysis conducted by Confesercenti on data from the Bank of Italy

Graph 11: Companies financial leverage - Years 2007 to 2016

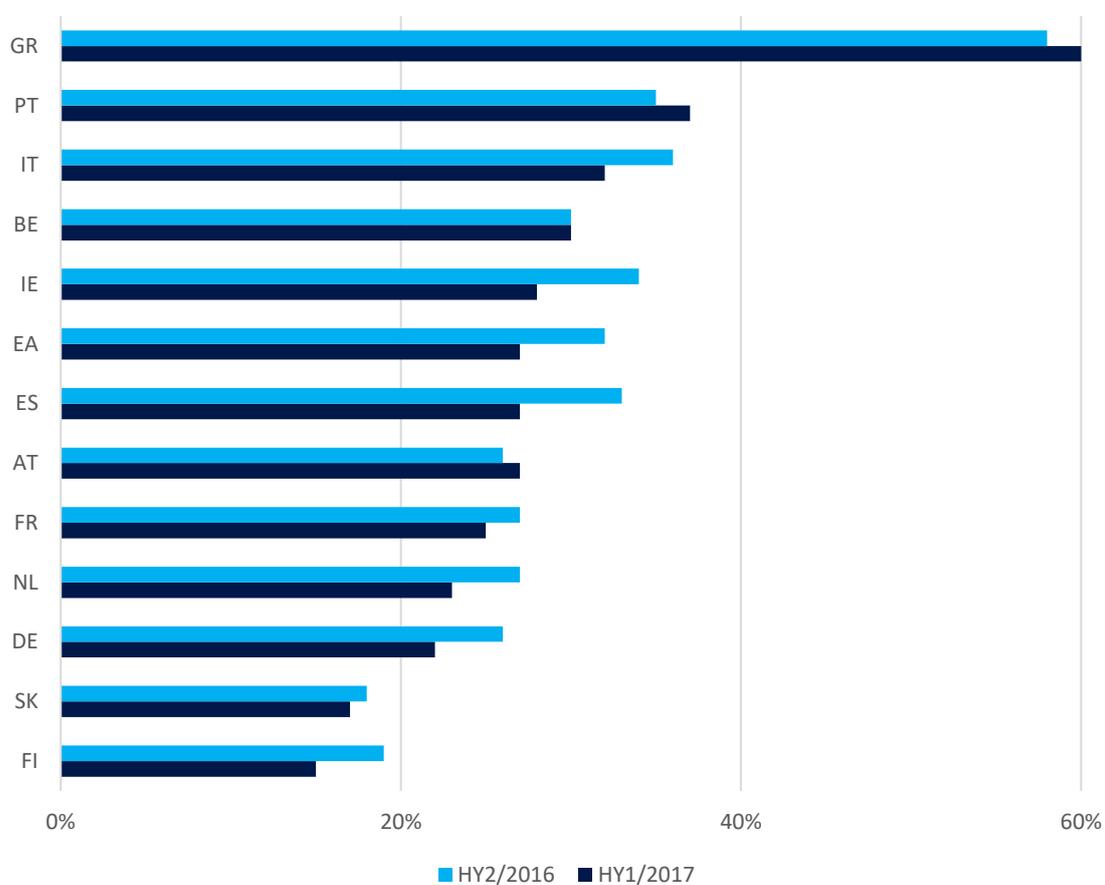


Sources: *Rapporto Cerved PMI 2017*

actual balance sheet data (see **Graph 11**) shows that for SMEs, the average value of the financial leverage (defined as the ratio between financial payables and equity) has gone from 115.5% in 2007 to 75.7% in 2016 (71.1% for small businesses only).

Considering more qualitative data, there is evidence that Italian SMEs continue to perceive the rationing of credit as an important problem, more than in other countries of the European Union. **Chart 4** illustrates that only Greece and Portugal suffer access to credit more than Italy.

Chart 4: % of SMEs that have problems in accessing to credit



Source: EIF “European Small Business Financial Outlook”, December 2017

These results are confirmed also by the publications of the SBA ¹¹2018 report. Indeed, looking at the SBA areas we can see that Italy performed below the EU average in all SBA areas. In particular, the poorest performing areas are: **1) State aid & public procurement and environment; 2) access to finance** and ‘responsive administration’. Less worrisome are the remaining principles, but they are all still below the EU average. Focusing on the area of access to finance, the report shows that Italy performs below the EU average and is among the three lowest-performing countries at EU level. Since 2008, the performance has

¹¹ The Small Business Act for Europe (SBA) is the EU’S flagship policy initiative to support small and medium-sized enterprises (SMEs)

been improving, though. Although the issue of accessing finance is less relevant than during the previous years, difficulties in accessing credit and finance are still faced by Italian companies, especially the smallest ones.

Our aim now is to understand why in Italy the rationing of credit is perceived to be such a critical problem.

1.2. The Italian challenge: factors fuelling the credit crunch issue

To understand exhaustively the causes and the implications of the critical effects that the credit crunch had in Italy and why it is still perceived to be an important problem, more than in other countries (only in Greece and Portugal the access to credit is indicated as a major problem, rather than in Italy – see **chart 4, paragraph 1.1.3**), it is necessary to synthetically stress out the scenario of the Italian economic system.

We identified 4 main criticalities in the Italian economy that fuelled the effects of credit rationing:

- 1) Italian SMEs peculiarities and the banco-centricity issue;
- 2) High level of NPL in banks accounts;
- 3) Not developed financial markets;
- 4) Scarce availability of risk capital;

1.2.1. Italian SMEs peculiarities and the banco-centricity issue;

To analyse exhaustively the causes and implications of the credit crunch in Italy, it is necessary to observe and study the economic situation of Italian SMEs, which represent the backbone of the national economy.

Before the analysis, it is useful to provide a definition of SMEs; The European Commission classifies a firm according to the following criteria:

- **large enterprises:** the number of employees is more than 250 or the annual revenue is larger than € 50 million and the assets' value is larger than € 43 million;
- **medium enterprises:** the number of employees is less than 250, the annual revenue is not larger than € 50 million or the assets' value is not larger than € 43 million;
- **small enterprises:** the number of employees is less than 50, the annual revenue or the assets' value is lower than € 10 million;
- **micro firms** (number of employees lower than 10);

In Italy, SMEs represent the backbone of the national economy and play a more important role in the real economy rather than in the rest of the EURO zone (see Table 7). The share of SME value added is two thirds compared to an EU average of 56.8 %, and the share of SME employment is 78.6 % in comparison with the EU average of two thirds. Micro firms are conspicuous by their high share of SMEs employment at 46.0% this is substantially more than the EU average of 29.8%. SMEs productivity, calculated as value added per person employed, is approximately € 40700, slightly lower than the EU average of €43500. Due to the prominent part played by micro-firms, the average number of persons employed in Italian SMEs is 3.0, 0.9 points less than the EU average.

Table 7: SMEs basic figures – Focus on Italy

Class Size	Number of enterprises			Number of person employed			Value added		
	Italy		EU - 28	Italy		EU - 28	Italy		EU - 28
	Number	Share	Share	Number	Share	Share	Billion€	share	share
Micro	3.538.488	95.1%	93.0%	6.567.225	46.0%	29.8%	197.5	29.3%	20.9%
Small	159.637	4.3%	5.8%	2.869.837	20.1%	20.0%	140.5	20.8%	17.8%
Medium	18.082	0.5%	0.9%	1.781.052	12.5%	16.7%	118.5	17.6%	18.2%
SMEs	3.716.207	99.9%	99.8%	11.218.114	78.6%	66.6%	456,5	67.7%	56.8%
Large	3.140	0.1%	0.2%	3.055.831	21.4%	33.4%	217,7	32.3%	43.2%
Total	3.719.347	100%	100%	14.273.945	100%	100%	674,2	100%	100%

Source: 2017 SBA Fact Sheet

<These are estimates for 2016 produced by DIW Econ, based on 2008-14 figures from the Structural Business Statistics Database (Eurostat). The data cover the 'non-financial business economy', which includes industry, construction, trade, and services (NACE Rev. 2 sections B to J, L, M and N), but not enterprises in agriculture, forestry and fisheries and the largely non-market service sectors such as education and health. The following size-class definitions are applied: micro firms (0-9 persons employed), small firms (10-49 persons employed), medium-sized firms (50-249 persons employed), and large firms (250+ persons employed). The advantage of using Eurostat data is that the statistics are harmonised and comparable across countries. The disadvantage is that for some countries the data may be different from those published by national authorities.>

From this data, it is reasonable to believe that any event which effects may reduce SMEs capabilities to raise funds, invest and carry out business activities would have a more negative effect on Italy rather than in Europe. Thus, this characteristic of Italian firms can be considered a first explanation of the extended consequences of the credit crunch in Italy.

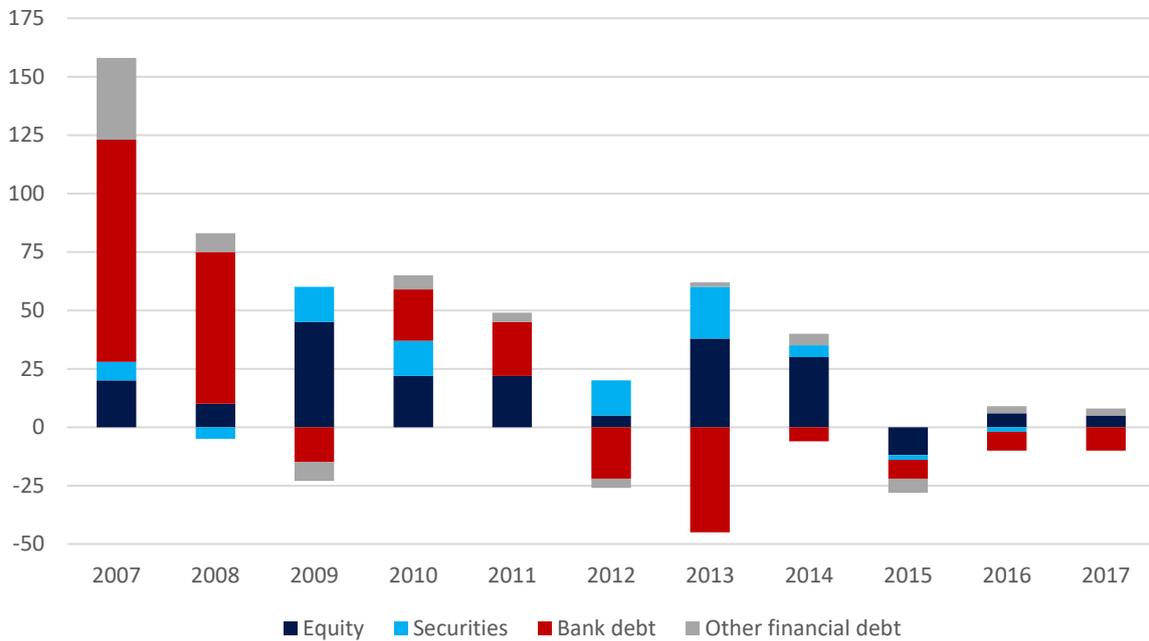
Further explanations related to SMEs characteristics should be researched in: a) their financial structure; b) their relationship with the banking system.

The financial structure characterizing the Italian SMEs shows peculiarities which make it different if compared to the European context. They can be synthetized in the followings:

- low level of capitalization;
- strong dependency upon the bank channel;
- short-term indebtedness;
- low level of investments.

The set of such features made the SMEs financial model structurally weak during the years of the crisis, unfitted for bearing the long-term development and high-tech firms, and strongly dependent on the economic cycle. Indeed, as banks enlarge and ration the credit offering, respectively during the positive and negative cyclic phases, through an increase of the cost of debt according to the risk level of the markets, SMEs see a direct impact on their financing capacity respectively in a positive or negative way. In **Chart 5** we can see a drastic reduction of banks supply of credit to SMEs during the years of the financial crisis first, then during the SDC, until recent years because of the consequently credit crunch issue. This specific and structural problem is worsened by the fact that there is a low level of capitalization in SMEs due to delays in the development of financial markets in Italy (**see paragraph 1.2.3**)

Chart 5: Sources of funding of Italian firms – annual flows (€bn)



Sources: Bank of Italy and students' computations

In addition to the problem of banco-centricity and a low level of capitalization there is evidence that in Italy the relationship between banks and SMEs, has always been controversial for other reasons:

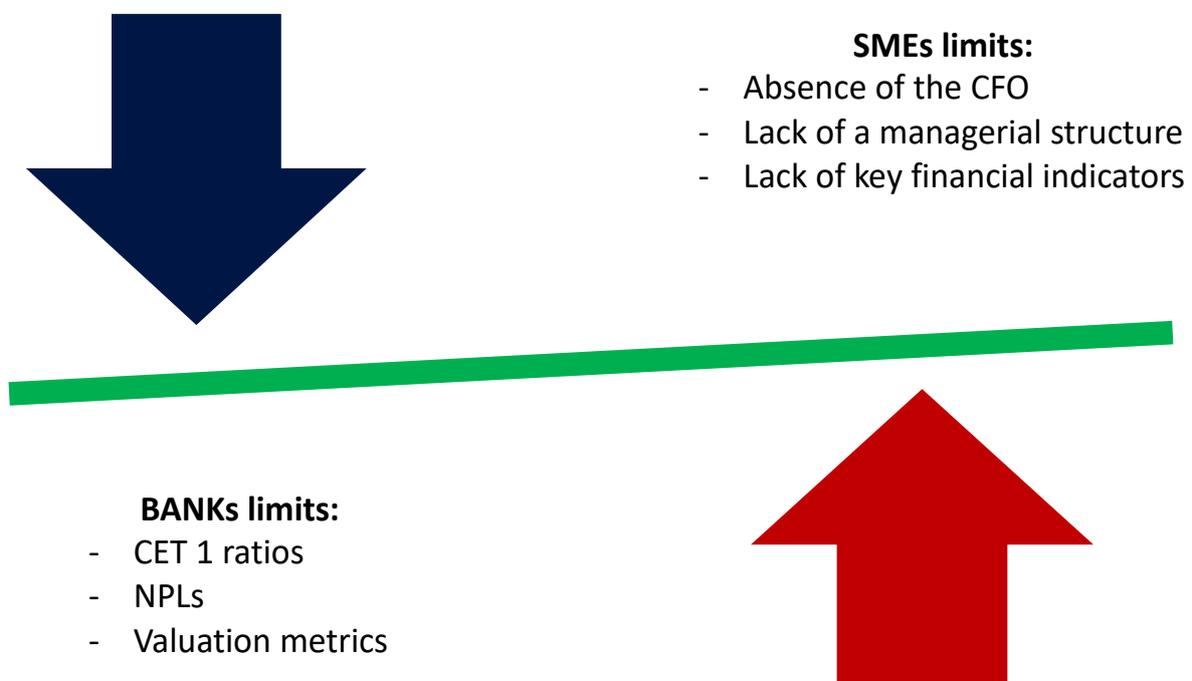
- Little propensity of companies to prepare a specific figure for the management of the financial area in the organizational structure,
- Trend by banking institutions to establish relationships with SMEs following a "guaranteed" approach,
- Low opening to the processes of financial innovation.

Small and medium-sized enterprises, in Italy but not only there, are usually characterized by family management, where the founding member is also the owner of the majority of the company's shares, as well as managers' roles are held by other family members. Almost none of these have a background and a formation that matches their assigned role: this type of structuring makes the company more flexible to possible environmental changes, since there are no people with specialized tasks, but the resources that can / must be

adapted to cover different roles, do not possess the professionalism and the skills needed. Unfortunately, this "organizational shortage" has dragged over the years to the present day, given that even in today's SMEs there is the absence of a CFO (Chief Financial Officer) able to guide the company in the choice of appropriate financial instruments to be adopted and in choosing the best debt ratio, given that each company, based on its characteristics and the market in which it operates must adopt a different financial structure, such as to exploit the leverage as much as possible. The absence of this central figure in the organization chart derives from a poor financial culture of our companies, the lack of a business plan and a medium-long term business strategy that does not allow management to actually realize the real needs of their business, as they follow a short-term strategy, trying to face and solve more immediate problems, considering that the problems concerning the medium term are of minor importance.

In **Chart 6** one can see the usual unbalances between banks and SMEs in Italy.

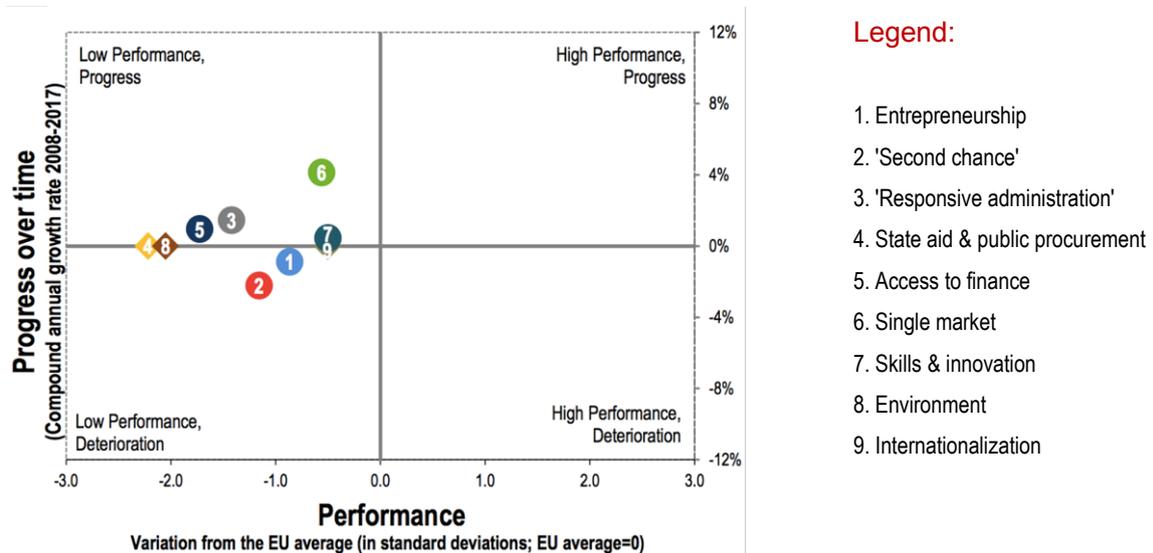
Chart 6: SMEs and micro business vs banks – main limits



Sources: Students' computations

In the following **chart 7** we provide also a picture of the status quo of Italian SMEs according to data from the SBA 2017 report. The table is useful to better visualize differences upon Italian SMEs and the rest of Europe.

Chart 7: Italian SMEs performances improvements - 2017



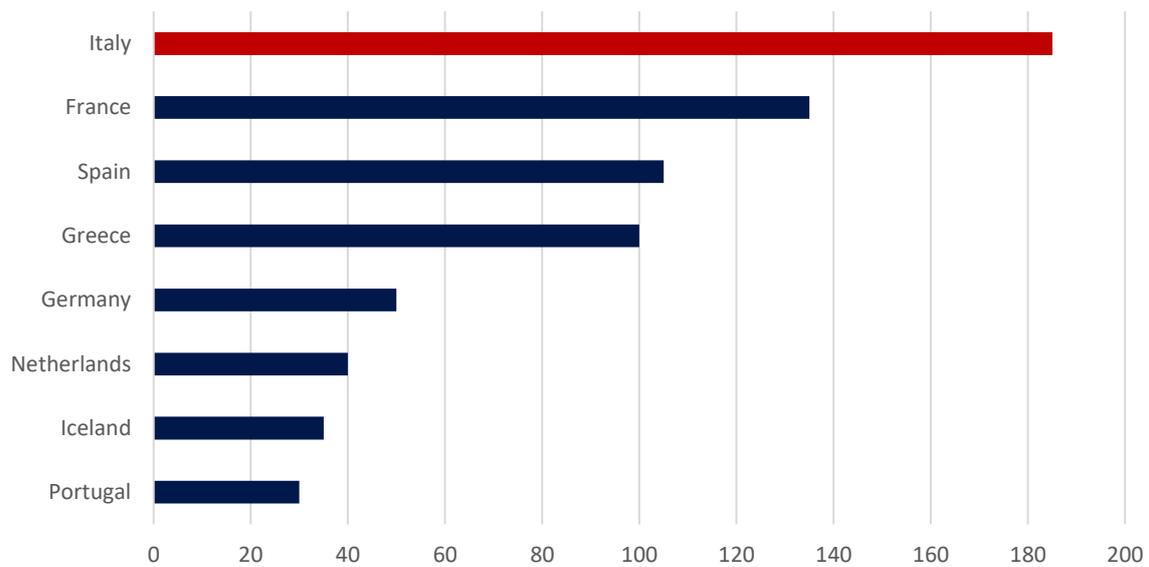
Sources: Students computations and 2017 SBA Report

1.2.2. High level of NPL in banks accounts

Given the high dependence of SMEs from credit lending and their controversy relationship with the banking system, especially for small and micro business (**see paragraph 1.2.1**), it is clear that any events that could reduce bank capabilities to supply loans will necessarily impact on companies in a negative way. This is the case of Non-performing loans (NPLs) that after the crisis were responsible of diminishing drastically banks capacity to lend credit to firm and households. NPLs are exposures to debtors who are no longer able to meet all or part of their contractual obligations because their economic and financial circumstances have deteriorated.

In Italy over €185bn of NPLs were outstanding at the end of 2017, the most for any country in the European Union (**see Graph 12**).

Graph 12: Non-performing loans - 2018 levels



Sources: ECB Reports

By comparison with Greece, where NPLs are 45% of loans, Italy looks manageable, with just 11.1%. And it has made progress: in late 2015 NPLs were 16.8% of loans. The NPL problem at Italy's banks is largely the result of the prolonged recession that has hit the Italian economy in recent years and of lengthy credit recovery procedures. The double-dip recession that struck Italy between 2008 and 2014 severely impaired Italian banks' balance sheets and loan quality. It had two distinct phases. The Italian banking system reacted relatively well to the 2008-09 recession (phase one of the financial crisis), triggered by the collapse of the US subprime mortgage market and the attendant structured products crisis, to which Italy's banks, unlike their European counterparts, were little exposed. However, the deterioration in customers' economic and financial circumstances led to a significant increase in the flow of new NPLs and in their stock. Phase two of the financial crisis began in the second half of 2011 with the Italian sovereign debt crisis. With the new recession, customers' ability to repay debt was further diminished, leading to a fresh rise in the rate of new NPLs and a further increase in their stock. With so many loans in arrears and the country's GDP stagnant, banks were reluctant to make new loans, starving Italian enterprises of money needed to upgrade or expand their businesses.

Since 2016, increasing efforts have been made to clean up the balance sheets of Italian banks. Monte dei Paschi, wrote off some of its bad debt and went on a cost-cutting strategy, closing branches and laying off employees. It was rescued by a recapitalization in the form of a nearly €4-billion cash injection from the Italian state, which became the bank's main shareholder.

Other banks have made similar efforts to reduce the mountain of distressed loans on their books, and have raised new capital from investors, including the Italian state, to avoid bankruptcy. The estimated size of that mountain of bad debt has declined from its 2015 peak of around €360 billion, down to about €64 billion now.

The need of recapitalization has been stressed out in particular by Basel III. Following the 2008 Financial Crisis the Basel Committee¹² formulated a reformed set of international standards to review and monitor the capital adequacy of banks. These standards, collectively called Basel III, compare a bank's assets with its capital to determine if the bank could stand the test of a crisis. Capital is required by banks to absorb unexpected losses that arise during the normal course of the bank's operations. The Basel III framework tightens the capital requirements by limiting the type of capital that a bank may include in its different capital tiers and structures. A bank's capital structure consists of Tier 2 capital, Tier 1 capital and common equity Tier 1 (CET1) capital.

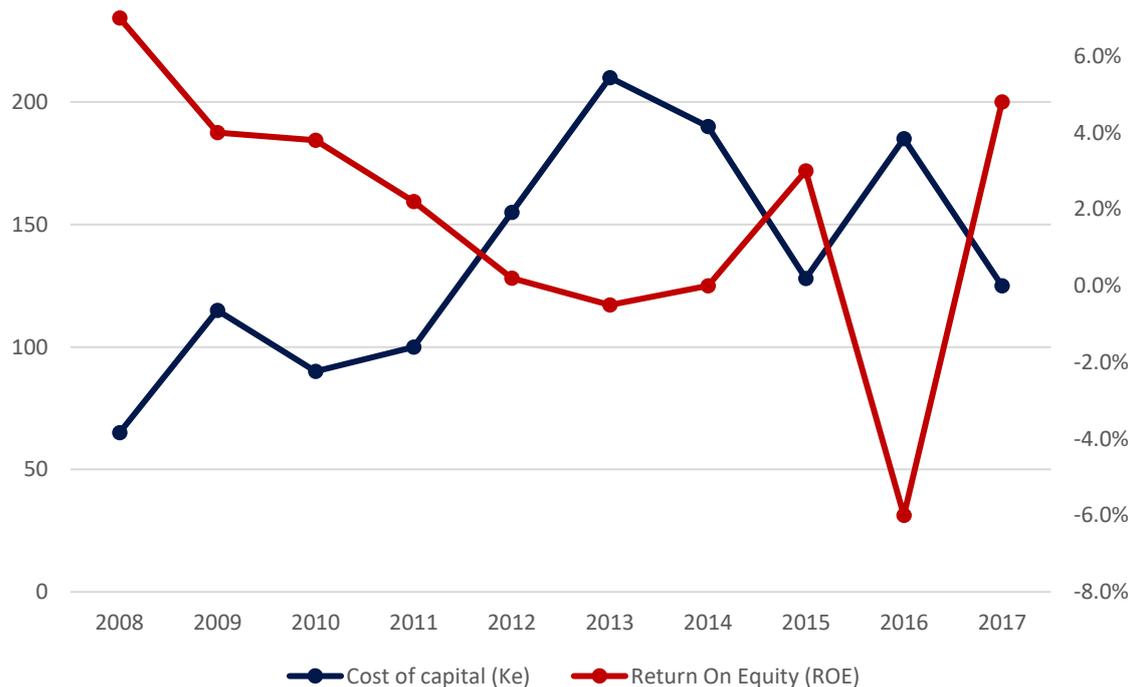
In particular, the constraints that are important to consider for the activity of credit lending are related to the value of the CET1 ratio. Common Equity Tier 1 (CET1) is a component of Tier 1 capital that consists mostly of common stock held by a bank or other financial institutions. It is a capital measure that was introduced in 2014 as a precautionary tool to

¹² The Basel Committee on Banking Supervision (BCBS) is the primary global standard setter for the prudential regulation of banks and provides a forum for regular cooperation on banking supervisory matters. Its 45 members comprise central banks and bank supervisors from 28 jurisdictions

protect the economy from a financial crisis. It is expected that all banks should meet the minimum required CET1 ratio of 4.50% by 2019.

As $CET1\ ratio = \frac{CET1}{RWA}$, it is clear that a way to increase the ratio and thus being able to boost the credit supply is to raise more capital. However, banks ROE was often lower than the cost of capital in these years, especially in Italy, **see Graph 13**. Thus, the better way to reduce that ratio for banks were to give loans only to best business and exclude more risky ones. In this sense, there has been a preference for loans to large enterprises rather than SMEs. Thus, the high level of non-performing loans pushed banks to reduce their exposure towards risky business worsening the relationship between banks and small and micro enterprises and fuelling the effect of the credit crunch.

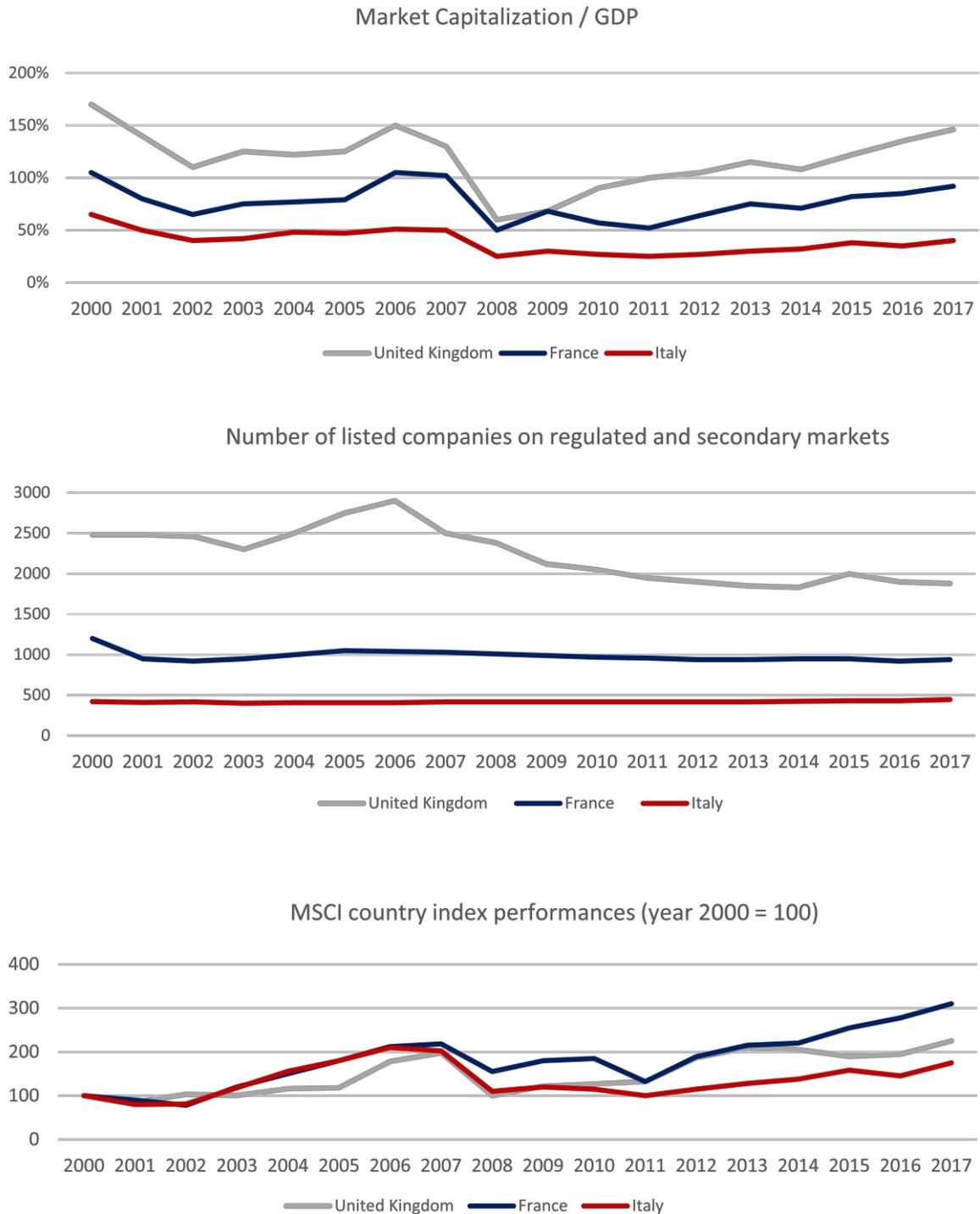
Graph 13: Cost of capital and ROE in Italy – annual data (basis points and percentage points)



Sources: Banks of Italy statistics and students' computations

1.2.3. Not developed financial markets

Graph 14: Italy vs UK and French financial markets - main figures comparison



Source: London Stock Exchange, Euronext, Milan Stock Exchange, World Federation of Exchanges

Graph 14 highlights some key statistics on the evolution of stock markets in Italy, United Kingdom and France since the year 2000, both with respect to the number of listed companies and the market capitalization as proportion of the gross domestic product. The graphs show that the Italian financial market is structurally undeveloped compared to France and the United Kingdom. Indeed, there is a constant distance between the Market capitalization over GDP ratio both with France ca. fifty percentage point and UK ca. one-hundred percentage points. The Italian stock market is small not only in terms of capitalization but also considering the number of listed companies. At the end of 2017, the number of domestic companies listed on the Mercato Telematico Azionario (MTA) of Milan Stock Exchange stood at 240, much lower than other European markets. The contraction of the price list that affected all the major European markets, due to the crisis, delisting physiological or migration on other platforms, in Italy has grafted into a structurally weak market. The fact that financial markets are underdeveloped in terms of capitalization and listed companies is a problem for Italian businesses for two reasons:

- a) It doesn't attract international investors funds and thus reduce the potential finances that could go to Italian companies,
- b) It suffers from economies of scale and therefore makes it too costly for SMEs to go for the listing process;

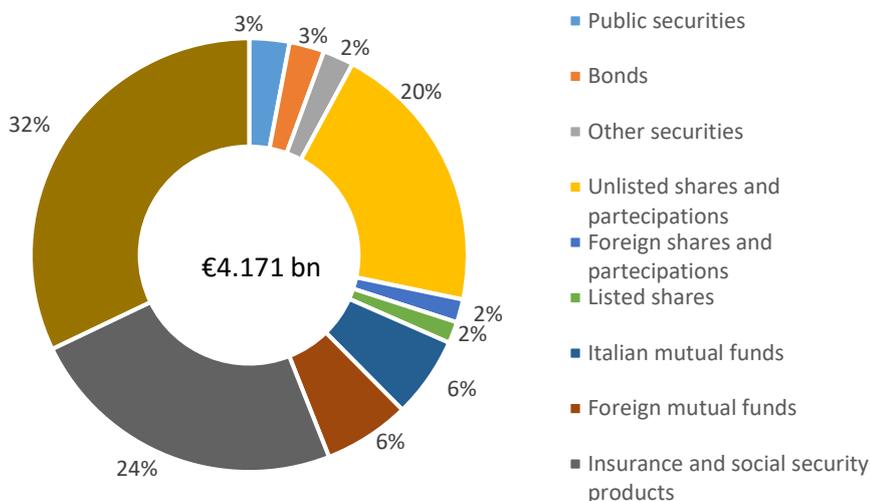
In addition, it doesn't allow SMEs the possibility to diversify their financial strategy, and reduce their banking dependence. However, we have also to consider the fact that SMEs are usually family owned and thus culturally averse to the capital markets. In fact, they are concerned with the risk of losing control over their businesses and are worried of the risk of spill over; the common belief is that: the dimensional growth and the access to new markets are perceived in trade-off with the greatest visibility to the eyes of the control authorities. This narrow mindset has been proved wrong. Even Adam Smith (1723-1790) stated in its economic theories that small is not good. Companies need to collect capital and invest in order to grow and increase their competitiveness on markets. Financial markets in Italy needs to grow and to do so they need interventions both on the operator side (Government, Milan Stock Exchange, Consob, etc) and on the companies' side (understanding the benefits of accessing to capital markets).

Indeed, financial markets play a vital role in the allocation of resources and operation of modern economies. Financial markets create products that provide a return for those who have excess funds (Investors/lenders), making these funds available to those who need additional money (borrowers). They provide a market that bridges the gap between borrowers and lenders. The 'price' established in this market is the rate of interest. In addition they are fundamental to match short term and long term needs (Maturity transformation). In this sense financial markets development is essential in Italy also to solve the problem of banco-centricity, explained in **paragraph 1.2.1** and diversify companies' strategies and capacity to raise funds. Capital is required by businesses as an input into the production process, so that the goods and services required to satisfy the economy's wants can be produced. Financial Markets provide an efficient process by which income that is not used for consumption can still contribute to aggregate demand. Savings from customers, businesses and governments can not only be used for future consumption, but also to invest in capital, which increases the productive capacity of the economy.

1.2.4. Scarce availability of risk capital;

The final issue that we identified and that in our opinion worsen the effects of the credit crunch is the propensity for Italian households to be sceptical about risk capital. In this way, the availability of funds for Italian companies is reduced, limiting also the potential expansion of capital markets (**see paragraph 1.2.3**). Italian households are generally characterized by a high propensity for saving. This means that Italians gave up on direct consumption to accumulate savings which will be employed for future expenditures (i.e. pensions) or simply for increasing personal wealth. Generally speaking, the longer the saving-period, the more likely it is for the saver to invest into capital markets, in particular, into the most profitable asset classes, with a long term view. However, this is not exactly true in Italy. If we look at the deployment of Italians wealth (**chart 8**) there is evidence that only 2% of the total investments convey into listed shares (in green). The percentage is higher in other countries: 5% in French and 6% in Germany.

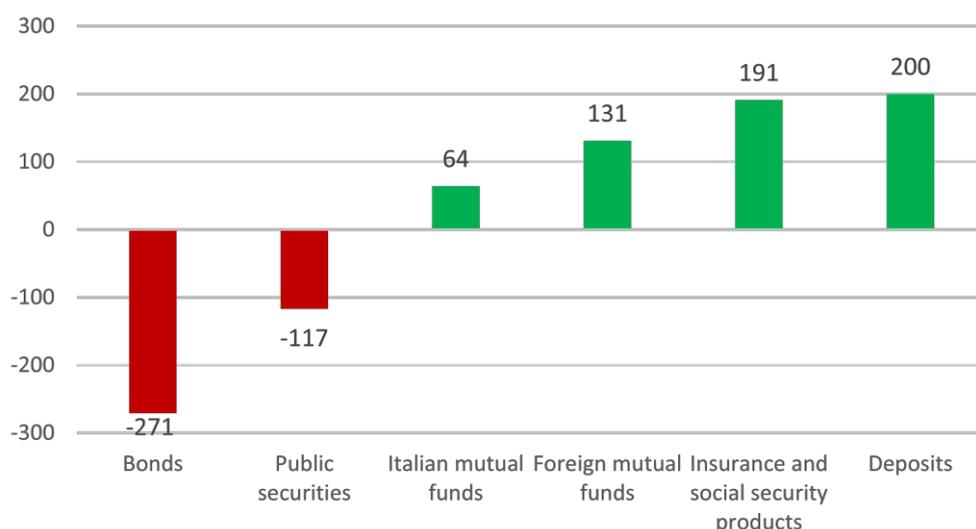
Chart 8: Italians wealth deployment (2017 figures)



Sources: Consob and students' elaboration

The reasons for this widespread scepticism towards financial markets in Italy are not clear. However, there are some theories: **a)** a first explanation can be probably related to negative experiences with the equity market, as for example during the bursting of the dot-com bubble; **b)** a second explanation is to be related to Italians cultural behaviour: when it comes to money they use to be risk-averse and conservative; **c)** third, there is a widespread lack of knowledge about the possibilities offered and the functioning of the financial markets. Note that the percentage of wealth deployed into non listed companies is relative high (20%). The same figures account for 9% in Germany and 18% in French. Unlisted shares and participation represent investments in SMEs that are not listed with equity capital by owners. This is another prove of the peculiarities of Italian SMEs in Italy that are heavily participated by entrepreneurs and banks and do not entail for financial market resources. (see Paragraph 1.2.1) If we then look at **Graph 15** it is possible to see the capital flow changes between 2012 and 2017. In particular we can observe a shift of funds from bonds securities and Public securities to mutual funds, insurances and security products and deposits. In particular deposits raised €200 bn in the last five years. Thus Italian households are retaining 32% of their financial wealth into deposits. This high propensity for saving, and the scepticism towards financial markets are translated into a loss of ca. € 100 billions of capital gains each year for Italian investors.

Graph 15: Investment flows changes (2012- set 2017, €bn)



Source: Consob and students' elaboration

However, those data reflect also that investment choices linked to structural features of our economic system are increasingly belonging to the past. In fact, given several factors such as the structural changes under way, the levels of interest rates, the decomposition in the offer of financial instruments and in the distribution channels of the same, induced by the recent regulations, it is likely that, in perspective, the weight of the securities debt in households' portfolios will be reduced again. This will free up resources that could be attracted by other types of financial instruments such as shares in the context of a diversification approach. In this scenario, it is very important for the government to exercise a role of enabler to this transitional process, guaranteeing the interventions needed to sustain the financial system on one side and to improve the financial knowledge of investors on the other side.

As of today, 40% of people in Italy do not know how to assess their financial knowledge, 50% are uncomfortable with finance and 50% are not interested. In particular, Consob disclosures confirm a known fact: (53.9% do not know basics such as risk-return ratio, inflation (52%) and portfolio diversification (33%). Even lower is the familiarity with the various dimensions of financial risk (18%). The result is a framework of subjective perceptions, which reduce the quality of choices, and of emotionality and distrust, which reduce participation in the financial market.

2. Alternative financial solution

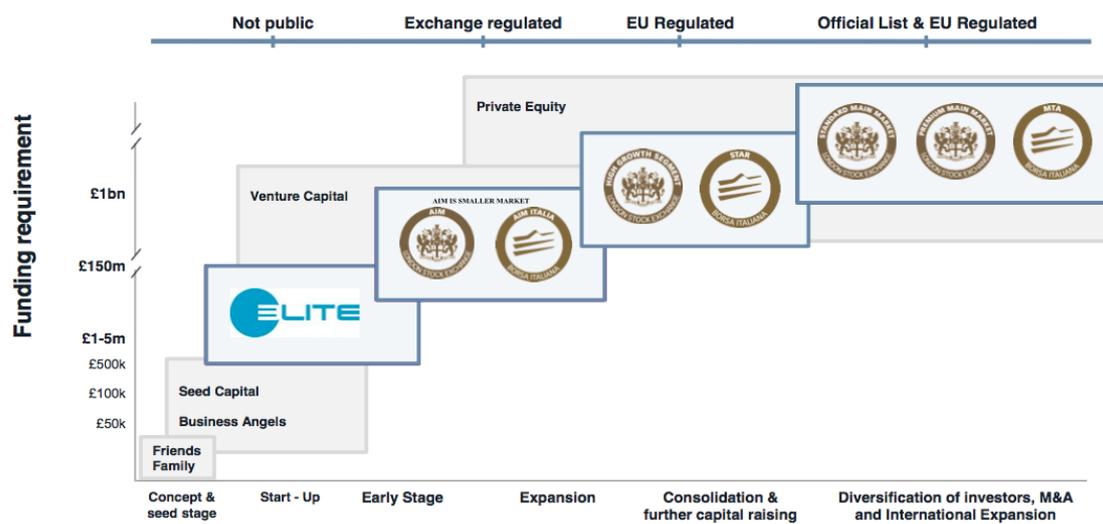
The rise of “credit crunch” phenomenon created a lack of financing sources for many Italian companies, that were forced to turn to alternative financing solutions. The instability of the macroeconomic scenario and the stricter constraints on the lending activity of banks, pushed intermediaries to concentrate the access to bank loans towards less risky firms, excluding most of SMEs, which were characterized by high levels of indebtedness. For this reason, SMEs in order to adapt themselves to the shrank of supplied funds, were forced to move toward unconventional funding channels, less based upon bank loans, which anyway were not suitable at the needed time. The ability of banks and intermediaries to suit with a dynamic and challenging environment, also due to the elimination of interest rates on the market, was not immediate, due to the organizational and governance structures, often rigid, untimely and not very inclined to change. Paradoxically, such anomalous picture may constitute a unique opportunity for those SMEs which have begun to go for more direct financing modalities combining both equity and debt. The access to equity market would allow firms to be better capitalised and make them more attractive even from intermediaries or institutional investors’ point of view. On the other hand, the development of a corporate bond market would not be beneficial only to firms as alternative source of financing, but it would allow intermediaries and banks to offer new services such as the placement of bond instruments on the market.

According to the first Report on Alternative Finance of Entrepreneurship & Finance Observatories of the “Politecnico di Milano”, 1,800 small and medium-sized Italian companies between 2017 and the first six months of 2018 collected about 3.5 billion euros from alternative finance investors. The most important share of capital came from the **mini-bond** channel with 51% of the market (against 28% in the 2008-2018 period) and loans generated for 1.84 billion, while in the second place there is **private equity** (considered only for expansion and replacement operations) and **venture capital**, at 22% of the market.

The presence of **invoice trading** is also clear, the most widely used instrument, since adopted by 900 SMEs, with 16% of the market. In a growing phase there are also **crowdfunding** (3%) and **ICOs** (at 2%), while **direct lending** (0.6%) is marginal, but the report takes into consideration just investments of specialized funds on the fin-tech platforms.

Here in this paragraph, we want to illustrate what are the most important financing options that firms have at their disposal, and their status in the Italian scenario. Thus, we will provide a description of these funding solutions, which are alternative to the bank loan, relevant data about their adoption reached as of today in Italy, and future evolutions that will characterize them. We will classify the solutions with respect to the figure provided by the Milan Stock Exchange, which map the life-cycle phases of an enterprise in relation to its funding requirements and the possible sources of money, see **Chart 9**.

Chart 9: Funding supporters



Source: London Stock Exchange, Milan Stock Exchange

In particular we have: 1) **traditional funding strategies** that are not anymore disruptive and already consolidated in other countries; 2) **disruptive and technology-enabled funding strategies** that are very new on the market and have challenged the incumbents market position: these refers more in general to the fin-tech paradigm.

2.1. Traditional funding strategies - Equity

2.1.1. Self-financing

It represents the personal investment of the owner (or owners) in a business and it is called risk capital because these investors suffer the risk of losing their funds if the business does not succeed. The advantages associated to this internal source of financing are the following:

- **Stability:** since the risk capital belongs to the firm, the company can rely on its availability for an unlimited duration;
- **Remuneration flexibility:** owners can autonomously decide about the dividend distribution in terms of time and quantity, without any contractual constraints;
- **Management flexibility:** it does not require a punctual remuneration, allowing the firm a certain degree of freedom in the investment's choices.

The disadvantages concern:

- **Cost of equity capital,** that being sensitive to the firm's risk, entails a higher remuneration if compared to the debt capital and thus it has a larger cost;
- **Tax base:** dividends distributed to shareholders cannot be deducted from taxes, while, on the contrary debt interests can.

Self-financing can be described as the capability of a company to cover its financial needs without resorting to debt capital or other "external" sources of financing. In other words, by reinvesting the non-distributed profits generated in the business, the firm is able to meet its financial needs. We can affirm that, the taxation, played one of the main important role on the Italian entrepreneur's financing choices between equity and debt capital, since they prefer to opt for the deductible bank debt, rather than researching alternative sources of funds which were considered less convenient from a fiscal point of view.

As of today, given the large investments that companies have to bear, self-financing can no longer be considered as alternative financing solution, that is why the figures of self-financing market will not be analysed.

2.1.2. Business Angels

They are private individuals with high net worth, such as other entrepreneurs, consultants or managers, which decide to commit their financial resources into firms, becoming, as a matter of fact, shareholders or at least business partners. Despite of its potentiality, it is unlikely that the figure of Business Angel is able to fully substitute the financing needs a SME relies on. We can classify Business Angels typologies according to the intensity of their involvement into the target firm:

- financial Business Angels, who invest risk capital into the firm in order to guarantee the business advancement without being involved and interfering with its management, resulting to be mere financial supporters of the business initiative;
- industrial Business Angels, who, in addition to their funds supplied to the firm, actively join the management of the firm by providing resources such as know-how, managerial experience and competences for a successful development of the business.

The main advantages related to Business Angels involvement are the following:

- **Early contribution:** at the very beginning of the firm life-cycle, when SMEs are overlooked by traditional financial operators, Business Angels represent an interesting opportunity for companies looking for funds;
- **Risks taker:** for high-innovative businesses, characterised by significant uncertainty and instability, which the banking industry may be reluctant to financially support, Business Angels are those that can support the running of these ventures;

- **Knowledge:** they supply, in addition to financial resources, technical and managerial competences that the firm lack;

Business Angels market in Italy

The two largest player in Italy are IBAN (Italian Business Angels Network) and IAG (Italian Angels for Growth). According to a survey presented in 2018 by IBAN, conducted with 229 investors, Italian business angel investments in start-up amounted to € 26.6 million. In 82% of the cases the companies financed were in the *start-up phase*, in 16% of the cases at the *seed stage*, while only in 2% of the cases is the phase of *expansion*. The average amount of investments fell from € 479,000 of 2016 to € 227,000 in 2017, while on the other hand, the number of transactions more than doubled. Although, 34% of the angels have made individual investments, the majority (66%) preferred to adopt co-investment logics, an increasingly popular trend, since increases financial contribution reducing risks. It should be noted that in 2018 the Cassa Depositi e Prestiti announced a collaboration with the European Investment Fund (EIF) aimed at launching the 'Caravella' fund, which will co-invest with the angel businesses in innovative and high-growth Italian start-ups.

2.1.3. Private Equity and Venture Capital Funds:

Those funds work as specialized organization, designated to mainly support non-listed companies, not only financially but also providing services of monitoring and management, in a suitably combined manner. The investor proposes itself as a "forward" partner, whose ultimate objective is the realization of a financial gain in the medium term. He will actively collaborate with the entrepreneur to increase the value of the company, bringing complementary skills, fostering synergies and supporting managers. There are transactions in which the private equity investor obtains the majority of the risk capital, and therefore control, rather than situations in which they subscribe a minority share of the capital. The difference between PE and VC funds, mainly depends on the firm's life-cycle stage in which they support the company, in particular, venture capital concerns the financing of the firm at the very beginning of its pathway, while private equity in later ones. VC more than PE is a financing modality pointed towards new businesses and firms, so these businesses are

characterised by potentially significant returns, but to be weighted with the serious risks undertaken. PE funds' investments can be classified into four classes, according to the motivations behind the need for such modality of financing. They are the followings:

- *early stage* financing, meaning investments aimed at supporting the launch of new businesses, in particular we can distinguish between: seed financing, where investors supply funds even if the technical validity of the firm's output is not yet demonstrated; start-up financing, where supplied funds are aimed to finance the beginning of the production activity; first stage financing, when the production is on its way but the commercial validity has to be tested;
- *expansion capital*, investments allowing the fund to take the minority shareholding, aimed to further develop already established and consolidated firms, through financial stabilization and strategical reinforcement provided by the capital increase and the knowledge of the institutional investor. The funds provided to the firm can enhance its opportunities of growth through mergers and acquisitions activities. At the same time, the presence of a known institutional investor among the shareholders, can play a strong signalling role for the external investors, of the company transparency and corporate governance effectiveness;
- *replacement capital*, consist in interventions aimed to support the change of the ownership structure of the firm. Usually is done when there are shareholders who are not anymore interested to financially support the development of the firm and its projects and so will be substituted;
- *buy-outs*, relevant financial operations intended to take over the firm ownership, to favour the passage from a family ownership to a managerial one or to solve the intergenerational transition. There are different typologies of buy-out operations, the most common are: leveraged buy-out, when the operation is promoted from external acquirers and achieved by mainly using borrowed funds and management buy-out, when the acquirer is group of managers within the company.

Usually, the disinvestment phase (exit) is one of the most crucial and sensitive for investors. The deadline is already planned in the investment negotiation phase and can most often occur after a few years (usually from 3 to 7) with the sale of shares (trade sale) to another investor (for example a large company, or another subject of private equity, or the entrepreneur himself, interested in redeeming the portion of the capital sold) or with the listing on the Stock Exchange (through an Initial Public Offer, IPO, in which the shares will be sold to savers to establish floating capital).

The main advantages regard:

- **"Patient" capital:** These operators are specialized in financial support aimed at creating value on the medium term, so the company is able to raise capital with no pressures on its reimbursement;
- **Knowledge** provided by these entities, which can be used to support development plans, strengthening the company's financial structure, performing corporate acquisitions, or for the development of new products and new technologies;
- **Ownership problems:** Private equity can be also used to solve problems connected with the company's ownership or with the phenomenon of generational shift.

Disadvantages, on the other hand, regard:

- **Protective requirements:** investors agree to participate in the risk of the entrepreneur, but in order to protect their investment they require the subscription of fairly complex shareholders' agreements, which contain numerous clauses such as veto rights, the subscription of shares with privilege in the event of company liquidation, anti-dilution rules, the appointment of its own representatives on the board of directors, rights to tag-along and drag-along.

Private equity and venture capital markets in Italy

In the last five years, the average annual number of transactions registered is 330, while the average number of enterprises involved each year is equal to 260. Even the partial data of the first half of 2018 confirm the same trend. The annual investment is around € 4 billion. As regard for the resources allocated to early stage interventions, therefore typically aimed at supporting micro-enterprises, we see a growth starting from 2015, both in the number of operations (122 in 2015, 128 in 2016, 133 in 2017 and 96 in the first half of 2018) and in the investment flow (in 2015 the value is equal to € 74 million and has reached € 133 million in 2017, up to June 2018 have been recorded by AIFI € 96 million).

With regard to expansion investments, aimed at the growth typically of companies already underway (including certainly many SMEs), the trend appears to be less favourable. In 2017, only 45 transactions were recorded, for a value of € 338 million, while in the first 6 months of 2018 we have 24 deals for € 230 million. With respect to the exit procedures, AIFI data show that the most frequent case is the transfer to another investor, on average 40% of the transactions are concluded with the sale of the shares to an industrial enterprise, 20% of cases sees the sale to a financial investor. The frequency of sales to other funds and financial entities has increased relatively in the last five years. In addition, 8% of investments, with a small increase over the last 5 years, end with the company's listing on the stock exchange (IPO). The average annual returns (internal rate of return, IRR), obtained in the last 5 years, calculated by comparing the initial investment with the value at the time of disinvestment, vary between 12.5% and 19.7%.

After the description of the Italian market, it is necessary to compare the situation with what happens abroad in other important countries of the European Union, in particular Germany, France and United Kingdom. By looking at both the number of operations concluded and the corresponding capital collection by the Italian Private Equity funds, the gap with the European competitors seems to be unbridgeable: in Italy, the annual volume of investments is almost equal to the half of the Germany and France ones, and less than a third of the UK. If we focus only on venture capital investments, the gap becomes even larger.

2.1.4. Initial Public Offerings:

Initial Public Offerings can be considered the more concrete equity alternative to the bank loan or a corporate bond. With IPOs companies have the possibility to raise consistent sum of capital against the emission of rights over their business (shares). However, as we saw in **paragraph 1.2**, Italian entrepreneurs are sceptical about the benefits of capital markets and therefore this solution is not commonly used. Listing on the Stock Exchange it is not simply a channel of financing; going public requires considerable monetary and non-monetary efforts, since it entails a radical organizational and operational change which has to be consistent with the requirements imposed by the Authority responsible for managing the market. Moreover, listed firms are strictly supervised by the market authority and must guarantee a continuous flow of information that have to justify eventual misalignments between the actual results and the expected ones.

The advantages of going public are the following:

- **Diversification:** it can be useful to diversify the sources of funds at firm disposal, reducing the firm dependency from debt capital and enlarging the base of capital collection;
- **Appetibility:** listing may even increase the prestige of the firm, allowing it to enjoy positive responses in terms of visibility, reputation and bargaining power among investors;
- **Efficiency:** it may enhance the firm's credit standing, decreasing its cost of capital and, above all, the debt cost because of a lower financial leverage, resulting from the issue of new shares on the market;
- **Effectiveness:** the market regulation provides norms for corporate governance and transparency toward the public, which positive affect the organization and the information system of the firm;
- **Motivation:** A further intangible but non-negligible consequence associated to the listing is the availability of an instrument of motivation and incentive for managers and employees.

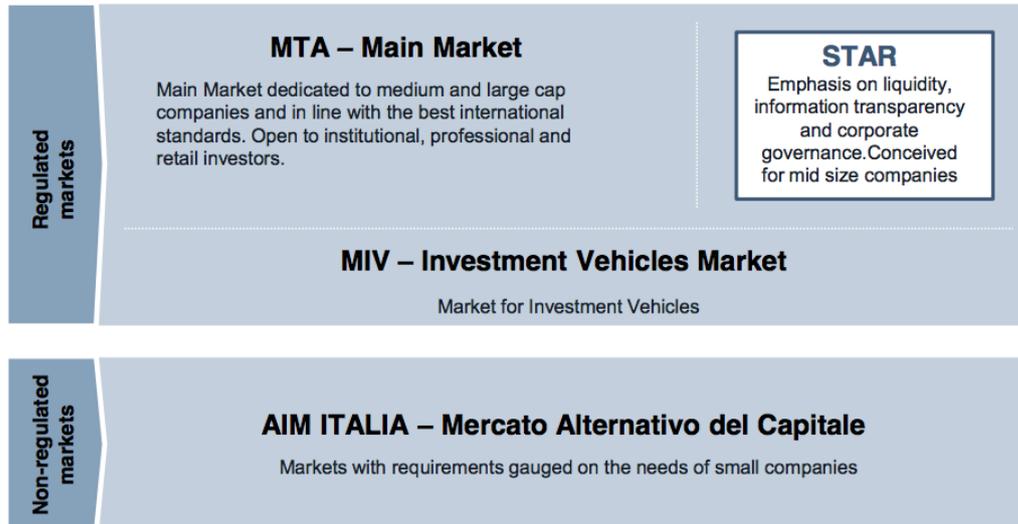
As a result of what illustrated, listing implies a series of potential benefits in the form of enhanced efficiency, improved transparency, strengthened relationship with stakeholders, both internal like managers or employees and external like suppliers and customers, and diversification of the sources of financing. Nevertheless, the choice of listing entails different duties and potentially critical issues the firm should take into account:

- **Costs:** there are expenses associated to the admission on the Milan Stock Exchange: consortium costs, legal expenses, Milan Stock Exchange and CONSOB fees. The amount of such costs is variable and depends upon the placement size, the sector in which the firm operates and the size of the firm itself;
- **Ability to change:** listing require organizational, managerial and informative changes for the company, but it may not be able of succeeding in such radical changes;
- **External supervision:** a listed company is continuously subject to investors' and other external entities evaluations, which induce the firm to focus on short-term performances. As a result, the management may be tempted to carry out actions aimed more at the achievement of immediate satisfying economic performances than at the development of a sustainable long term strategy;
- **Dilution:** listing causes an alteration of the firm's ownership structure and a consequent dispersion of the existing shareholding, which can be reluctant to the going public option.

IPOs market in Italy

Milan Stock Exchange equity market is classified in MTA, MIV, STAR and AIM, **Chart 10**.

Chart 10: Milan Stock Exchange composition



Source: Milan Stock Exchange

MTA is the main market for shares dedicated to medium and large cap companies. It is in line with the best international standards and is open to institutional, professional and retail investors.

STAR segment dedicated to mid-size companies with market capitalization from €40 million to €1 billion. Here the emphasis is on liquidity, information transparency, communication and corporate governance. It was created in 2001 with a view to enhancing the value of Italian mid-cap excellence vis-à-vis Italian and international institutional investors. The listed companies on the STAR segment are 68, which represent 20% of the total number of companies listed on the whole Milan Stock Exchange.

MIV is the market for Investment Vehicles.

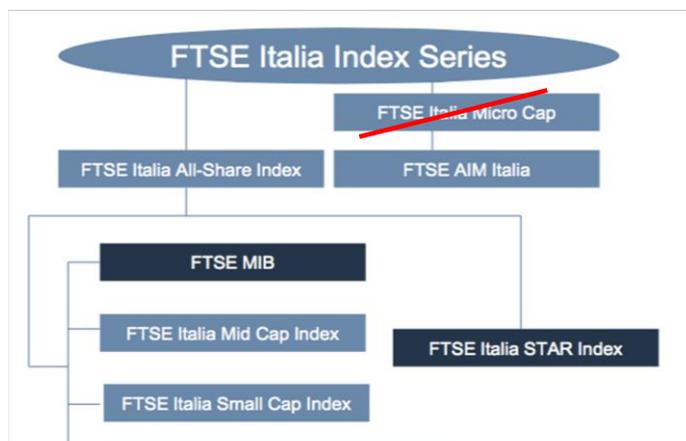
AIM Italia is the market segment with requirements gauged on the needs of small companies with strong growth potential. AIM has a balanced regulatory approach and a flexible admission process, built for the financing needs of Italian SMEs in a global

competitive context. Even if not regulated, it is aimed at conveying SMEs needs such as admission requirements and on-going publications with investors' needs, in particular, nomad presence and information transparency.

ELITE is a program targeted for not listed companies, whit the aim to nudge them to financial markets, sharing resources and capabilities.

Then we can further classify the market with a comprehensive set of integrated indices, covering 95% of the Italian equity market capitalisation.

Chart 11: Milan Stock Exchange indexes



Source: Milan Stock Exchange

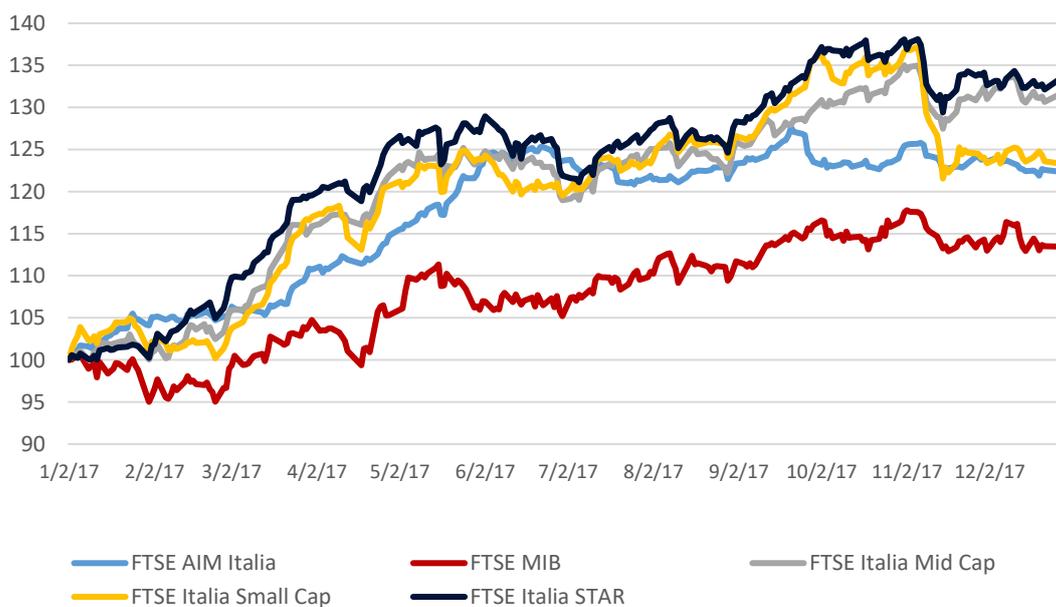
- FTSE Italia All-Share Index represents all the companies listed on the MTA market.
- FTSE MIB is the primary benchmark Index for the Italian equity markets. It is composed by the 40 most capitalized and highly liquid, leading companies of Italy and with 498,9 €bn, it captures about 80% of the domestic market capitalization.
- FTSE Italia Mid Cap Index it comprehends the top 60 companies by capitalization that do not belong to the FTSE MIB index.
- FTSE Italia Small Cap Index it contains small capitalization stocks from 124 companies, which represent 4% of the Italian stock market capitalization.
- FTSE Italia STAR Index counts 68 listed companies on the STAR segment, which represent 20% of the total number of companies listed on Milan Stock Exchange and have a market capitalization of 40,1 €bn.
- FTSE Italia Micro Cap was an index of the Milan Stock Exchange until 17 June 2016.

It was the basket of those small companies that did not meet certain criteria of liquidity and have a very low capitalization.

- FTSE AIM Italia Index is composed of small and medium-sized Italian companies with high growth potential. Here there are 112 companies with a comprehensive market capitalization of 4,9 €bn.

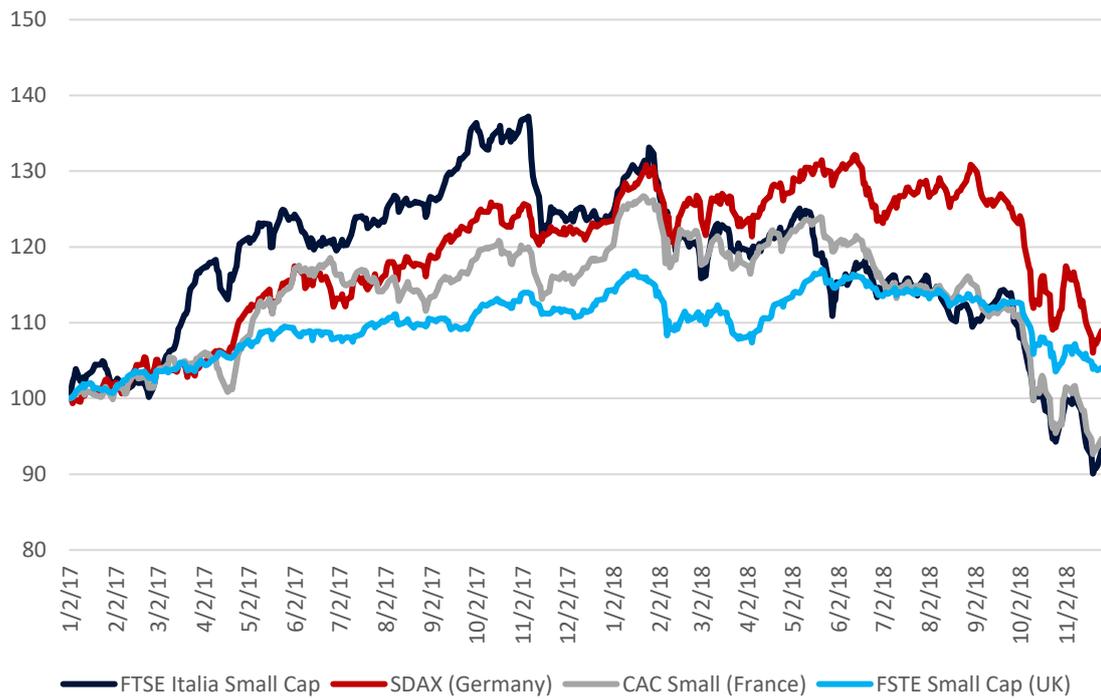
As of today, considering Milan Stock Exchange as a whole, it counts 333 listed companies, of which 329 are Italian. Among them, 257 are non-financial companies, while non-financial domestic SMEs are 178. The total market capitalization is about 683 € billion. The breakdown by industry shows that the main important sectors are: financials 32%, consumer goods 17%, utilities 15% and industrials 15%. On the other hand, the breakdown by market capitalization displays that 81 companies are over 1 billion euro, while the companies with a market capitalization under 500 million euros, so defined as SMEs are 221. Among them 108 have a market capitalization lower than 100 million euros. The recent introduction of the tax incentive on long term investments (PIR - Individual Savings Plans) has increased the financial resources allocated to Italian companies through specialised funds (PIR compliant funds). The strong interest of domestic and international investors and the increasing demand for new investments in Italian companies have enabled the Italian stock market to record a positive performance, see **Graphs 16, 17, 18**.

Graph 16: Italian markets performances



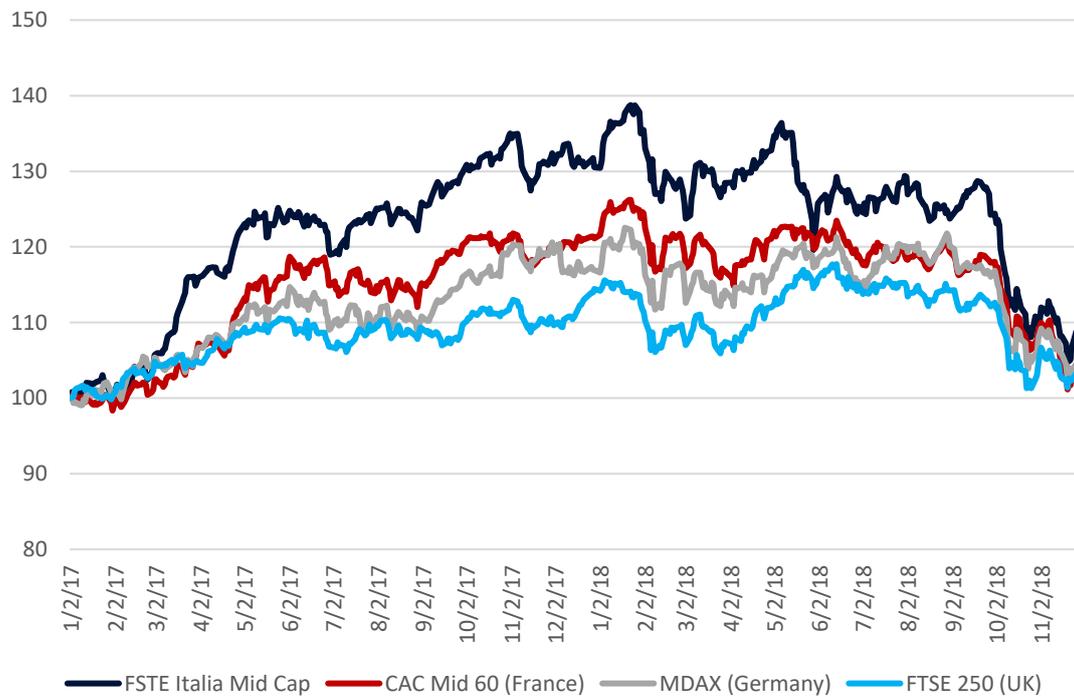
Source: Milan Stock Exchange

Graph 17: Italian vs european market performances



Source: Bloomberg

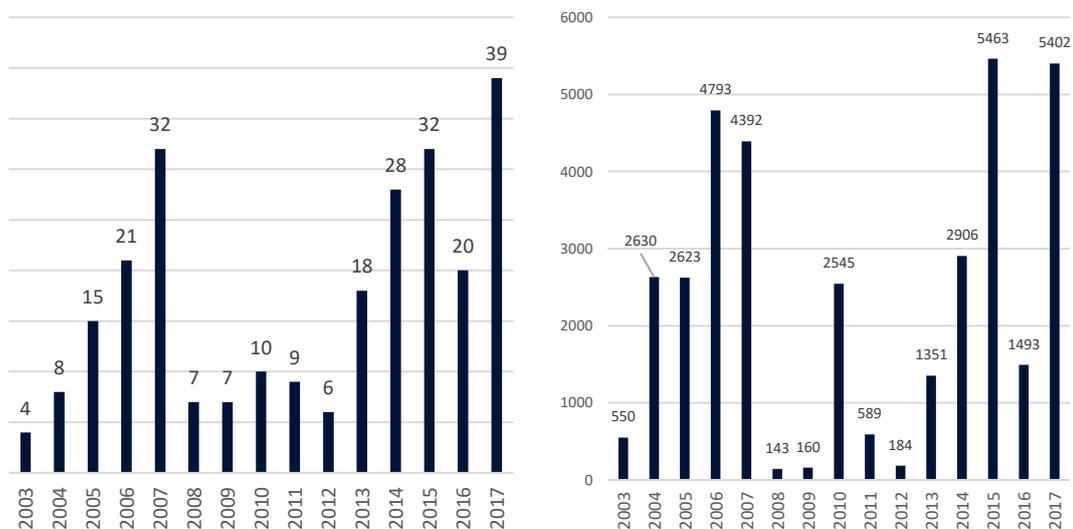
Graph 18: Italian vs european market performances



Source: Bloomberg

We assisted to a strong momentum for listing, since newly admitted companies in 2017 reached the number of 39, of which 32 through IPO. The threshold of 30 was reached just in 2007 and 2015 on the Milan Stock Exchange, while in 2016 admissions registered were only 20. Money raised, instead, reaches its peak in 2015 with 5.463 €mln, in 2016 were 1.493 €mln and 5.402 €mln in 2017, see **Graph 19**.

Graph 19: IPOs market – Number of admission and Capital raised (€mn)



Source: Bloomberg

2.2. Traditional funding strategies - Debt

2.2.1. Mini-Bonds:

which are a debt instrument, introduced from 2012 by the Decree-Law of 22 June 2012 n. 83 ("Decreto Sviluppo"). Mini-bonds are an innovative financing tool for companies not listed on the stock exchange. With this tool, companies can raise funds from investors who want to believe in their projects and so subscribe them. The new bonds, designed especially for SMEs in search of liquidity, are easy to be issued, less complicated and less expensive with respect to the traditional corporate bonds. Moreover, these are independent from the profitability of the business, so the debt

capital is only partially subject to the business risk. Mini-bonds can be seen as an alternative and complementary source of financing, especially in preparation (as if was a sort of 'training') to subsequent transactions in the securities market.

In order to issue these financial instruments, firms must respect some requirements:

- the issuing company must be Italian and headquartered with a stable organization in the Italian territory;
- the issuing company must not be a bank or an insurance company and also must not be part of a Group subject to the supervision of the Bank of Italy;
- the issuer must not be a vehicle company formed with the sole objective of making acquisitions or securitization operations;
- the total issue value must be € 500m (to be considered as the sum of the value of all the emissions made);
- debt securities issued in the form of mini-bonds must not be traded on regulated stock markets open to retail investors.

Mini-bonds are therefore debt securities, to be ascribed, in most cases, to the category of High-Yield bonds, which can be issued by a SME to collect new financial resources, diversify their sources of financing and mitigate the risks related to the heavy dependence on banking channels. The main advantages of these instruments are:

- **Diversification:** reshaping of financing sources, in the short and medium term, leads to an increase in credit standing, which is often linked to a reduction in the cost of debt for the company;
- **Interests' expenses deductibility:** the interests' expenses paid by the company are deductible as normal bank debt's interests;
- **Emission's costs deductibility:** all costs borne by the company to issue the mini-bonds (advisory, legal, listing and others) are fully deductible in the year in which they were incurred;
- **Visibility:** issue mini-bonds is a process that gives great visibility to the issuer, gained by the quotation of the instrument on Extra-Mot PRO segment, but also the press releases;

- **Relationships:** the issuing process allows the company to strengthen its relations with institutional investors with consequent clear advantages for any subsequent transactions (private equity, IPO, etc.);
- **Future perspective:** issuing a mini-bond means thinking about your future, improving the current efficiency through the implementation of a structured business plan;
- **Financial planning ability:** issuing a mini-bond means being able to plan, limiting unexpected events;
- **Reduced cash outflows:** when the issue is of the bullet type, during the loan life, the company pays to the investor only the interests on the loan through coupon flows, so this make it able to wait for the carried out investments to produce the expected returns.

At the same time, investors benefit from the high level of yields (4.78%, in 2017) and from the flexible remuneration strategies of the mini-bonds that occur through the payment of a periodic coupon, which can be fixed and constant throughout the period of the loan, or variable and indexed to some observable market parameter (in general the Euribor). All these measures make the mini-bond market more attractive on both the demand side (ie the potential investors) and the supply side (ie the issuing companies): both benefit from it, and with them also the Italian financial system, which needs an efficient and functioning credit market mechanism.

Mini-bond market in Italy

Taking into consideration the data of the Mini-bond Observatory of the “Politecnico di Milano”, the mini-bond industry in Italy in 2018, has confirmed and strengthened the constant development highlighted in previous years. At the end of June 2018, the listed securities were 604 for a total nominal value of over € 19.04 billion. With regard to the SMEs, the research identified 335 operations, from 221 issuing companies, for a value of € 3,545 billion. Looking at turnover, this is very variable: in 34% of cases it is between € 10 million and € 50 million, but there are also 76 companies with a turnover of less than € 10 million. As far as the business sector is concerned, there is a clear supremacy of the manufacturing sector (44% of the sample). The sectors represented are however many

diversified, from consumer goods to utilities, from information technology to real estate. Finally, the geographical location shows a clear prevalence of the northern regions; however, 2018 saw a lower significance of Lombardy, which still remains at the top of the ranking with 85 issuers. The average coupon of the mini-bonds issued by SMEs is 5.3% and the average maturity is 4.9 years.

2.2.2. The Basket bond experience

Is an innovative operation, finalized thanks to the contribution of the European resources of the Juncker Plan, which provides medium-long term financing at advantageous conditions (in the form of bonds), to companies participating in the ELITE program. Ten companies chosen by Elite for their quality and potential are tied together and issue bonds of the same duration and at the same rate, but each company for the amount of their needs. The amount is subscribed by a Special Purpose Vehicle (SPV) and which in turn, subsequently, issues a single type of securities of an amount equal to the sum of the individual instruments. The securities thus transformed are then transferred from the financial vehicle to a group of institutional investors - such as Bei and Cdp (Banca europea degli investimenti, Cassa depositi e prestiti) who take over them by signing almost the entire offer. The bond has a ten-year maturity and guarantees a yield of less than 4 percent. One of the characteristics that make the instrument unique, is the guarantee provided in a mutual form by the issuing companies: this mechanism, in fact, creates a unique alignment of interests among the issuers, since in case of non-payment of principal or interest on its bond, each company is within certain limits responsible for the performance of the others. For this reason, it has not been easy to have it accepted by companies, it is a matter of experimenting with a new path. This instrument was created in order to facilitate the access to credit for those companies that investors would hardly have signed their individual bonds, since too small to provide the necessary guarantees required by the market. Here are the ten companies that took part to the first basket: Damiano, leader of organic food; the Molteni pharmaceutical company; Objectway, specialized in software for financial institutions; Irritec, active in the irrigation sector; Gruppo Mep, cutting-edge solutions for the building industry; Cornaglia which operates in the automotive industry;

Peuterey for casual wear; the Rds radio; Svas Biasana for medicine; Tecnocap in the field of metal packaging.

Along the lines of the experiment of this first mini-bond securitization, in fact, the securitization of trade receivables, claimed by SME Elite, is being studied. It is a type of operation that is already well-established abroad and which in Italy, until now, the only importer was Credimi (**see Paragraph 2.4**). The basket of trade receivables would be purchased from an ad hoc vehicle on a revolving basis, and then would be bundled in asset-backed securities and placed among institutional investors, as it happened for Elite Basket Bond. This instrument with the aim of supporting the working capital of SMEs, will reduce their net financial indebtedness.

2.3. Technology enabled funding strategies: the fin-tech ecosystem

Fin-tech fully exemplifies the 'disruptive' power of innovation, combining the world of finance with that of technology. The term comprehends a variety of services and technologies for businesses and individuals, covering a wide range of financial products and services, which can radically change the way SMEs manage payments, stipulate contracts such as insurance and loans, and raise capital.

The Fintech ecosystem has developed over the last 8 years trying to fill the market space left uncovered by the traditional financial industry and partly by current regulations, introducing customer experience standards superior to those offered by traditional banks. According to the Fintech Adoption Index 2017 by Ernest & Young, the Fintech services have achieved an average adoption rate of 33% in the digitally active population, compatible with what Roger's innovation curve identifies as "early majority", making it official the beginning of a new phase for the sector, that of consolidation and mainstream adoption. In fact, in countries such as China, India and in general in emerging markets and those with large segments of the population without access to the banking system, the rate of adoption of Fintech services has increased dramatically, while in the more developed

Western economies, inertia to change has so far enabled traditional players to defend their dominant position. The development of Fintech is promoted not only by new technology start-ups, whose goal is to introduce disruptive innovations into the market, but also by large Internet giants such as Amazon, Alibaba, Google, Facebook, Microsoft and Apple. On the other end, traditional banks perceive the threat and respond by investing in the most advanced sectors of technology applied to finance, in particular on block-chain technology, in order to promote and support the birth of Fintech start-ups and in some cases directly expand digital banking. The huge investments in the sector, together with the introduction in Europe from 2018 of the PSD2 directive, are expected to lead the Fintech sector to grow and evolve further in the coming years, revolutionizing the way in which companies collect capital and obtain credit, make payments, receive advice and manage their administrative processes.

Firstly, we will analyse the **crowd-investing** industry, which can be classified according to what is offered in exchange for money: equity-based, lending-based and invoice trading.

- Equity-based: in this case is offered the underwriting of risk capital of a company;
- Lending-based: sometimes referred to as social lending or P2P lending: in this case the money is offered as a loan;
- Invoice trading: these are platforms through which it is possible to sell commercial invoices obtaining a cash advance, equivalent to the bank invoice discount.

Then there is a fourth reward-based model, applied by portals such as Kickstarter and Indiegogo where the reward is not financial, but represents an object, a product, a service and therefore is similar to a commercial transaction rather than financial.

Among the relevant services for the SME's universe, we analysed, as said before, **crowdfunding, ICOs, direct lending and invoice trading.**

2.3.1.Crowd-founding:

this is a collection of financial resources from the crowd on the Internet, aimed at financing business initiatives. Both small investors and professional and institutional investors participate in these campaigns. The size of the Internet, allows the collection of large

amounts of money with small size investments, if compared to the brokered channels by professional investors such as business angels, private equity and venture capital funds. While the 'social' dimension of the Internet, allows to create a collective involvement of lenders, who take part in the platform not only as capital providers, but also as possible contributors to the project itself, in the logic of crowdsourcing. Other advantages, are related to the possible value added given by marketing and 'critical-validation' actions through the network.

Crowd-funding market in Italy

Crowdfunding platforms has recently seen an excellent growth, thanks to the extension to all SMEs of this opportunity, initially reserved for start-ups and innovative SMEs. As at 30 June 2018, the Crowd-investing Observatory of the “Politecnico di Milano” counts 231 campaigns on authorized Internet platforms. These were made by 214 Italian companies, as we have several cases of issuers that have conducted more campaigns in subsequent moments, and have raised risk capital for € 33.3 million (of which € 11.6 million in 2017 and € 14.2 million in the first half of 2018). Of these companies, 181 are innovative start-ups (equal to 84.6% of the sample), of which 175 Srl and 5 Spa, 18 are innovative SMEs (equal to 8.4% of the sample), of which 16 Srl and 2 Spa, 11 are SMEs (equal to 5.1% of the sample), all Srl and 4 vehicles that mainly invest in start-ups or innovative SMEs. This is mainly a matter of small start-ups, but good growth is expected for the future with real estate transactions and campaigns that will be launched by mature SMEs.

Lending platforms have provided Italian SMEs with loans for € 60.3 million up to 30 June 2018, of which € 53.9 in the last 18 months.

The reward-based platforms complete the picture, mainly conducted on US portals such as Kickstarter and Indiegogo, that allowed Italian companies to raise € 7 million.

2.3.2.ICOs:

The great interest that has grown up around cryptocurrencies and block-chain technologies, has prompted several entrepreneurs to launch themselves into the market of Initial Coin Offerings (ICOs), raising capital on the Internet by offering digital token subscriptions. Tokens allow subscribers to access products and services and sometimes to actively participate in the business project. These tokens are often traded on specialized platforms, which collect capital through the Internet, just like in a crowdfunding campaign, but with two important differences:

- there is no need for an authorization, which selects the campaigns to be published discarding the less reliable ones;
- the peculiarities of the block-chain technology in terms of security, guaranteed by distributed cryptography, means that there is no need for a third party to process the payment (a credit card, a bank that manages the bank transfer).

This totally disrupts traditional payment systems, with advantages, as reduced costs, and related disadvantages, referred for example to anti-money laundering procedures. The ICO process starts when the project team offers on the virtual market tokens, that can be purchased in exchange for payments in cryptocurrencies or, sometimes, even in traditional currencies. White paper document contains all information concerning the offer, useful to a potential contributor to evaluate the project and the objectives to be achieved with the money. This document is created by the proponents and it not requires an approval by market authority or third party. That is why, participating in an ICO, involves high risks of losing money, because there is no particular guarantee on the commitments stated in the white paper, nor there is the possibility of verifying its important aspects and very often there is not even an already constituted company or vehicle that will carry out the project.

ICOs market in Italy

The world market was virtually non-existent until 2016, when 34 transactions were recorded, with just \$ 200 million collected. In 2017, 897 transactions were registered

worldwide, with a value equivalent to about \$ 6 billion. In the first half of 2018, 854 ICOs were identified, which raised \$ 12.25 billion. The 2018 numbers were only partially slowed by the unfavourable trend in cryptocurrencies exchange rates against the dollar and the growing attention of public authorities.

Regarding the Italian context, we have identified 16 ICOs up to the date of 30 June 2018 promoted by teams made up of more than 50% by Italians, who raised about \$ 150 million. The operations that are clearly attributable to existing or newly created Italian SMEs have a collected amount of € 80 million.

2.3.3. Direct lending

It consists of credit provided to companies by non-bank subjects through direct loans. This is the least developed segment at the moment, because it only marginally involves SMEs. In addition, as stated in the “Politecnico di Milano” report, is the one where it is more difficult to collect exhaustive information, because these are not publicly available. They talk about few Italian SMEs that have obtained a direct loan from specialized funds, for an amount of around € 20 million.

Direct lending market in Italy

At European level the market is in a developing phase. According to Deloitte's latest analyses published in the “Alternative Lender Deal Tracker”, in the first quarter of 2018, 76 deals were concluded (of which 27 in the United Kingdom, 20 in France and 8 in Germany). In Italy the market is still underdeveloped if compared to EU, few national and international investors have provided direct loans to Italian companies, in particular: Emisys, Green Arrow Capital SGR, Hedge Invest SGR, Idinvest, Pricoa, RiverRock and Tikehau. Totally, there were 25 transactions, for a total amount of € 311 million. The largest part, however, deals with operations aimed at financing companies that cannot be classified as SMEs. There are several initiatives of funds, which are raising money and could become operative in 2019: Dea Private Debt, HIG Whitehorse, Main Capital Fund I, Quaestio Private Markets Funds European Private Debt. The Italian market delay is partly linked to some regulatory doubts on the possibility of direct credit disbursement, recently solved. The estimate made

by the Observatory, projected on undisclosed transactions, is that until the half of 2018, direct lending contributed to the alternative finance of Italian SMEs for € 20 million.

2.3.4. Invoice trading

- 1) consists in the sale of a commercial invoice in exchange for cash received in advance through an online platform. This is not properly a capital raising operation, but since represent the sale of an asset, it can be associated to a capital raise, having the same financial effects, and translating into a cash entry. The invoices are often used as underlying assets for securitization transactions.

The typical profile of the companies financed is that of SMEs, which find difficult to be entrusted by a bank, because they have considerable size orders, too onerous to be financed through existing credit lines. The main advantages regard:

- **Unsecured capital:** companies have the possibility of accessing liquidity to finance their working capital without guarantees or collateral, precluded through other channels;
- **Easy procedure:** the sale does not require for companies the reporting to the Central Credit Register of the banking circuit;
- **Discipline:** the possible sale is perceived as a factor of education in the payment of credit.

Disadvantages regard the fact that having a professional financial investor as invoice counterpart is certainly more inconvenient for a client than his usual supplier to whom he can spend more bargaining power.

Invoice trading market in Italy

As at the first half of 2018, in Italy, there are 6 operators active in invoice trading activity: Cashinvoice, Credimi, CashMe, Crowdcity, Fifty, Workinvoice. These platforms mobilized € 612.2 million, of which € 580.8 million in the last 18 months. It should however be noted that the investment cycle of this business is very short, since invoices have an average expiration of 3-4 months. Therefore, many of the resources counted have been reinvested several times over the period analysed, and the same companies have sold more invoices

over time. The Observatory estimates that this funding channel has been used by 900 Italian SMEs, and so is the most widely used instrument among all those considered. Invoice trading is one of the few sectors where Italy can hold the comparison with Europe.

Now that we analysed in detail all the main alternative financing solutions, we summarize what previously said in the table below, highlighting the financing type, by distinguish between equity and debt, the time horizon of the investors, which could be short, mid or long, and investors' typical category.

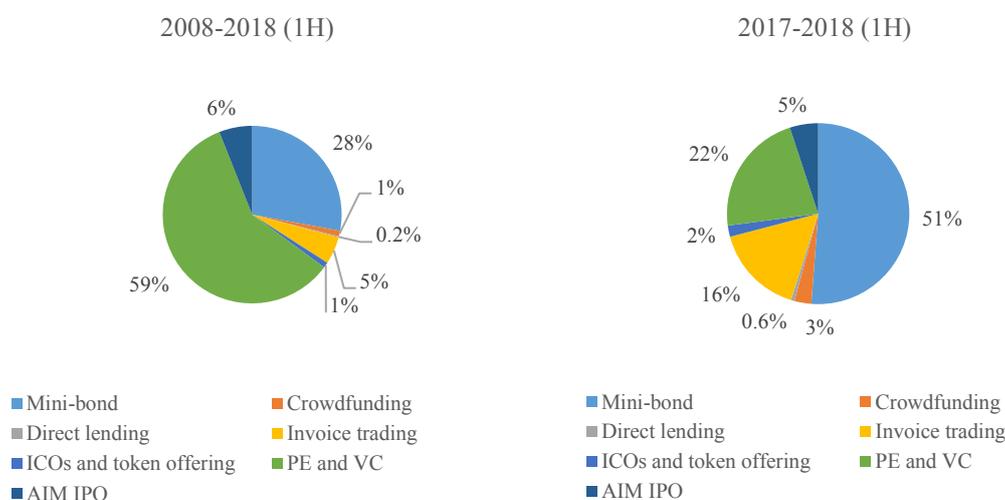
Table 8: Alternative financing sources - summary

	Financing type	Time horizon	Typical investor type
Bank loan	Debt	Short, mid, long	Bank
Mini-bond	Debt	Short, mid	Professional
Crowdfunding	Reward, Equity, Debt	Function of campaign	Retail and professional
Invoice trading	Invoice disinvestment	Short	Professional
Direct lending	Debt	Mid	Professional
ICOs	Digital token	Variable	Retail
PE and VC	Equity	Long	Professional
IPOs	Equity	Long	Retail and professional

Source: students' elaboration

The figures described in the previous paragraphs cannot be easily added together, because as mentioned, they do not always refer to SMEs with certainty and also because they concern very heterogeneous investments in terms of repayment cycles. Nevertheless, we believe that the comparison can be useful to understand toward which direction the market is now going.

Chart 12: Alternative financing market by channels



Source: students' elaboration

If we look at the last decade, **(see Chart 12)** we see how, from 2008, alternative financing channels has been dominated by private equity funds, even if the mini-bonds issued by SMEs have cut out a significant space in a short time. On the contrary, if we limit the attention to 2017 and to the first half of 2018, the situation substantially changes and we see that the importance of mini-bonds and all other innovative instruments, especially invoice trading, is growing.

- The large gap with other European countries shows that in the alternative finance market for SMEs there is room for new actors and continuing growth.
- The number of SMEs that rely on alternative finance in Italy is still very low. Summing up the contribution of all the channels identified, we reach over 1,800 companies in the last 18 months (1.3% of SMEs)
- Finally, the development of the alternative finance market in Italy has generated tangible benefits for companies in terms of time and costs to access to capital. In particular, has enabled many SMEs, previously excluded from this opportunity, to increase their competitiveness, to diversify financial sources, but also to increase investment opportunities, managerial skills and visibility on the market.

Elite as cultural innovation

ELITE is an international platform of services created to support companies in the realization of their growth projects through a path of organizational and managerial development aimed at increasing competitiveness and visibility towards investors. The goal is to 'train' SMEs to access to capital markets and alternative financial instruments. ELITE is dedicated to the most ambitious companies, with a solid business model, a clear growth strategy and interested in learning about all the tools available to finance their future growth. To date, almost 600 Italian companies have participated or are participating in the program.

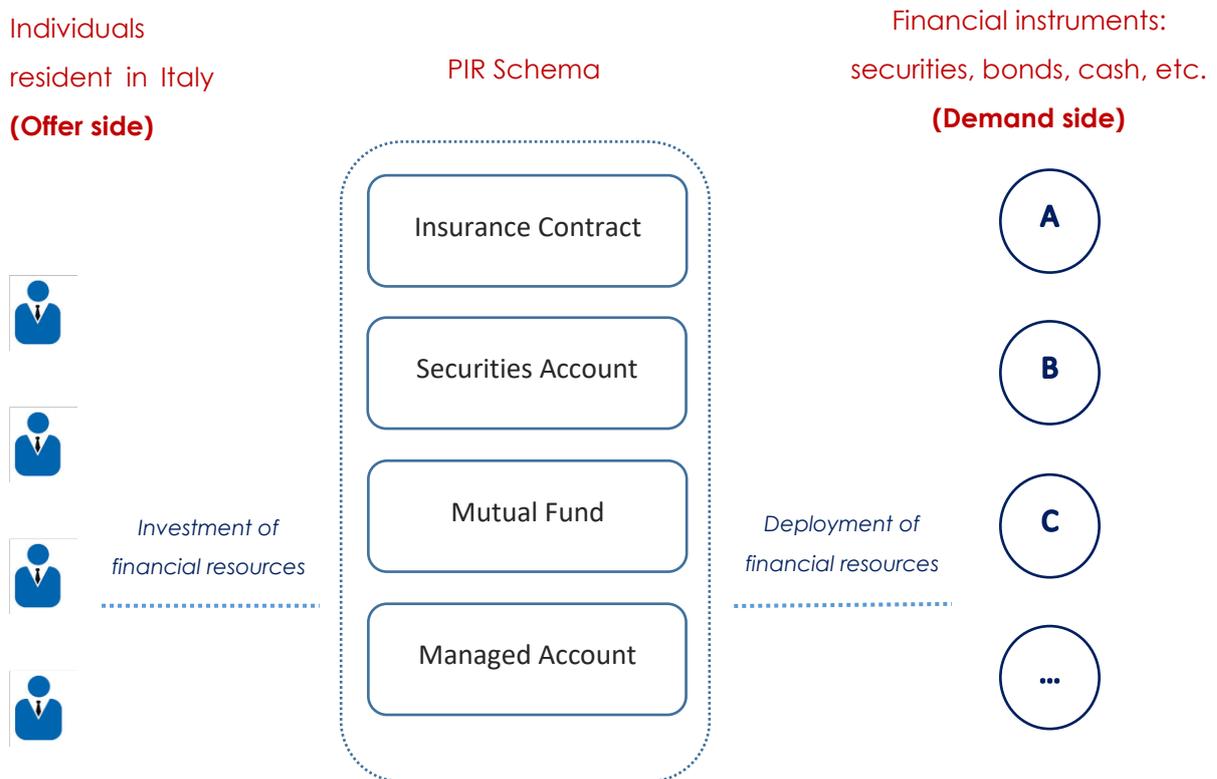
PIRs

2017 was also the year of introduction of PIRs (individual savings plans) in the Italian asset management industry. The idea is to make tax exempt the financial incomes accrued on a portfolio of securities held for a certain minimum period of time by individuals. This is a form of savings already present and widespread in some foreign countries, albeit with different characteristics. PIRs were introduced in Italy with Law 232/2016 ('Budget Law 2017'), with the aim of encouraging the flow of financial resources towards investment in the real economy, especially in SMEs. To benefit from the tax exemption on capital gains and inheritance taxes it is necessary that the investment portfolio be maintained for five years. Moreover, it must be composed by at least 70% of securities issued by Italian companies or companies with a permanent establishment in Italy (of this 70% at least 30% must be invested in companies not listed in the FTSE MIB index, including typically those issuing mini-bonds). Finally, the maximum amount of the investment must not exceed 30,000 € per year, resulting, with respect to the minimum holding period, in a cumulative amount not exceeding 150,000 €. PIR instruments will be analysed in detail in the following chapters.

3. PIRs: Piani Individuali di Risparmio – The normative

With the 232/2016 law ('Legge di Bilancio 2017') the Italian Government introduced a new financial instrument tailored for investments made by individuals, resident in Italy. This Instrument, called PIR (Piano Individuale di Risparmio), is a box (**see chart 13**) that can take the form of: a managed account, securities account, mutual fund or insurance contract into which investors can put their savings. The PIR is assigned to a physical person and it can ensure **fiscal incentives** under determinate **investments constraints**.

Chart 13: PIR Schema



Sources: students' elaboration

Fiscal incentives allow PIR subscribers to obtain tax free income (capital gains and dividends) and to enjoy exemption from inheritance taxes. To be entitled for a PIR scheme, investors have to respect the following **investment constraints**:

a) up to 30% of the investment may be deployed in any kind of securities or cash (including derivatives) listed or not listed;

b) no less than 70% of the investment must be employed in financial instruments (equity or bond, listed or unlisted) issued by Italian companies or European companies with a *permanent organizational establishment*¹³ in Italy. Securities must be retained for at least two-third of the fiscal year;

c) at least 30% of the 70% bound (thus 21%) must be invested in securities which are not listed on the FTSE MIB index or on other comparable European indexes;

d) financial instruments of a single issuer and its liquidity must not be higher than 10% of the total Investment value (*concentration limit*), for at least two third of the year. In addition, qualifying holdings are prohibited;

e) individuals can invest up to €30k per year and the total investment cap is set at €150k. To benefits from the fiscal incentives, investors must retain the PIR compliant investment for at least 5 years. Any individuals cannot subscribe more than one PIR.

The following D.L. 50/2017 extended the possibility to subscribe a PIR account also to statutory pension entities and to the alternatives forms of supplementary pension. The two Institutional investors can invest into the PIR a maximum of 5% of their net asset value. In addition, with the 2018 Budget, real estate companies became eligible for inclusion in the universe investible by a PIR.

¹³ Companies that invest human capital and financial capital (subsidiaries, plant, equipment, etc.) in Italy and pay taxes in Italy

Table 9: PIR characteristics and constraints

PIR – Main characteristics

What is it?	It is a diversified portfolio of securities in the form of: managed account, securities account, mutual fund or insurance contract;
Who can subscribe it?	All individuals resident in Italy. Children under 18 are considered as well;
Which are the benefits?	Tax free income (capital gains and dividends) and exemption from inheritance tax;

PIR – Main constraints

Holding Period	The minimum duration to benefit from fiscal incentives is set to 5 years;
Inflows	Up to 30k per year, to a maximum investment of 150k set for the 5-year period;
Investment	70% of the investment in Italian companies' securities (bond or shares) of which 30% (21% of the total) should be invested in SMEs. The remaining 30% of the total, in any kind of securities or cash;

Everything considered, the main objectives of the Legislator with the PIR normative were: **a)** to educate and nudge Italian families towards more sustainable and profitable investments that are long term oriented and able to guarantee higher expected returns, if compared to bonds and houses; **b)** to transfer family savings into the real economy, supporting Italian companies with an alternative way of financing in order to reduce their dependence from the banking system. The focus is on SMEs (i.e. small and medium

enterprises not listed on the FTSE MIB) that showed potentials for a structured future growth in terms of profitability and turnover; c) to facilitate and support the development of national financial markets with the specific aim of increasing the ratio between the relative market cap over the GDP.

3.1. Clarification on the PIR normative

However, given the high level of innovation, the PIR instrument required further government and specialist's interventions in order to explain and clarify some procedural problems and incongruences. Hence, we tried to summarize all the most important developments and clarifications about the newbie investment instrument. We considered the guidelines document provided by the Italian Minister of Economy and Finance (MEF) published in October 2017, the Circolare of Agenzia delle Entrate (Revenue Agency or AE) n. 3/E, February 2018 and all the information collected during interviews and meetings with operators of the sector such as Assogestioni; Results follow.

3.1.1. Clarifications on the eligibility for the qualified investment (70% bound): which securities are PIR compliant?

1) Private Equity and more in general FIAs (Alternative Investment Funds): *Green light*

Alternative Investment Funds and in specific Private Equity funds have the strategic object of investing in target companies (that usually are not listed on a stock exchange) in order to provide them all the financial and managerial resources that are essential to undertake a future growth and create value.

Indeed, FIAs investment strategy is for the long-term, and this requires FIAs to usually invest more than 10% of their assets under management (AUM) in a single deal. As a consequence, Private Equity funds (as well as Venture Capital Funds, Private Debt Funds,

etc.) run the risk to lose the eligibility to become PIR compliant funds because of the 10% constrain: *concentration limit*.

This issue brings to an obvious contradiction: the legislator, with the **concentration limit**, is excluding to FIAs the possibility to raise capital from savers as a PIR compliant fund and to deploy them into the real economy. This is a contradiction as FIAs are the OICRs¹⁴ (Organismi di Investimento Collettivo del Risparmio) which have the better experience and capability to invest financial resources into SMEs that are not listed, and thus contributing to the long term development of the real economy, as in the objective of the Italian Government.

The question is: can securities of non PIR compliant fund, such as PE funds *can be included in the 70% of the investment bound by PIRs*? The answer of the Ministry of Economy and of the Revenue Agency is "yes".

The solution to the problem is in the guidelines provided by the MEF and confirmed also by the Revenue Agency. The two documents explained that, in case of an OICR that invests its PIR compliant funds into another fund, the investment restrictions can be verified without considering the concentration limit on the investments of the investee fund. In light of these indications, a "PIR compliant" fund (typically a retail fund in the form of OICR) that allocates a portion of its investments into a "non PIR compliant" fund, for example an OICR fund in the form of a FIAs (let's consider a Private Equity Fund), within the limits of the regulatory framework¹⁵, verifies the composition of its portfolio essentially by consolidating the portfolio of the underlying fund (the PE fund) for the portion attributable to the investment (**see Chart 14**). In this way, thanks to a "look through" approach, the "PIR compliant" fund will be able to participate also in the financing of SMEs. The effect would be particularly virtuous as the typical investments of Private Equity funds and more in general FIAs are related to unlisted companies that needs funds to growth and thus are the preferred target for PIR flows, according to the regulatory purpose.

¹⁴ CIUs in English

¹⁵ art. 1, commi 102, 103 e 104, L. n. 232/2016

Chart 14: PIP to PE investment case – a graphical example

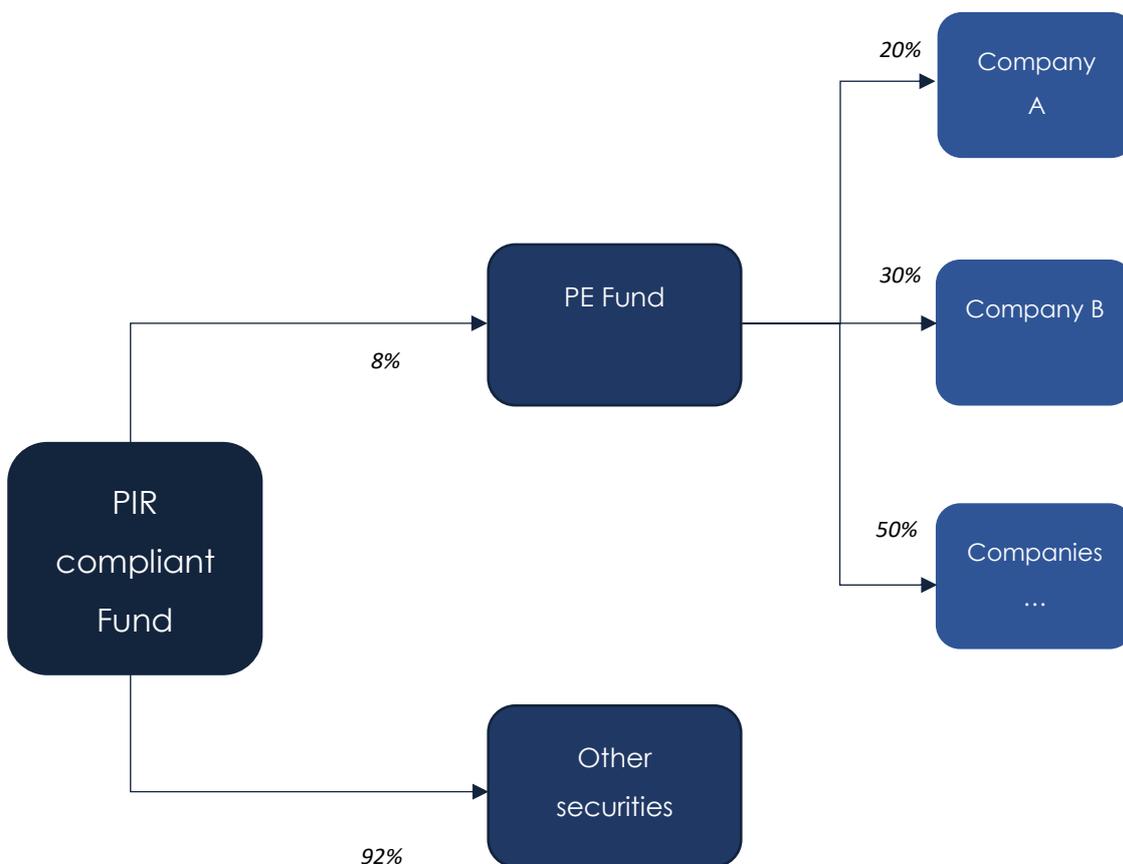


Chart 15: PIR to PE investment case - computations

PERCENTAGE OF INVESTMENTS	SECURITIES
$1,60\% = 8\% * 20\%$	Company A
$2,40\% = 8\% * 30\%$	Company B
$4,00\% = 8\% * 50\%$	Companies ...

2) Special Purpose Acquisition Company: Green light

The Special Purpose Acquisition Company (SPAC) is an investment vehicle created with the objective of collecting financial resources from the market and invest them in the

acquisition of unlisted companies “target”: a firm with high future potential upsides on turnover and profitability, (see paragraph 2.1.4).

Units of the SPAC are offered to the subscribers in exchange of money. The Units can be considered as a mix between a share of the SPAC and a warrant assigned to the subscribers. Assuming that the *Regulation on Collective Investment Management* (Title V.3.14) does not consider warrants as derivatives instruments, the question is: *can Units be included in 70% of the investment bound by PIRs?* The answer of the Ministry of Economy and of the Revenue Agency is "yes".

As described before, the SPAC is focused on selecting unlisted companies with strong potentials for future growth and finance them to create value. Hence, they are considered to be in line with the philosophy of the legislator as they represent both an alternative financing way to the banking channel and a fundamental player in the financing and development of the Italian economy.

3) Derivatives: Yellow light

Yes or no to derivatives in the 70% bound? On this point, the Revenue Agency has chosen a clear separation: starting from the assumption that derivatives are instruments of coverage, the Agency decided to foreclose them the possibility to be eligible for the 70% bound.

They can be used within the remaining 30%, which is not bound, with the aim of covering any losses reported by qualified instruments (shares and bonds).

The Revenue Agency also underlined that if the returns made with derivatives outweighs the losses of qualified investments, then they will be taxed. The objective of this clear stance is: not to miss interpretate the role of PIRs, in transferring savers wealth into Italian companies as a financing alternative to the banking channel, and to discourage any speculative "temptation".

4) Special Purpose Vehicle: almost red light

Another problem concerns the securities issued by the Special Purpose Vehicle (SPV). In or out?

These companies are vehicle, not industrial neither commercial, which issue financial instruments that usually are the result of a securitization process on credits of different nature.

Hence, the title issued by an SPV represents a credit. And, by subscribing to it, no money is given to companies and therefore no "fuel" is given to the real economy. As a consequence, SPV are considered to be "off the subject". These securities can potentially be included in the PIR, but absolutely not in the qualified 70% of the total investment, and with great caution.

5) Real Estate: almost red light

According to the 2018 Budget, real estate companies became eligible for inclusion in the PIR fiscal regime. In particular, investments eligible for the 70% bound are allowed in: a) SIIQ (Società d'Investimento Immobiliare Quotate) that are Listed companies which invest in real estate assets intended only for renting purposes (REIT¹⁶ in Europe); b) SIINQ same as before but not listed; c) Real Estate Funds which do not invest into Real Estate Asset for buying and selling purposes but in Real Estate Companies (firms whose main source of revenues should come from an operational business). In the not bounded 30% of the total investment, can enter also NPLs (Non-Performing Loans). According to our resources, PIRs can buy mezzanine and junior tranches, while senior notes are excluded due to GACS¹⁷ (Garanzia Statale sulla Cartolarizzazione delle Sofferenze).

¹⁶ Real Estate Investments Trust

¹⁷ GACS are warrants that cover the risk of default for NPL senior tranches. However, in September 2018 there is the possibility of no further extension of GACS.

3.1.2. Other relevant clarifications

1) PIR for under 18 individuals

PIRs are tailored for individuals resident in Italy. Any individual cannot subscribe more than one PIR but there is a limit on age: under 18 individuals cannot subscribe a plan. However, in this case the Revenue Agency pointed out that the under 18 individuals can benefit from fiscal incentives only if the parents did not subscribe any other PIR. This is because children's returns are subjected to the legal usufruct of their parents.

2) PIR - Holding Period

The calculation of the five years constraint is computed taking into consideration the exact date of purchase (or subscription) of the financial instrument as *starting date* and the one of transfer or repayment as *ending date*. The purchase action refers at the time in which the relative sums are actually paid. In addition, the maximum investment of euro 150 thousand can be full filled in more than five years. Limitations are on the total amount of funds to be invested in one-year period: up to euro 30 thousand per year. Example: an investment of € 15.000/year for 10 years is equivalent to an investment of € 5.000/year for 30 years.

3) PIR - Statutory Pension Entities and alternatives forms of supplementary pension

The two operators can invest in PIRs financial resources up to a maximum of 5% of their total asset value (calculated on the last available fiscal year). If their asset value increases, compared to the previous fiscal year, they can invest 5% of the additional value. If decrease, no further investments are allowed.

4) From PIR A to PIR B

According to the law (art. 1, comma 111, Legge di Bilancio 232/2016) in case of repayment of a financial instrument A (PIR compliant) before the five-year period and the re-investment of the funds into another financial Instrument B (PIR compliant), the holding period accrued from the possession is added to that of the new instrument purchased. The

replacement of the first instrument with the second, can thus guarantee fiscal benefits to the subscribers if the operation is compliant with all the other constraints.

5) From Bank A to Bank B

According to the law it is also possible to transfer a PIR compliant account from a Bank A to a Bank B: in this case it is important that the new account must be referred to the same investor. It is due of the bank in which the account has been transferred to obtain all the information necessary to the management of the PIR account from the previous bank.

6) Can an investor sell a security of its PIR compliant account, without exiting the PIR investment?

Yes, an investor can decide to sell one or more financial instruments included into its PIR account; if the financial instruments sold has not been contained into the PIR account for more than five years, returns are taxed. However, returns are not taxed if the capital gained with the selling action is re-invested into the same PIR account buying new financial instruments.

7) Italian individuals who transfer their residential to other countries

The Italian Minister of Economy and Finance clarified that PIR fiscal benefits are only for Italian individuals: in case of the change of residence into another country the investor will not benefit anymore from the fiscal incentive. Tax exemption will be applied only on the financial instruments included into the PIR account before changing the residential address and only if hold for a minimum of five years, as stated in the normative.

3.1.3.Future relevant interventions

For the future, we expect the government to make further intervention on the following themes:

- a)** the possibility for investors to convey part of their PIR investments into innovative start-up;
- b)** the option for parents to subscribe more than one PIR in case they decide to institute a PIR scheme also for their children;
- c)** clarifications on the perimeters of adoptions of PIR instruments and ELTIF (European long term investments) funds.

Regarding point **a)** the Government declared the intention to introduce the possibility for PIR accounts to invest up to ca. 3% of their total asset value into start-ups. In this way, the government assure new funding to Venture Capital in Italy, with the intention to promote value added businesses that could have the potential to growth in the future and create wealth and jobs in our country.

Regarding point **b)** we believe that the Government could intervene by allowing parents to overcome the constraint of “*the legal usufruct*” and benefits from fiscal incentives even if they created a PIR portfolio for their children. The instrument is designed for long term investments and thus we believe that is essential for families to have the possibility to subscribe PIR scheme for their children.

Finally point **c)** is referred to ELTIF funds, and how they will coexist with PIRs. ELTIF funds are closed end instruments introduced in Europe in December 2015 with the objective to allow retail investors to invest into FIAs (that usually are closed end funds, not tailored for retail investors) and invest savings into European small and medium enterprises, with a long-term view. Indeed, the instrument is to be considered as an alternative financing strategy to the banking credit. ELTIF portfolios are very similar to PIR portfolios, except for:

- 1)** the fiscal incentives that are not present;
- 2)** the type of fund, they are closed end fund;
- 3)** investments constraints that focus on deploy savings to European based companies

rather than Italian. But the “purpose” is the same: to intercept retail savings and to convey them into the real economy. However, there is no evidence on whether or not, an ELTIF Fund could become, under certain constraints, a PIR compliant fund and thus benefits of fiscal incentives.

We believe the legislator will intervene on this point to define the perimeter of actions of the two instruments and create a paired-system in which the investors and economy as a whole will benefit from the characteristics and the advantages of both the instruments.

3.2. International experiences: Best practices and criticalities

In **paragraph 2.1** we illustrated the normative that regulates the newbie “Piani Individuali di Risparmio” in Italy, and we gave a comprehensive and exhaustive descriptions of all its features and field of applications. In this section, our aim is to perform a literature analysis on international experiences to make a comparison with similar instruments working abroad, that probably inspired the Italian version. This is useful in order to define best practices and to discover which could be potential criticalities on the PIR Instrument. In particular, we will consider the following cases: France 1992, United States 1997, United Kingdom 1999, Canada 2009 and Japan 2014. These foreign experiences will be discussed starting from the oldest to the newer. Results on the analysis follow.

3.2.1. France, 1992

The French government in 1992 introduced the PEA (Plan d’Epargne en Action). These kind of instruments represents saving plans that guarantee fiscal incentives for investors upon certain constraints.

Fiscal incentives regard: a) the possibility to gain a tax discount if the investments is retained for at least 24 months; b) the possibility to obtain a complete tax discount on returns if the investments is held for 5 years.

To obtain those benefits, the investor has to respect further requirements: It is required that, at least 75% of the amount invested, is invested in financial instruments issued by companies of the European Union, or Liechtenstein, Iceland and Norway. Moreover, the maximum investment limit for each saver is equal to € 150,000 and it should be noted that it is not possible to include bonds in the selection.

In addition, we report all the evolutions that characterized the normative:

- 2011, the real estate companies qualified as sociétés d'investissement immobilier cotées (SIIC, in Italy SIIQ) are no longer allowed in PEAs investment, as they enjoy other financial exemptions;
- In 2014, in order to boost the supply of capital to SMEs, PEA-PMEs were introduced, which extend the investment limit mentioned above with an additional ceiling of €75,000, of which at least 75% must be provided to finance small and medium-sized enterprises, and at least the 50% must be allocated in equity securities (the bonds are therefore allowed for the remaining part). UCITS quotes can be considered eligible investments for a PEA-PMEs so long as:

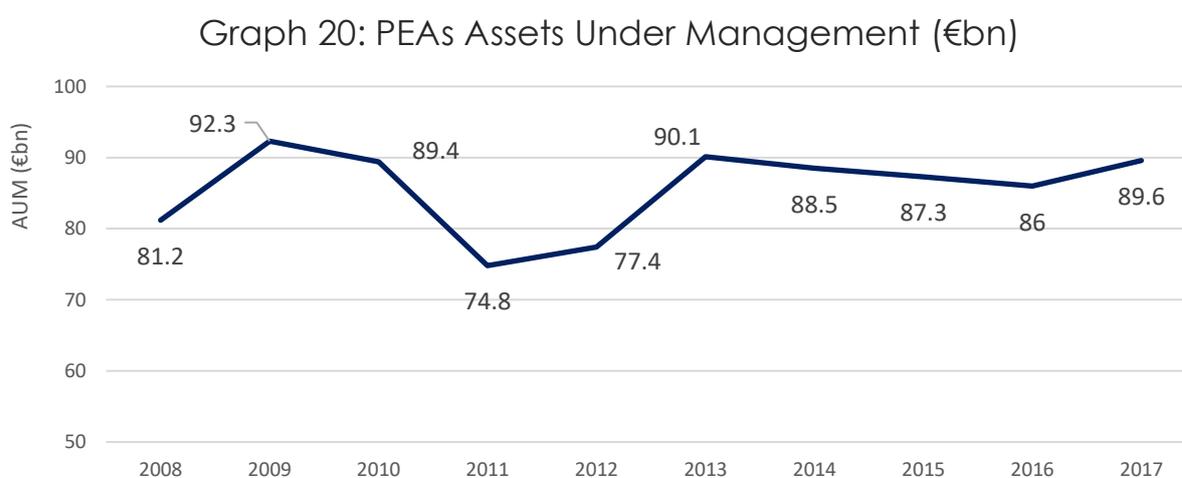
1) the fund invests at least 75% of its assets in eligible companies;

2) at least 50% of the securities issued by eligible entities are equity instruments;

However, the France definition in order to identify a small medium-sized business is quite 'generous': less than 5,000 employees, turnover under € 1.5 billion or total assets below €2 billion value.

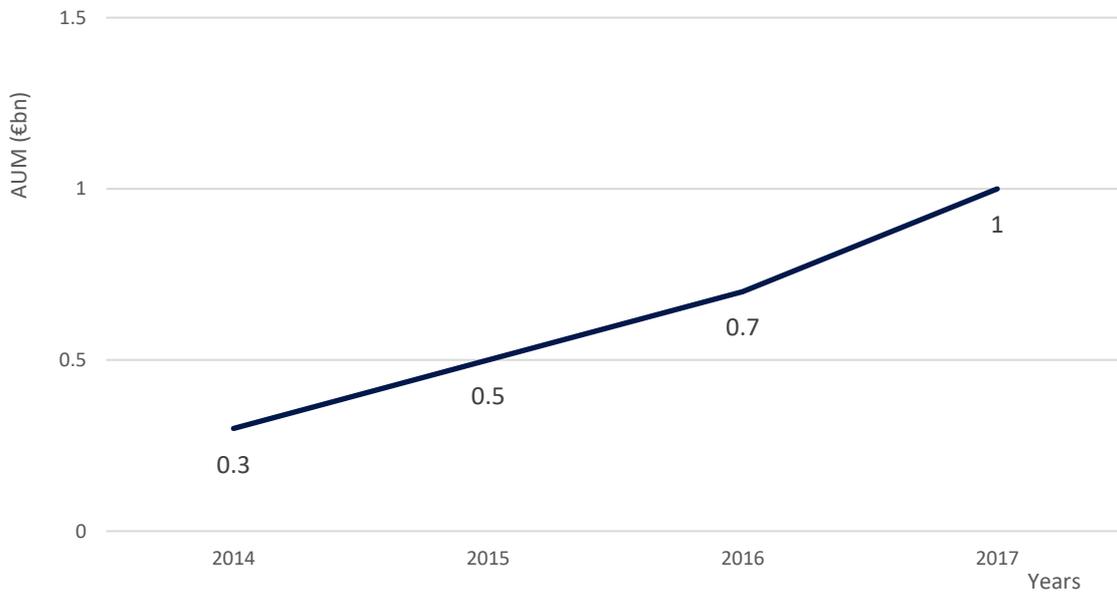
- In 2014, the EuroNext stock market introduced an index (Euronext PEA-PME 150 Index) that replicates the performances of 150 stocks listed on the French list that they respect the requirements of the PEA program.

From their beginning in 1992, PEAs have collected 120 billion euro (see Graph 20).



Source: Banque de France

Graph 21: PEA-PME Asset Under Management (€bn)



Source: Banque de France

Graph 21 shows that the success of the PEAs in France appears limited and since 2008 in ahead, the total volume of assets under management, at market value, is stable between 80 and 90 billions of Euro. However, their success has recorded a gradual decline in recent years: if in early twenties there were 7.5 million subscribers, in April 2013 the number had fallen to around 5 millions of plans. According to the statistics of the Banque de France, at the end of 2017 the number of PEA dossiers fell for the first time in the last 5 years under 4 million, almost half compared to the situation before the 2008 financial crisis. We can also affirm that the PEA-PMEs haven't 'broken through' if it is true that, only three years after their birth, little more than 62,000 dossiers were opened, with only 1 billion Euro invested at the end of 2017.

3.2.2. United Kingdom, 1999

The "British PIR" are called Individual Saving Account, they were introduced in the United Kingdom in April 1999, replacing two previous plans: Personal Equity Plan (PEP) and Tax-Exempt Special Savings Account (TESSA).

They are tax-free savings accounts and we can identify:

- 1) the 'cash ISA': these are financial products similar to bank deposit accounts;
- 2) the 'stocks and shares ISA': these are investments in government securities, bonds and shares and/or funds quotes; unlike the Italian case, however, there are no particular constraints in the composition of the portfolio;
- 3) the 'innovative finance ISA': this is a variant, introduced in 2016, which provides investment in 'peer-to-peer lending', or in web platforms such as Zopa and Funding Circle, which provide loans to individuals and companies, mainly financed by institutional investors but also by small savers;

Profiles are not mutually exclusive, so a British saver can also hold investments in all three types of ISA. Among these, we can make a further classification, distinguish between:

- 1) Adult ISAs, generally for anyone 18 and over;
- 2) Junior ISAs, for anyone younger than 18 (replaced Child Trust Fund);

Fiscal incentives for all the accounts regard the complete tax exemption on returns of the investment with no particular constraints on the minimum holding period neither on the portfolio composition. Investors can deposit on their accounts funds, shares, bonds, insurance policies, with no any particular constraints on the issuer's native country, but also liquidity (with a maximum limit).

Some requirements must be respected by the investors in order to obtain those benefits:

- 1) Eligibility to contribute is restricted to individuals who are:
 - 16 or over for a 'cash ISA';
 - 18 or over for other types of ISAs;
 - UK resident for every account or a Crown servant or spouse/civil partner outside of the UK.
- 2) Annual maximum investment:

- the limit for the annual maximum investment in the three ISA plans, amounted to £20,000 for each individual tax payer, distributed to pleasure (initially the value was £15,240 per year). The legislator has increased the limit from 2014.

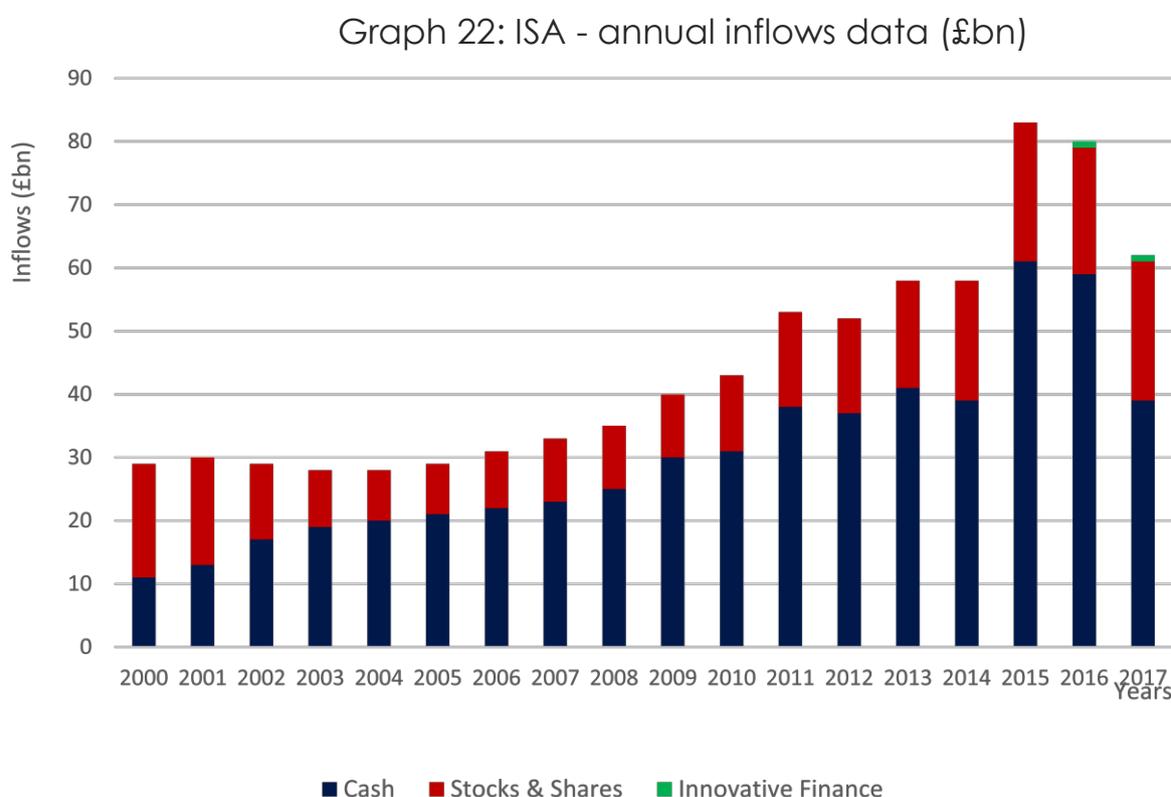
In addition, we report all the evolutions that characterized the normative:

- The legislation provides that the ISA management can be freely transferred from one intermediary to another one.
- In 2005, life policies were however eliminated by the ISA-compliant investments.
- The 'junior ISAs' were established in 2011 by the government as a form of savings for minors, with the particularity that investors can redeem what earned or can convert it to Adult ISAs only at 18 years old. The maximum annual investment limit for this instrument is settled to 4,128 pounds.
- Moreover, in 2015, in order to support the purchase of the first house, the British government launched the 'Help to Buy ISAs': these are investment plans aimed at buying the first house which, in addition to the tax benefit, provide to investors an additional public contribution equal to 25% of the amount invested, up to 3,000 pounds.
- In 2017, the 'Lifetime ISAs' were introduced for young people up to 40 years and they will replace the 'HTB ISAs', having more or less the same purposes. Particularities of this new plan mainly regard the eligibility rules in order to contribute: in fact, to open a LISA, investors must be aged between 18 and 39 years old and must be a UK resident or a Crown Servant or spouse/civil partner of Crown Servant.

We can affirm that ISAs have been very successful, especially among medium-low income families, due to the fact that half of the tax payers who have activated an ISA have an annual income lower than 20,000 pounds.

According to the 2017 official statistics of HM Revenue & Customs, 43% of British adult citizens hold an ISA. As of today ISAs manage 518 billion pounds of assets, of which 160 were collected in the last two years.

Graph 22 highlights the flow of annual investments, which hit a record in the 2015 year, with over 80 billion pounds. This is due to the government decision to increase, in that year, the maximum investment ceiling. The flow of funds then reduced in 2017, scoring 62 billion. It should be noted that the largest part of the investments comes from Cash ISAs. Very

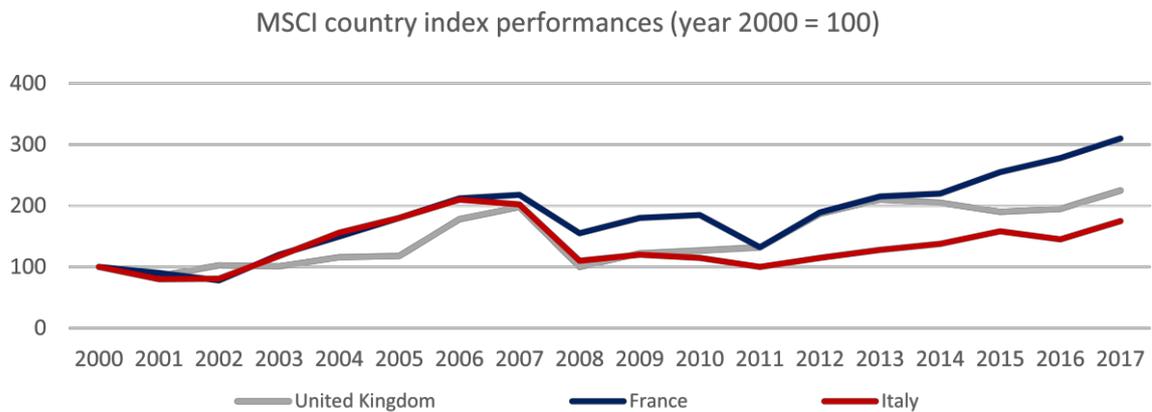
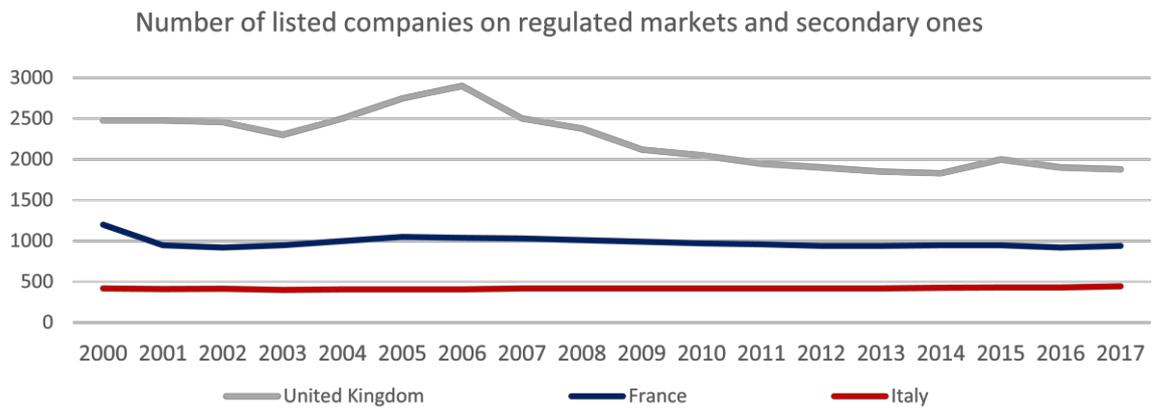
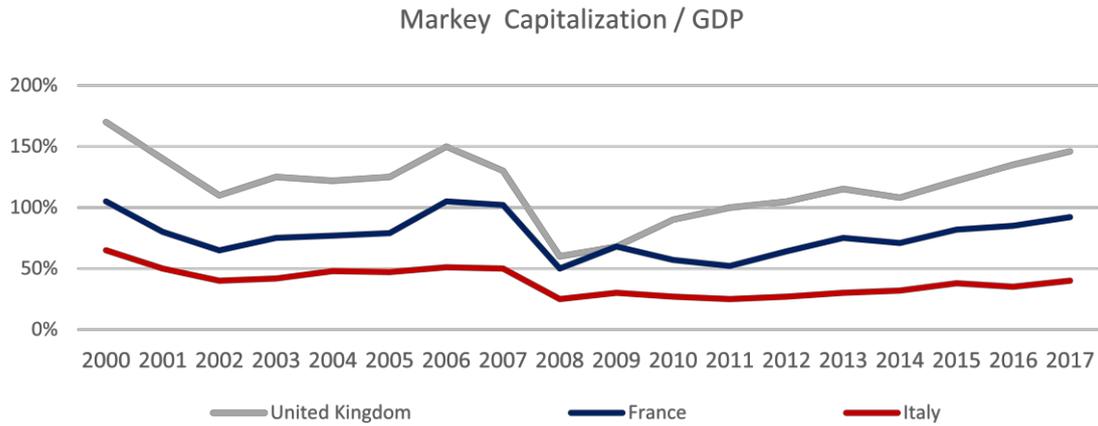


Source: HM Revenue & Customs (2017)

limited, in relative terms, is instead the contribution provided by the Innovative Finance ISAs, almost imperceptible in the figure. In addition, the Junior ISAs raised 858 million pounds in the 2017 year.

Since we believe that French and British instruments were the main source from which the Italian legislator was inspired in order to settle the PIRs features, but also that as for the PIRs, PEAs and ISAs are the only two experiences analysed that work in the Euro Area, it is necessary to make a comparison between the three contexts. **Graph 23** highlights some key statistics on the evolution of stock markets in Italy, United Kingdom and France since the year 2000, both with respect to the number of listed companies and the stock exchange capitalization as proportion of the gross domestic product. Compared to France and the

Graph 23: Statistics on the primary and secondary stock market in Italy, United Kingdom and France from 2000 to 2017.



Source: London Stock Exchange, Euronext, Milan Stock Exchange, World Federation of Exchanges

United Kingdom, Italy's experience with PIRs is much more recent, and therefore it is not possible to homogeneously compare the effects of tax incentives on the markets, but the numbers allow us to reflect on possible future prospects, in the hypothesis that the dynamics observed in the other markets can be repeated, with greater or less emphasis, even in Italy

The gap, with respect to the number of listed companies, on the main list and on the lists for SMEs (at the end of 2017, 339 companies in Milan against the 837 in Paris and the 1.902 in London) highlights in the medium term a possible ambitious target for Italy of at least 500 new 'freshmen'; assuming that the majority of these will be listed on AIM Italia (market that as of today have just 100 listed companies with a capitalization of € 6 billion), we can estimate an increase in market capitalization between € 35 billion and € 40 billion, which would bring the ratio of total capitalization to GDP above 40%, but still far from the current 91.5% of Paris and 139.4% of London. Just the arrival on the list of a group of large companies, with market capitalization higher than 1 billion, could make the 50% target possible, obviously in a scenario of stable prices. Possible candidates could be the giants of the large organized retailing, those of food (Esselunga) but also of transports, as the Ferrovie dello Stato. By analysing the performances of the listed prices compared to other markets, it is evident how, after the financial crisis, Italy has lost ground above all if compared to France. In order to hope that this evaluation gap will be filled in the future, let us think that it is necessary to launch a series of structural reforms to support productivity and investments in capital, together with a reduction in the tax burden.

Expanding the analysis outside the Euro Area we can find other similar instruments, such as: **Japan 2014, Canada 2009 and United States 1997**

3.2.3. Japan, 2014

The NISA, acronym of Nippon Individual Savings Account, were born in January 2014, modelled in the wake of the British ISAs plan working in the United Kingdom.

They are financial instruments designed to encourage the medium-long term savings of private individuals by conveying them on the stock market. The aim of the government was

to induce people to move their assets from savings into investments. In fact, in Japan, of the ¥1.5 quadrillion in personal financial assets, 55.2 percent is made up of cash and deposits.

Fiscal incentives make the investor, who opens a “NISA” account in a securities house or a bank, to be exempted from capital gain tax and withholding tax on dividend incomes arising from the investment in equities and/or investment trusts. Investors can buy listed stocks, exchange-traded funds, which are linked to stock market indexes, but also real estate investment trusts. Unlike the British program, cash, deposits, bonds and insurance or pension assets are excluded from the NISA compliant investment instruments.

Some other requirements must be respected by the investors in order to obtain those benefits:

- 1) Eligibility: eligibility to contribute is restricted to any individual aged 20 or above, who is a Japanese resident or non, but with a permanent establishment in Japan.
- 2) Holding period: tax-free investment period is limited to 5 years and for every year beginning at the end of Year 5, one-fifth of amount invested in the account must be withdrawn.
- 3) Annual maximum investment: from 2016, the annual contribution limit will be raised from JPY 1 million to JPY 1.2 million a year for five years.

Here, the evolutions that characterized the normative features:

- The NISA program legislation runs from 2018 to 2037 and investors can hold only one NISA account.
- From 2016, a new “Junior NISA” will be introduced with certain restrictions for investors below the age of twenty.

From 2014 to the end of 2017, the NISA collected about 78 billion euros. The number of NISA accounts at the end of June 2016 was 4.47 million, a 10% rise compared to December of the previous year. The rate of active NISA accounts was 52.2% at the end of June 2016, a rise from 45.1% at the end of December last year.

3.2.4. Canada, 2009

Tax-Free Savings Accounts (TFSA) were launched in Canada in 2009 and were designed for savers over 18 years old with active social insurance. Contributions paid into a TFSA are not tax-deductible while capital gains are generally tax-free.

Regarding the portfolio composition, no particular constraints can be found as a TFSA can hold lots of investments, including publicly traded shares on eligible exchanges, eligible shares of private corporations, certain debt obligations, instalment receipts, money denominated in any currency, trust interests including mutual funds and real estate investment trusts, annuity contracts, warrants, rights and options, registered investments, royalty units, partnership units, and depository receipts.

Requirements to be respected regard:

- The maximum annual contribution for each year, prior to 2013, was 5,000 Canadian dollars per year. From 2013, it was increased to 5,500 Canadian dollars per year (In 2015 was 10,000). Contribution limit was settled up to \$5,500 (annual contribution limit for 2016) plus any unused contribution room from previous years. If contribution exceeds the individual limit, there will be a penalty of 1% per month on the excess amount.

There are no constraints on the minimum holding period: money can be withdrawn from TFSA any times, there is no need to reach a certain age.

The collection from the launch exceeds 150 billion dollars.

Similar instruments are available also in South Korea (2016) and South Africa (2015). For South Africa, all proceeds, which include interest income, capital gains and dividends from these accounts, are tax free. Individuals are allowed to open two tax exempt savings accounts per year. These accounts can invest in equities, fixed income accounts or both. The annual contribution limit is about R30,000, up to a maximum of R500 000 per lifetime.

3.2.5. United States, 1997

In the US, since 1997, there are finally the Roth Individual Retirement Account (IRA) plans also called 401K, but they are quite different from our PIRs. In fact, these are real pension plans supplementary to social security: the savings paid by the worker, with these instruments, have the advantage of having deferred taxation; in practice the investor does not pay taxes until he decides to enjoy the fruits of the investment. Since it is assumed that in the old age the worker will earn less, the taxation will occur with a rate more favourable to him. Individual retirement accounts (IRAs) are of two types:

- 1) Traditional «deductible» IRA, allows your investment to grow tax-deferred, meaning you pay no taxes on earnings until they're withdrawn.

The distinctive features characterizing this kind of plan regard:

- Obligation to start withdrawing money by the year after the investor turn 70 years old.
- Typically, withdrawing money from a traditional IRA imply paying income tax, plus a 10% federal penalty tax until the investor reach 59 age.

- 2) Roth «non-deductible» IRA.

This was characterized by:

- 5 years' minimum holding period.
- you pay no taxes on withdrawals made after you reach 59 age

There are no constraints on portfolio composition: typically, plan contributions are invested in a portfolio of mutual funds, but can include stocks, bonds and other investment vehicles as permitted under the provisions of the governing plan document.

Constraints are just for the maximum annual investment:

- there is a limitation to a maximum pre-tax annual contribution of \$18,500 in 2018 (\$18,000 in the period between 2015 - 2017).

Modifications of 2017 provide the tax-free withdrawn at any time for the amounts invested.

According to a study done by the National Institute on Retirement Security, titled "The Continuing Retirement Savings Crisis", 55% of working Americans own a retirement account, in an employer-based 401(k) type plan or an IRA.

CONCLUSIONS:

In conclusion, we have mapped, into the Table below (**Table 10**) the instruments we have previously described according to the most distinguish features among them. ISAs, as TFSAs, are more flexible than PIRs and PEAs because they allow you to get out and get back into your investment without giving up the tax relief. This is also due to the fact that, ISAs if compared with France and Italian instruments, has not any kind of constraints related to where money has to be invested. Of course PIRs, being those with the most recent introduction, have, until now, just one variant.

Table 10: PIR - Countries MAP

	Italy	UK	France	Japan	Canada	US
	(PIR)	(ISA)	(PEA)	(NISA)	(TFSA)	(IRA)
Entered into force date	1/1/2017	1/4/1999	1/1/1992	1/1/2014	1/1/2009	1/1/1997
Tax exemption	Complete	Complete	Complete	Complete	Capital gain	Deferred
Investors type	Individuals, adults and not	Individuals, adults (Junior ISA for minors)	Individuals, not fiscally charged to other individuals	Individuals, over 20 years' old	Individuals, adults with active social insurance	Workers
Investment duration	At least 5 years	No constraints	At least 5 years	At least 5 years	No constraints	No constraints
Financial instruments issued by Italian or EU or EEA companies	At least 70%		At least 75%; allowed only shares			
Financial instruments issued from companies not included in the blue chips indexes	At least 21%	No constraints	No constraints for the PEA; constraint on SMEs (at least 75%) for PEA-PME	No constraints	No constraints	No constraints
Annual maximum investment	30.000 €	20.000 £	-	1.2 million JPY	5,500 \$	\$18,500
Total maximum investment	150.000 €	-	150.000 € (PEA) + 75.000 € (PEA-PME)	6 million JPY	-	-
Variants for particular categories of investors or investments	No	Yes	Yes	Yes	No	Yes

Source: Students' elaboration

4. PIR – The Offer side: investigations on the capital raised

Chapter 4 has the aim of studying the PIR instrument from point of view of the offer, looking at Italians' savings. In particular, considering the purpose of the legislator to nudge households towards long term investments, the focus is on answering to the question:

Q.

Were PIRs truly able to intercept Italians savings while offering to investors a secure and transparent investment solution, long-term oriented and appealing in terms of returns ?

This question is worth in a context in which the newbie fiscal scheme has been developed mainly as a mutual fund or insurance contract rather than a personal managed account or a securities account. Indeed, our concern is to verify whether intermediators that distributed PIR-compliant financial products operated in the real interest of Italian investors, without deteriorating margins with the introduction of additional fees.

To do so, the chapter is organized as follows.

In **paragraph 4.1** all the forms in which the PIR instrument has been distributed are presented. The focus is on mutual funds products and insurance companies' contracts.

Paragraph 4.2 is dedicated to the analysis of the link between returns and costs. The aim is to understand if PIR-compliant funds are profitable for investors or if, instead, financial intermediators kept all the fiscal benefits for them, by acting on costs.

Finally, **paragraph 4.3** provide an estimation of the total potential offer of capital in the future.

4.1. The main actors and the capital raised

According to the law, the PIR scheme can be shaped as a managed account, a securities account, a mutual fund or an insurance contract into which investors can put their savings.

However, our studies reveals that the newbie fiscal scheme was successful mainly in the form of mutual fund and insurance contracts; an explanation could be that in these two cases intermediators saw the possibility to shift the benefits of the instrument on their balances.

Indeed, the **asset management market** reacted immediately to the advent of the PIR with the launch of numerous 'PIR-compliant' funds. At H18 the total AUM was equal to €bn 18.7 (considering also 2017 figures). In some cases, it was the establishment of new products, in other cases, the 'reconversion' of those already existing. ETF products were successful too. Lyxor was the first to launch the 'ETF PIR', soon followed by other operators such as Amundi, iShares and Invesco.

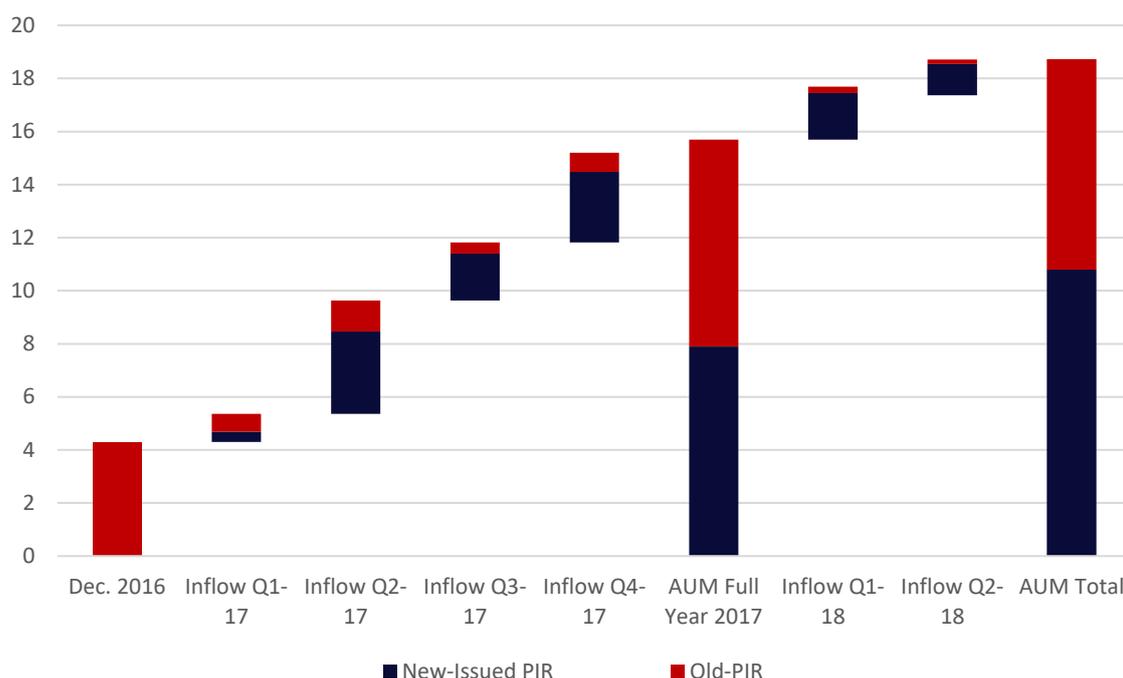
The insurance industry also reacted to the event, bringing numerous 'unit-linked' and multi-brand products to the market. At H18 the total premia raised by insurance companies was equal to €bn 3.32

Even though the law does not reserve the benefits of PIRs for collective savings products alone, our studies reveals that almost all of the investment were shaped as mutual funds; only few products enriched the alternative 'containers', as is the case for the **administered portfolios**. An example is the product from Fides, a fiduciary company from Ancona active in the management of PIR product in the form of administered portfolios.

Finally, some houses have been equipped to supply lines of individual patrimonial management that are eligible for PIR.

Given the considerable amount of money raised by mutual funds and insurance products our study will focus on these two PIR-compliant instruments.

Graph 24: PIR – Open end funds – Total Inflows and AUM (€bn)



Sources: Assogestioni data and students' elaboration

4.1.1.PIR in the asset management market – financial PIRs.

In order to monitor the PIR instruments within the asset management market, we created a Data Base called “PIR_DB_funds” in which, all the information about the newbie instrument is collected, and, in particular:

- a) the list of OICRs that decided to launch PIR-compliant funds;
- b) the names of the funds that are to be considered as PIR compliant;
- c) the inflows of capital corresponding to new capital raise by OICRs with either existing but “reconverted” PIR-compliant funds, or with newly issued PIR-compliant funds during the period of analysis;
- d) the Asset Under Management, or AUM, defined as the total amount of capital raised by OICRs with existing but “reconverted” PIR compliant funds or with newly issued PIR compliant funds in the period of analysis.

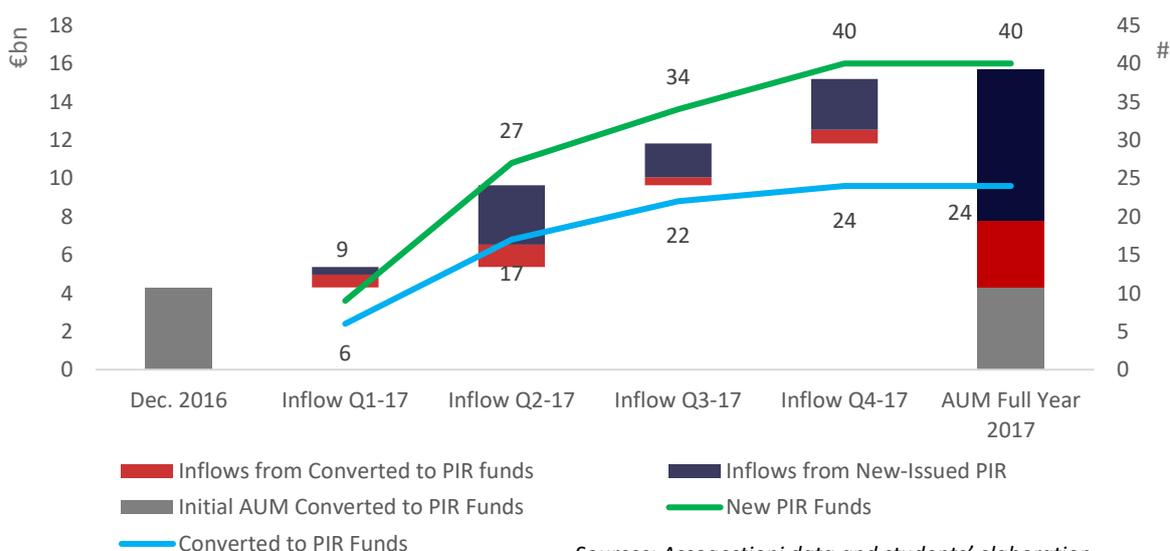
Data were collected considering information from Assogestioni; more precisely we used the “Quarterly Map of Assets Under Management” report (in Italian, Mappa Trimestrale

del Risparmio Gestito). “Old Funds” refers to funds that existed before the introduction of the PIR normative and that were changed in destination in order to be PIR-compliant.

2017 Fiscal Year statistics – Capital raised and asset under management (AUM)

According to the official data of Assogestioni, net inflows in 2017 amounted to € 10.9 bn raised from Italian families. Total AUM reached € 15.8 bn equally distributed between newly issued funds and old funds. In 2017, 64 products were available, of which 40 were launched after the introduction of the PIR normative, for a total value of ca. € 8 bn. The remaining part (24 funds and ca. € 7.8 bn of asset under management) is represented by already marketed products, previously specialized on buying Italian shares, that have been subsequently modified in terms of regulation to be eligible as PIR-compliant funds. For what concern the dynamic of inflows, in Q2 2017 we register an acceleration of the capital raised, as a result of the introduction of a huge number of products on the market (at the end of June, the total amount of products available was already equal to 48). Q3 saw a flection related to the inactivity of investors on the markets. Q4 2018, instead, boomed to € 3.4 bn , being + 50% on the previous quarter, (See Graph 25).

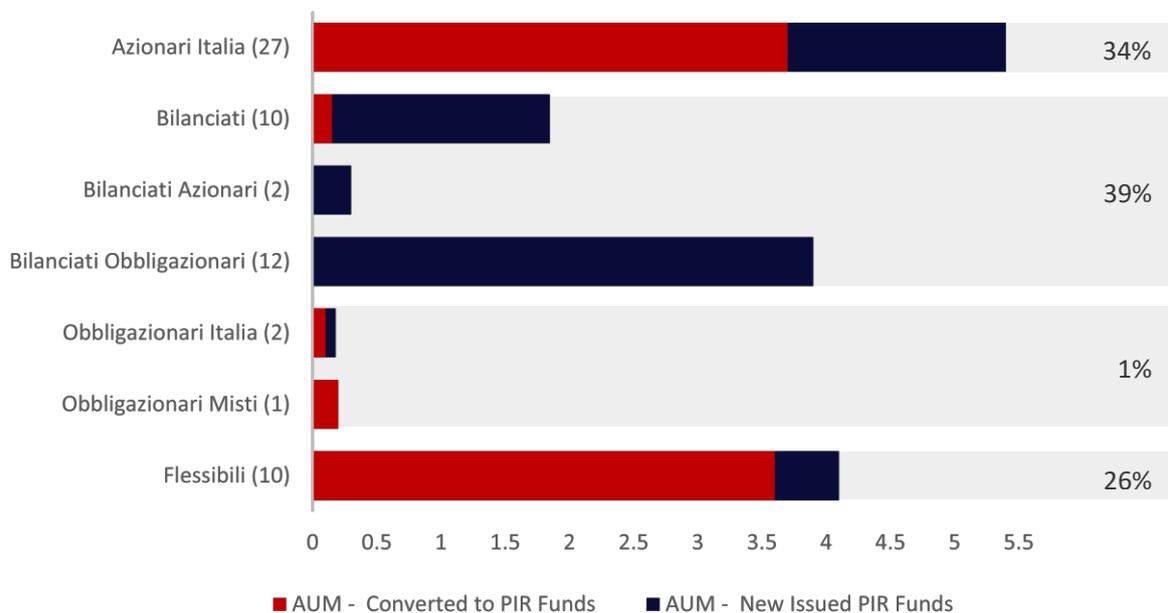
Graph 25: Open end funds – 2017 Inflows, AUM and numbers of funds



Looking at the product categories 34% of the asset, in terms of assets managed, is composed of equity funds specialized in the Italian market, while an even higher share, of 39%, is represented by balanced funds. Another 26% of the masses, then, merged into flexible funds ". Relative less success is for bond funds that account for 1%. **See Graph 26.**

Lastly, we observe that the newly issued funds were concentrated in balanced portfolios, while already existing funds that were later converted into PIR-compliant funds were mainly flexible fund types or focused on Italian shares.

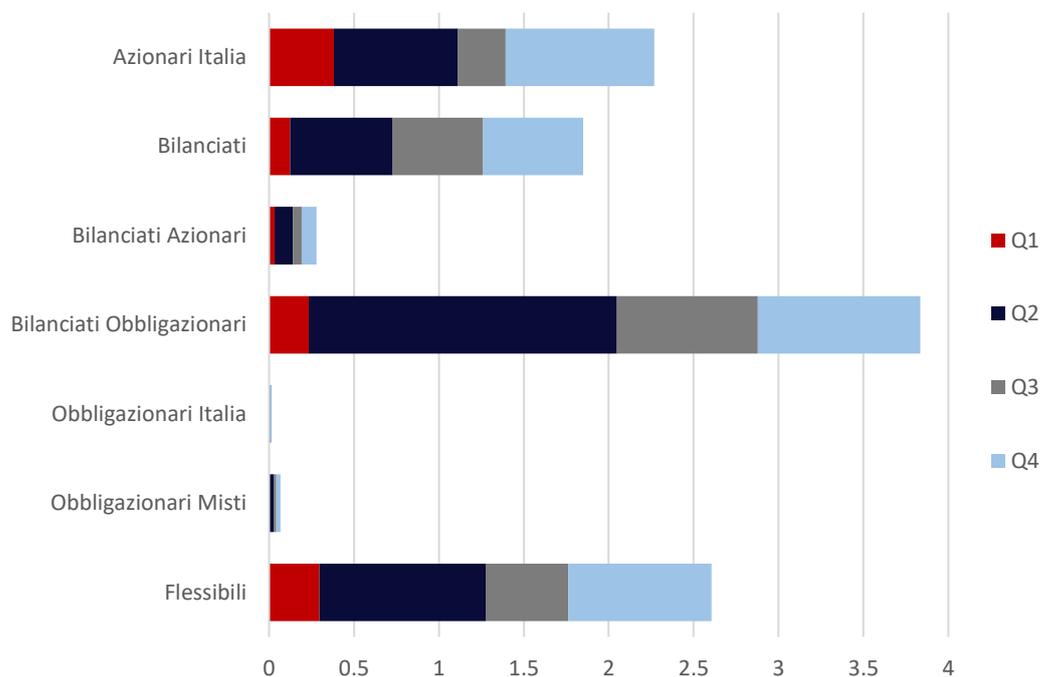
Graph 26: AUM by Fund Category (Dec. 2017 €bn)



Sources: Assogestioni data and students' elaboration

Graph 27 shows the inflows for every type of funds category in 2017. The higher inflows were registered by balanced bond funds, all newly issued funds, as highlighted in the previous paragraph. Again, we notice the lower success of bond funds, that registered almost €0,1 bn together; this can be explained by the low number of bond funds (a total of 3).

Graph 27: Total Inflows by Fund Category 2017 (€bn)



Sources: Assogestioni data and students' elaboration

Considering market shares, according to our Data Base, in 2017 the market leaders in terms of AUM were the Mediolanum Group (22.6%), Banca Intesa Group (17.4%) and Amundi Group-Pioneer (13.9%). Instead, looking at the capital raised (Total Inflows in 2017) the market leader is Banca Intesa Group (25.3%), followed by Banca Mediolanum Group (19.3%) and Amundi Group-Pioneer (19.1%), (see Table 11).

Table 11: Top 10 Asset Management groups by AUM and Inflows (2017)

Top 10 by AUM – 2017 figures		Top 10 by Inflows – 2017 figures	
S.G.R.	Market share	S.G.R.	Market share
Banca Mediolanum	22,6%	Banca Intesa	25,33%
Banca Intesa	17,4%	Banca Mediolanum	19,36%
Amundi Group - Pioneer	13,9%	Amundi Group - Pioneer	19,13%
Arca S.G.R.	10,8%	Anima S.G.R.	7,68%

Anima S.G.R.	5,9%	Arca S.G.R.	7,47%
Fidelity International	4,1%	Lyxor	4,72%
Lyxor	4,1%	Gruppo UBI	2,71%
AXA	2,1%	Gruppo BNP	2,47%
Schroders	2,0%	Azimut	2,33%
Gruppo UBI	1,9%	BCC - Iccrea	1,98%

Sources: Assogestioni data and students' elaboration

2018 Fiscal Year statistics – Capital raised and asset under management (AUM)

According to the official data of Assogestioni, in 1H 2018 net inflows amounted to € 3.34bn, showing a deceleration compared to 1H 2017, where the total amount was € 5.33 bn. In specific, two decelerations were registered: Q1 2018 vs Q4 2017 (€1.99 bn and €3.34 bn, respectively) and Q2 2018 vs Q1 2018 (€1.35 bn and €1.99 bn, respectively), (see **Table 12**). We believe PIRs have seen a further sequential slowdown because of market volatility that worried Italian investors. Total AUMs have reached €18.6bn.

Table 12: Q1-18 and Q2 -18 Inflows deceleration

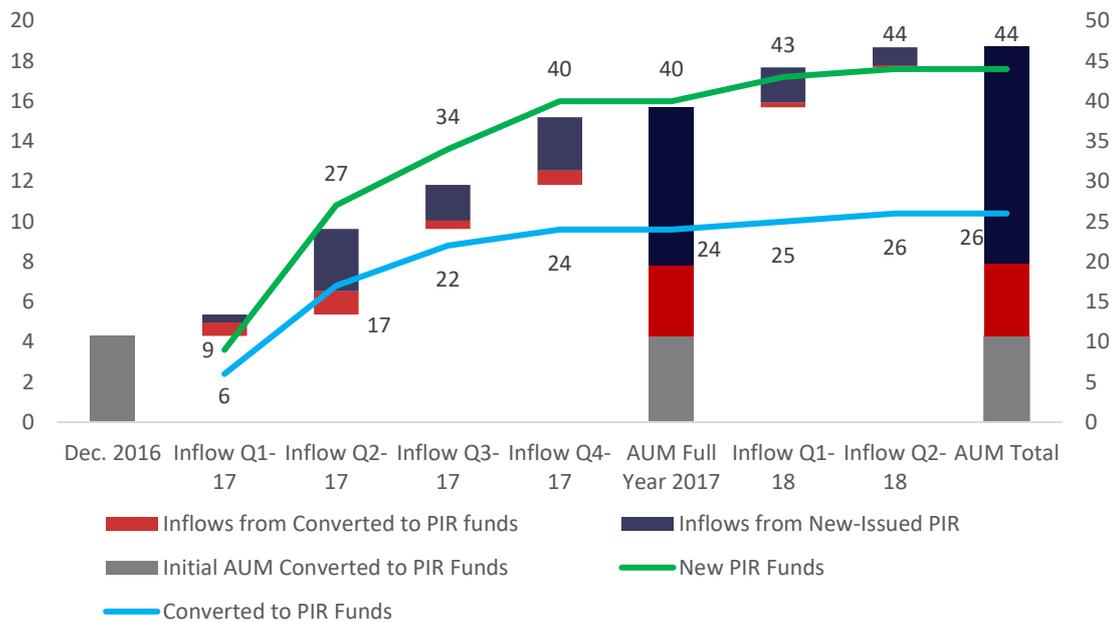
S.G.R.	Q1_18 - Q4_17	Q2_18 – Q1_18
Banca Mediolanum	-235,90	-43,70
Intesa Sanpaolo	-215,80	-142,60
Amundi Group (Pioneer)	-224,00	-240,20
Arca	-63,50	-95,60
Anima holding	-61,30	-40,30
Lyxor	-98,90	-46,50
Gruppo UBI	3,80	-19,60
Allianz	-36,80	-1,00
Gruppo BNP Paribas	-52,50	7,80
Axa IM	-23,70	38,80

Schroders	-54,00	54,30
BCC Risparmio e Previdnza - Iccrea	-37,10	-25,30
Gruppo Azimut	-117,50	33,20
Deutsche Bank	-124,30	-3,10
Gruppo Banca Intermobiliare - Symphonia	-5,10	-18,60
Zenit	13,60	-25,20
Gruppo Banca Sella	-13,20	-8,30
Credito Emiliano (SGR Euroimmobiliare)	-21,70	-6,70
Gruppo Cassa Centrale Banca - NEAM	2,40	-14,30
Ersel	-11,30	6,60
Banca Finnat Euroamerica	-1,10	-7,70
Gruppo Mediobanca (Banca Esperia)	-9,10	-17,60
AcomeA	-0,80	-1,70
Soprarno	1,60	-4,10
Credit Suisse	0,90	0,60
Nextam Partners	-0,70	0,20
PensPlan Invest	-1,70	-0,30
Kairos Partners	4,30	-4,60
Gruppo Generali	-8,20	-1,90
Consultinvest	-3,80	-1,70
Finanziaria Internazionale	0,50	-3,10
JPMorgan Asset Management	0,30	-1,70

Sources: Assogestioni data and students' elaboration

The total number of products available in 2018 amounted to 70, of which 44 have been launched after the introduction of the PIR normative, for a total value of ca. € 10.8 bn. The remaining part (26 funds and ca. € 7.9 bn of asset under management) is represented by products already existing on the market, that were previously specialized on buying Italian equities, and that have been consequently modified in terms of regulations to be eligible as PIR compliant funds. **(see Graph 28).**

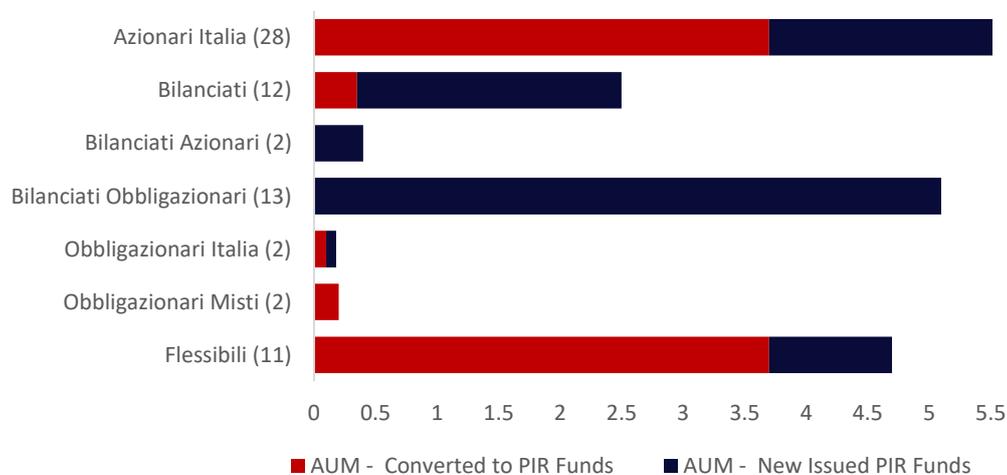
Graph 28: Total Inflows by Fund Category 2018 (€bn)



Sources: Assogestioni data and students' elaboration

In addition, we can notice that the increase of 3.34€bn in AUM in 1H 2018 has been mainly driven by new issued funds. In particular, balanced funds now represent the 42% of the total AUM (39% ,in 2017), fixed income is 2% (1%, in 2017), flexible fund shares reduced to 25% (26%, in 2017) and equity funds decreased too (30% vs 34% in 2017). We believe this shrink in the percentage of equities was addressable to rising market volatility. (see Graph 29)

Graph 29: AUM by Fund Category (YTD €bn)



Sources: Assogestioni data and students' elaboration

Considering market shares, according to our Data Base, the market leaders in terms of AUM in 2018 **remains Banca Mediolanum, with a 21% market share, ahead of Intesa Sanpaolo group (19%)** and Amundi Group-Pioneer (16.3%). The top players in terms of YTD inflows is Intesa Sanpaolo (26%), against Amundi (21%) and Banca Mediolanum (18%), (**see Table 13**).

Table 13: Top 10 Asset Management groups by AUM and Inflows (2018)

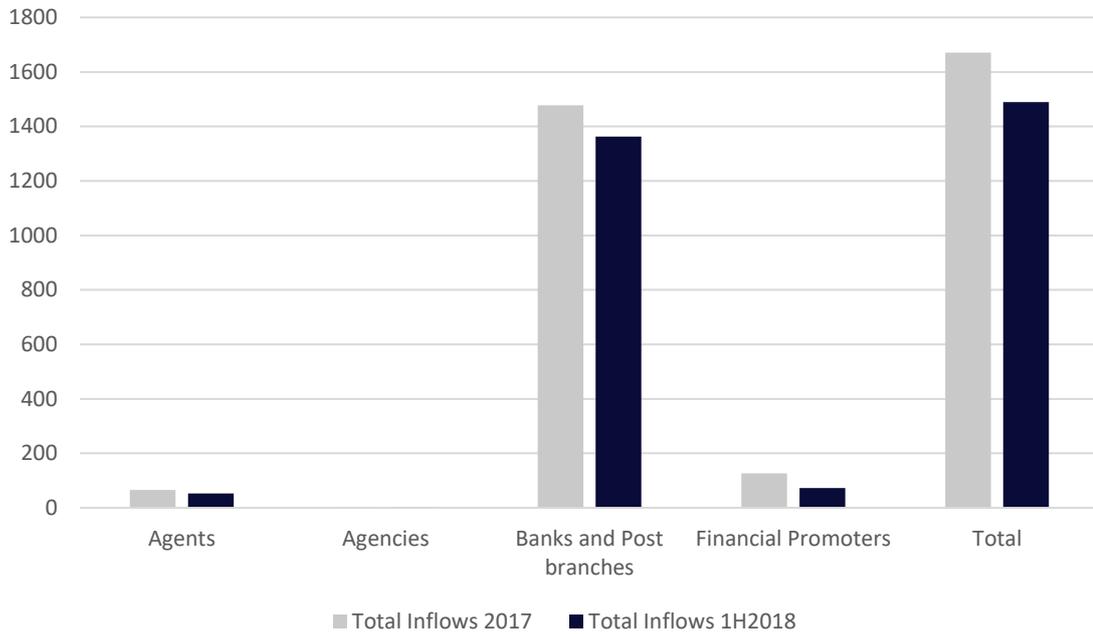
Top 10 by AUM – 2018 figures		Top 10 by Inflows – 2018 figures	
S.G.R.	Market share	S.G.R.	Market share
Banca Mediolanum	21,16%	Banca Intesa	26,00%
Banca Intesa	19,47%	Amundi Group	21,00%
Amundi Group	16,29%	Pioneer	
Pioneer		Banca Mediolanum	18,48%
Arca S.G.R.	10,45%	Anima S.G.R.	8,93%
Anima S.G.R.	7,21%	Arca S.G.R.	7,47%
Fidelity International	2,75%	Gruppo UBI	2,99%
Lyxor	2,27%	Gruppo BNP	2,48%
Gruppo UBI	2,25%	Lyxor	2,20%
Gruppo BNP	1,85%	BCC - Iccrea	2,09%
AXA	1,84%	Azimut	1,70%

Sources: Assogestioni data and students' elaboration

4.1.2.PIR in the insurance market – Insurance PIRs

PIR plans can also be shaped as insurance contracts: in 1H 2018 savings plans sold by insurance companies, (Ania data), received new premia for €1.47 bn (+212.3% compared to the same period in 2017) and almost equalling the balance sheet for 2017 (€ 1.7 billion). In particular, PIRs can be established through the stipulation of insurance contracts in classes I, III, V, as well as with multi-brand solutions. Insurance-PIRs offer concessions in case of succession, in addition, PIRs are not subject to inheritance tax (**see Paragraph 3**); Another benefit is that if the financial instruments were contained in a life insurance policy, the payment of the indemnity to the beneficiaries would in any case be exempt from tax. Moreover, if the PIR owner dies before the minimum holding period (five years), the heirs would not be taxed for the part matured up to the date of the opening of the succession. The benefits of the PIR are then combined with those of insurance products, such as the unbearable within the limits established by law and flexibility in the choice of beneficiaries. The downside is the higher charges by insurance contracts that generally present both direct and indirect fees. In 1H 2018, the offer of insurance PIR was limited to few products, due to some interpretative doubts on the application of the law. Instead, in 2H 2017, after the clarification of the Revenue Agency, the offer was extended and a huge supply of products reached the market (90 investment options). The weight of insurance companies is increasing during 2018. In 1H 2018, PIR compliant insurance contracts recorded new inflows of ca. € 1.5 billion, including both the multi-brand and the unit-linked PIR. At the end of June, the PIRs funds of the financial sector reached 18.6 billion of assets (see **Paragraph 4.1.2**), while the PIR-compliant insurance unit funds on the same date boasted a stock of 2.5 billion euros.

Graph 30: Total Inflows by issuer (€mn)



Sources: Ania data and students' elaboration

In addition, in the following table (**Table 14**) we provide a brief comparison between the main advantages and costs related to financial PIR instruments and insurance PIR instruments.

Table 14: Financial vs Insurance PIR - comparison

Advantages for all PIRs	
Fiscal	Tax exemption
Succession	Succession fees exemption
Specific advantages of the Insurance PIR	
Postpone stamp duty	On other types of investment stamp duty is paid annually while for policies it is due to expire or to redemption

Compensation	On insurance PIR there is full compensation between financial instruments: asset allocation changes are carried out in full tax continuity
Impunity and unequialiability	In compliance with the legal limits envisaged, the PIR policies are immovable and unequitable
Benefits in case of death	Variable benefits may be expected in the event of death of the insured person

Average Costs

Financial PIR	Annual fees from 2.79% to 0.35%, entry fees from 0% to 5.5% plus any performance fees if envisaged
Insurance PIR	For unit-linked average fees were 2.24%, annual management fees 1.90%, additional underlying management charges (2.30%), exit costs (first years 3.3%)

Sources: Sole 24h and students' elaboration

4.1.3. Administered Portfolios

Even though the law does not reserve the benefits of PIRs for collective savings products alone, our studies reveals that almost all of the investment were shaped as mutual funds; only few products enriched the alternative 'containers', as is the case for the **administered portfolios**. An example is the product from Fides, a fiduciary company from Ancona active in the management of PIR product in the form of administered portfolios.

The offer

Fides makes available to the investor, physical or institutional person, all the tools and skills necessary for the differentiated and specific administration of the individual financial instruments that qualify for the PIR legislation, according to a pure administered savings

tax regime. In this way the overall costs of the RIPS are significantly lower than the traditional alternatives to asset management.

The schema

The customer who intends to activate a PIR:

- opens a specific fiduciary mandate for the administration and fiscal management of the plan with Fides;
- identify personally or through financial adviser or bank the financial securities to be included in the RIP;
- - instructs Fides to open a bank account (current account and securities deposit) on its behalf, at an Italian or foreign intermediary.

The advantages

- cost reduction;
- freedom to choose investments;
- technical and fiscal assistance.

Table 15: PIR_DB - Inflows and AUM - 2017 Figures

SGR	Type	N	Q1	Q2	Q3	Q4	2017
Banca Mediolanum	P	2	296	897,1	401,7	518,1	2112,9
Intesa Sanpaolo		8	222,3	1223,7	560,2	757,9	2764,1
Eurizon	N	5	222,3	740	321,5	406,9	1690,7
Fideuram	N	3	0	428,4	225,5	351	1004,9
Amundi Group (Pioneer)		6	80,1	831,5	382,5	793	2087,1
Fondi nuova Istituz.	N	5	n.d	n.d	368,1	773,9	1142
Fondi prees.	P	1	n.d	n.d	14,4	19,1	33,5
Arca		5	79,7	349,6	149,5	236,1	814,9
Fondi nuova Istituz.	N	3	79,7	350,6	187,9	238,7	856,9
Fondi prees.	P	2	0	-1	-38,4	-2,6	-42
Anima holding		3	11,1	368,4	160,1	298,8	838,4
Fondi nuova Istituz.	N	2	11,1	335,6	124,8	218,1	689,6
Fondi prees.	P	1	0	32,8	35,3	80,7	148,8
Fidelity International	P	1	n.d	n.d	n.d.	n.d.	0
Lyxor		3	387,6	166,7	-61,2	21,7	514,8
Fondi nuova Istituz.	N	2	0	22,1	-2,8	19,8	39,1
Fondi prees.	P	1	387,6	144,6	-58,4	1,9	475,7
Gruppo UBI	N	3	0	112,3	112	71,2	295,5

Allianz		2	0	14,1	40,1	60	114,2
Fondi nuova Istituz.	N	1	n.d.	n.d.	20	15,8	35,8
Fondi prees.	P	1	n.d.	n.d.	20,1	44,1	64,2
Gruppo BNP Paribas	N	2	0	92,6	86,5	90,5	269,6
Axa IM	P	1			-13,8	7,4	-6,4
Schroders	P	2			20,8	0,9	21,7
BCC Risparmio e Previdnza - Iccrea	N	2	0	58,6	67,1	90,6	216,3
Gruppo Azimut	N	2			159,6	95	254,6
Deutsche Bank	N	1			0	157,8	157,8
Gruppo Banca Intermobiliare - Symphonia	P	2			0	1,9	1,9
Zenit	P	3	-3	33,4	18,2	5,2	53,8
Gruppo Banca Sella		2	2,8	33,5	19,5	38	93,8
Fondi nuova Istituz.	N	1	3,1	15,7	11,4	21,7	51,9
Fondi prees.	P	1	-0,3	17,8	8,1	16,2	41,8
Credito Emiliano (SGR Euroimmobiliare)	N	2	0	13,9	38,6	50,6	103,1
Gruppo Cassa Centrale Banca - NEAM	P	1			14,4	27,1	41,5
Ersel	P	1	-12,8	0,3	1	2,1	-9,4
Banca Finnat Euroamerica		2	0	13,4	-0,3	3,2	16,3
Fondi nuova Istituz.	N	1		6,8	1,7	2,6	11,1
Fondi prees.	P	1		6,6	-2,1	0,7	5,2
Gruppo Mediobanca (Bnaca Esperia)	N	1	0	39,2	13,7	14,4	67,3
AcomeA		2	0	5	1,7	5,4	12,1
Fondi nuova Istituz.	N	1	0	7	4	5,7	16,7
Fondi prees.	P	1	0	2	-2,3	-0,3	-0,6
Soprarno	P	1			-0,5	5,2	4,7
Credit Suisse	P	1			-3,6	-0,5	-4,1
Nextam Partners		3			0	2,6	2,6
Fondi nuova Istituz.	N	1			0	8	8
Fondi prees.	P	2			0	-5,4	-5,4
PensPlan Invest	N	1	0	13,4	4,5	2,9	20,8
Kairos Partners	N	1			14,4	1,3	15,7
Gruppo Generali	N	1			0	12,9	12,9
Consultinvest	N	1	0	1,3	4,6	6,2	12,1
Finanziaria Internazionale	N	1			5,3	1,7	7
JPMorgan Asset Management	N	1			0	3,9	3,9

Fondo di nuova istituzione [N]		40	396,30	3083,10	1768,4	1768,4	7909
Fondo Preesistente [P]		24	667,50	1133,60	414,9	414,9	2937,80

TOTAL Inflow			1063,80	4268,00	2196,60	2196,60	10911,5
TOTAL cumulative			1063,80	5331,80	7528,40	7528,40	10911,50
TOTAL AUM			1922,00	9045,00	12226,00	12226,00	15769,00

Sources: Assogestioni data and students' elaboration

Table 16: PIR_DB - Inflows and AUM - 2018 Figures

SGR	Type	N	Q1	Q2	Q3	Q4	2018
Banca Mediolanum	P	2	282,20	238,5	-	-	520,70
Intesa Sanpaolo		8	542,10	399,5	-	-	941,60
Eurizon	N	5	354,10	215,7	-	-	569,80
Fideuram	N	3	188,00	183,9	-	-	371,90
Amundi Group (Pioneer)		6	569,00	328,8	-	-	897,80
Fondi nuova Istituz.	N	5	546,90	312,9	-	-	859,80
Fondi prees.	P	1	22,10	15,9	-	-	38,00
Arca		5	172,60	77	-	-	249,60
Fondi nuova Istituz.	N	3	222,50	116,3	-	-	338,80
Fondi prees.	P	2	-49,90	-39,3	-	-	-89,20
Anima holding		3	237,50	197,2	-	-	434,70
Fondi nuova Istituz.	N	2	192,60	148,2	-	-	340,80
Fondi prees.	P	1	44,90	48,9	-	-	93,80
Fidelity International	P	1	n.d.	n.d.	-	-	0,00
Lyxor		3	-77,20	-123,7	-	-	-200,90
Fondi nuova Istituz.	N	2	-9,50	-7,1	-	-	-16,60
Fondi prees.	P	1	-67,70	-116,6	-	-	-184,30
Gruppo UBI	N	3	75,00	55,4	-	-	130,40
Allianz		2	23,20	22,2	-	-	45,40
Fondi nuova Istituz.	N	1	8,00	4	-	-	12,00
Fondi prees.	P	1	15,20	18,1	-	-	33,30
Gruppo BNP Paribas	N	2	38,00	45,8	-	-	83,80
Axa IM	P	1	-16,30	22,5	-	-	6,20
Schroders	P	2	-53,10	1,2	-	-	-51,90
BCC Risparmio e Previdnza - Iccrea	N	2	53,50	28,2	-	-	81,70
Gruppo Azimut	N	2	-22,50	10,7	-	-	-11,80
Deutsche Bank	N	1	33,50	30,4	-	-	63,90
Gruppo Banca Intermobiliare - Symphonia	P	2	-3,20	-21,8	-	-	-25,00
Zenit	P	3	18,80	-6,4	-	-	12,40
Gruppo Banca Sella		2	24,80	16,5	-	-	41,30
Fondi nuova Istituz.	N	1	15,20	10,3	-	-	25,50
Fondi prees.	P	1	9,60	6,2	-	-	15,80
Credito Emiliano (SGR Euroimmobiliare)	N	2	28,90	22,2	-	-	51,10
Gruppo Cassa Centrale Banca - NEAM	P	1	29,50	15,2	-	-	44,70
Ersel	P	1	-9,20	-2,6	-	-	-11,80
Banca Finnat Euroamerica		2	2,10	-5,6	-	-	-3,50
Fondi nuova Istituz.	N	1	1,10	0,6	-	-	1,70
Fondi prees.	P	1	1,00	-6,2	-	-	-5,20

Gruppo Mediobanca (Bnaca Esperia)	N	1	5,30	-12,3	-	-	-7,00
AcomeA		2	4,60	2,9	-	-	7,50
Fondi nuova Istituz.	N	1	3,30	2,2	-	-	5,50
Fondi prees.	P	1	1,20	0,7	-	-	1,90
Soparno	P	1	6,80	2,7	-	-	9,50
Credit Suisse	P	1	0,40	1	-	-	1,40
Nextam Partners		3	1,90	2,1	-	-	4,00
Fondi nuova Istituz.	N	1	0,20	1,2	-	-	1,40
Fondi prees.	P	2	1,70	0,9	-	-	2,60
PensPlan Invest	N	1	1,20	0,9	-	-	2,10
Kairos Partners	N	1	5,60	1	-	-	6,60
Gruppo Generali	N	1	4,70	2,8	-	-	7,50
Consultinvest	N	1	2,40	0,7	-	-	3,10
Finanziaria Internazionale	N	1	2,20	-0,9	-	-	1,30
JPMorgan Asset Management	N	1	4,20	2,5	-	-	6,70

Fondo di nuova istituzione [N]		44	1754,40	1175,60	0	0	2930,00
Fondo Preesistente [P]		26	234,00	178,90	0	0	412,90

TOTAL Inflow			1988,50	1354,60	0	0	10911,5
TOTAL cumulative			1988,50	3343,10	3343,10	3343,10	10911,50
TOTAL AUM			175360,0	18566,0	18566,0	18566,0	18566,0

Sources: Assogestioni data and students' elaboration

Table 17: PIR_DB – Insurances - Inflows and AUM - 2017 and 2018 Figures

Management Company	Fund name	Starting date	AUM	Type of Fund
Allianz	AZ Prospettiva Italia Ri	11/10/17	38560	Flessibile
Aviva Life	Aviva PIR Az. Ita	12/04/18	924	Az. Italia
	Aviva PIR Bil. Ita	06/04/18	6026	Bilanciato
AXA	Invest. Ita AXA Pir Az.	12/10/17	9154	Az. Italia
	invest. Ita AXA Pir Obb.	12/10/17	15526	Obbligazionario
Unicredit	Dinamico Pir	05/06/17	165697	Az. Europe
	Pridente Pir	05/06/17	426405	Bilanciato Obb.
Credit Agricole	CA Vita Pir Az.	17/10/17	15050	Flessibile
	CA Vita Pir Bilanciato	17/10/17	60749	Flessibile

Creditras Vita	201Ak Creditras dinamico PIR	07/06/17	324733	Az. Europa
	201Al Creditras prudente PIR	07/06/17	841853	Bilanciato Obb.
Eurovita assicurazioni	SuperPIR dinamico	12/06/17	237	Az. Italia
	SuperPIR bilanciato	12/06/17	2102	Bilanciato
	SuperPIR conservativo	12/06/17	2895	Obbligazionario
Italiana assicurazioni	Crescita Italiana PMI	29/05/17	2789	Az. Italia
Mediolanum	Flessibile equilibrato	31/08/17	81251	Flessibile
	Flessibile dinamico	31/08/17	88436	Flessibile
Popolare Vita	Vera Vita obiettivo Italia	28/05/18	1648	Bilanciato Obb.
Sara Vita	Sar PMI Italia	06/03/18	198	Flessibile
Società reale mutua	Linea PMI Italia free bilan.	07/05/18	49	Obbligazionario
	Linea PMI Italia free	29/05/17	5182	Az. Italia
Unipolsai	Unipolsai PIR	12/12/17	13777	Bilanciato Az.
Uniqua previdenza	Italia PIR linea bil. Obbl.	03/04/18	51	Obbligazionario
	Italia PIR linea Az.	15/09/17	304	Az. Italia
Vittoria assicurazioni	Fondo crescita Italia PIR	20707/2017	881	Az. Italia

Sources: Ania data and students' elaboration

4.2. PIR convenience: the recipe to kill a PIR

As we saw in the previous paragraph, the newbie fiscal scheme has developed mainly as a mutual fund or insurance contract rather than a personal managed account or a securities account. We called the first category financial PIRs (all the funds that are PIR compliant) and the second category Insurance PIRs (all the insurance plan that are linked to PIR compliant funds). Financial PIRs raised ca. €18.6 bn while Insurance PIRs collected premia for a value of ca. €3.21 bn. Both the two categories of investments charge costs that are in the form of: management fees, entrance fees, exit fees, performance fees, etc. Thus, it can arise the problem of convenience: costs could reduce the fiscal advantages, decreasing returns and making it less attractive rather than other products. In fact, it is important to underline that even if PIRs guarantee higher returns they embed also an intrinsic country risk linked to the concentration into Italian equities. In this context it is important to analyse the impact of costs over returns. Indeed, our aim is to verify if the intermediators that distributed PIR compliant financial products to Italian savers, with the promise of obtaining higher returns, operated in the real interest of investors, without deteriorating margins with the introduction of too onerous fees. The focus is on Financial PIRs as the intention of

the government were to support the real economy nudging investors towards more profitable investments. Everything in a win-win-win scenario, where benefits entail to:

- a) investors that can obtain higher return while sustaining the country economy;
- b) SMEs that can take advantages from the higher amount of capital available (theoretically 21% of the Total amount raised by PIRs);
- c) financial intermediaries that can increase their fee-related activities, lowering the dependence from the credit lending business.

With more than 70 PIR funds managing ca. 18 billion euros, our objective in this paragraph is to assess whether or not PIRs were truly able to intercept Italians savings while offering to investors a secure and transparent investment solution, long-term oriented and appealing in terms of returns.

4.2.1. The impact of costs over returns

In this paragraph we will try to understand which is the returns sensitivity to costs. The aim is to identify a critical level under which it is not convenient anymore to prefer a PIR fund rather than a Non PIR fund. Before starting the analysis, it is worthwhile to remember which tax rates are applied to Non PIR instruments:

- a) government bonds issued by Sovereign States (which fall within the White List) are taxed with a 12.5% rate;
- b) complementary pension schemes (such as pension funds) are subjected to a 20% tax rate;
- c) all the other Non PIR financial instruments (deposit accounts, mutual funds, ETFs, stocks, bonds) are taxed with a 26% rate.

For simplicity, we will not consider all the investment possibilities: managed account, securities account, mutual fund and insurance contract, but we will reduce the investments arena considering only financial instruments in the form of mutual funds. Thus, our investor will have the possibility to select only **PIR compliant** products with a 0% tax rate (t_c) or **Non PIR compliant** products, with a 26% tax rate offered by an OICR.

We will also assume that there is no country risk, and that gross returns are equal both for PIR compliant products and Non PIR compliant products.

Given the previous information, what is the commission threshold which makes a PIR-compliant instrument preferable to the other?

The Hypothesis:

- a) The initial Investment I_0 is assumed equal to 1;
- b) Gross return (r_g) is considered to be the same for PIR and Non PIR instruments;
- c) Assumption of no country risk on PIR instruments;
- d) All the cost bearing are related to the TER that is applied to I_0 ;
- e) The two instruments have the same asset allocation, 50% shares and 50% bonds.

The variables:

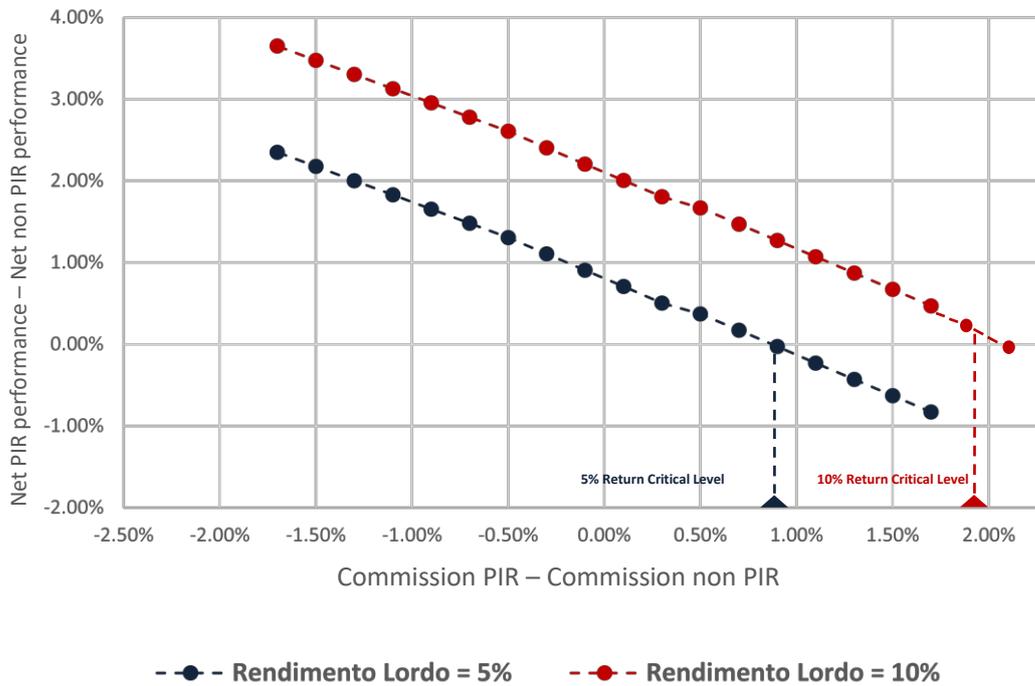
- a) The commissions (TER) of PIRs;
- b) The commissions of the alternative investments: Non PIR instrument;
- c) The gross performance of the two products.

The formulas:

- Net performance of the PIR product: $I_P = I_0 * (r_g - TER)$;
- Net performance of the Non PIR product: $I_{NP} = I_0 * (r_g - TER) * (1 - t_c)$.

The idea is to calculate the net performance of the two instruments for different level of costs, and see when the fiscal advantage for PIRs does not hold anymore, results are represented in **Graph 31**. On the x axis you find the difference between the commissions of the PIR product and the one applied to the alternative investment. Thus, if the number is negative (left hand of the axis) it means that the commissions applied to the PIR are lower than the one applied to the Non PIR. Vice versa, if the difference is higher (right hand of the axis) it means that the PIR is more expensive.

Graph 31: Impact of the cost difference on net performance, given the same gross return



Instead, on the vertical axis is represented the difference between the two net performances: if higher than zero the PIR is a better instrument, if lower it is worth to go for the alternative investment. The graph shows two lines. In the first one (blue line) data are plotted considering a 5% gross return on the investment. The red line instead, is referred to a 10% gross return. We can notice that the two lines are downward sloping and that there is a constant distance between the data plots, with the red line that is always on top. The intuition behind the distance between the two lines is that taxes are applied to the earnings, therefore the higher the earnings, the higher the savings related to the PIR instrument and thus the higher it's convenience in respect of a Non PIR instrument.

Instead, the fact that the two lines are downward sloping is explained by the difference between the commission applied to the PIR instrument and the one applied to the alternative investment: the higher the PIR commission, the higher the cost bearing on the returns and therefore the lower the savings obtained by the fiscal incentive.

Indeed, the graph shows how the convenience of the investment depends upon the difference level of commission and upon the gross return.

But under which conditions does the alternative investment become more convenient than the PIR investment?

To answer this question, we have to find out the point in which each line intercepts the x axis and see which is the correspondent difference in commissions. We will call this point critical level. Examples follow:

Example 1

Considering a 5% gross return (blue line), the critical level is reached with a ca. 0,9% difference in commissions. Thus, if PIR commissions are 2,5%, the alternative investments have to report commission that are at least equal to 1,5% to become convenient. In fact: $2,5\% - 1,5\%$ is equal to 1%, that is higher than the critical level and consequently it corresponds to a negative figure on the y axis. This means that the differences between the net performance of the PIR and the Non PIR investment is negative and therefore, the alternative investment is more convenient.

Example 2

Considering a 10% gross return, the advantage for the PIR increases as the critical level shifts to the right reaching a value of ca. 2%. This means that PIR commission can be 2% higher than the alternative investment and therefore with a 2,5% commission bearing on the gross returns (as stated in the previous example) the PIR becomes a very though rival to beat for a non PIR instrument.

A first conclusion coming from this analysis is that PIR compliant funds can be a very good instruments as they offer a clear tax advantage. However, as showed in the graph, commissions do matter, and it is important to consider which are the total cost bearing on the investment, because costs can easily burn out all the fiscal advantages and reduce returns. In particular, it is important to see the cost premium associated to PIR instrument. If it is too high its convenience in respect to a Non PIR instrument fade away.

Second, it is essential to remember that gross return could be different and usually lower than 5%, especially if we consider balanced portfolios with a higher percentage of Bonds. This could potentially affect our conclusions. As a consequence, we decided to perform a more accurate analysis considering the historical gross returns of 4 type of portfolio: equities, fixed income, balanced and flexibles; and see for each portfolio category which are the level of commissions that can potentially kill a PIR.

4.2.2. How to kill a PIR – the role of commissions

In this paragraph we want to discuss which are the commissions that can kill the tax advantages of the PIR. In particular, we will consider four categories of funds: equities, fixed income, balanced and flexibles and see for each portfolio category which are the level of commissions that kill a PIR. According to those results, we will provide a list of the best and worst PIR instruments available on the market. The intention is to give to investors an objective way to better analyse their investments.

It is important to remember that our considerations do not account for the country risk embedded in PIR compliant funds. We will refer to the investment in the PIR compliant fund as **PIR investment** while the Alternative Investment is called **Non - PIR**. Results follow.

The Hypothesis:

- a) The initial Investment I_0 is equal to €30.000 for both the Investments: PIR and Non - PIR;
- b) The holding period is 5 years, to gain tax benefits;
- c) The gross return is equal for the two investments (r_g) and is calculated for each category of fund as an average of the last 5-year data;
- d) The fund categories are: equities (eq), fixed income (fi), balanced (bl) and flexible (fl);
- e) We assume no country risk on PIR instruments;
- f) The costs that we consider are: the **ongoing charge** or **OC** that represent the percentage of the total periodic costs bearing on the investment (administrative costs, management cost, legal cost, etc.) and the **entrance fee** or **EF** that is payed once, when subscribing the investment;

- g) The two investments have the same asset allocation;
- h) Taxes on the PIR investment are equal to zero, while taxes for the non PIR investment have a tax rate t_r of 26%.

The Variables:

- a) The instrument category: fixed income, equity, flexible and balanced portfolios;
- b) The returns;
- c) The commissions;

The formulas:

- $V_0 = I_0 \cdot (1 - EF)$;
- $V_1 = V_0 \cdot (1 + r_g)$;
- $Periodic_cost_1 = OC \cdot Avg.(V_0; V_1)$;
- $Taxis_1 = (V_1 - V_0 - Periodic_cost_1) \cdot t_r$;
- $*V_1 = V_1 - Periodic_cost_1 - taxis_1$;
- $*V_n = V_n - Periodic_cost_n - taxis_n$;

The idea is to calculate the Net value of the investment at year five for both the PIR and the Non – PIR investments for each of the four portfolio categories, and see which are the commissions that kill the tax benefit. To kill the tax benefit the difference between the Net value of the PIR investment at year five and the Net value of the Non-PIR investment at year five must be lower than zero.

Delta performances at year five for a portfolio category = $D_{p,xx} = *V_{5,PIR} - *V_{5,Non-PIR}$. Thus, to guarantee the tax benefits $D_{p,xx} > 0$.

1. Balanced portfolios (bl)

PIR investment

- $r_g = 2.43\%$ (5 years Average on yearly gross returns of Italian Open-end balanced funds. Source: Morningstar);

- **OC= 1.45%** (Average ongoing charge in 2017 on **PIR** compliant balanced funds. Source Fida);
- **EF= 2.34%** (Average entrance fee in 2017 on **PIR** compliant balanced funds. Source Fida);
- $t_r = 0\%$

Non-PIR investment

- $r_g = 2.43\%$ (5 years Average on yearly gross returns of Italian Open-end balanced funds. Source: Morningstar);
- **OC= 1.91%** (Average ongoing charge in 2017 on **Non-PIR** compliant balanced funds. Source: Morningstar);
- **EF= 2.28%** (Average ongoing charge in 2017 on **Non-PIR** compliant funds. Source: Morningstar);
- $t_r = 26\%$

With an initial Investment of $I_0 = €30.000$ and a holding period of 5 years the Delta performances of the two investment is: $D_{p,bl} = € 840.19 > 0$. Thus on average there is evidence that PIR compliant balanced fund are better than Non-PIR ones.

But what happen if commission changes? We performed a sensitivity analysis considering the following costs range: a) OC from 0,00% to 6,00% b) EF from 0,00% to 6,00%.

Lower bound is set equal to 0,00% because it has no meaning to consider commissions lower than 0. The upper bound is set equal to 6% as we did not record commission fees higher than 6%.

Table 18: PIR vs Non-PIR investments, sensitivity analysis – Balanced funds (euros)

	PIR FUND CATEGORY																													
	Ongoing Charges %					Balanced					Flexible					Equity					All PIR avg.					Fixed Income				
	6,00%	5,00%	4,00%	3,50%	3,00%	2,90%	2,80%	2,70%	2,60%	2,50%	2,40%	2,30%	2,20%	2,10%	2,00%	1,90%	1,80%	1,70%	1,60%	1,50%	1,40%	1,30%	1,20%	1,10%	1,00%	0,50%	0,00%			
Entrance fees %	-6441	-5190	-3885	-3212	-2526	-2387	-2247	-2107	-1966	-1825	-1683	-1541	-1398	-1254	-1110	-965	-820	-674	-527	-380	-233	-84	65	214	364	1124	1898			
6,00%	-6193	-4928	-3610	-2930	-2236	-2096	-1955	-1813	-1671	-1528	-1385	-1241	-1096	-951	-805	-659	-512	-365	-216	-68	81	231	382	533	685	1452	2235			
5,00%	-5945	-4667	-3335	-2648	-1946	-1804	-1662	-1519	-1375	-1231	-1086	-940	-794	-648	-500	-353	-204	-55	94	245	396	547	699	852	1005	1781	2572			
4,00%	-5821	-4536	-3197	-2506	-1802	-1659	-1516	-1372	-1227	-1082	-937	-790	-643	-496	-348	-199	-50	100	250	401	553	705	858	1011	1165	1945	2740			
3,50%	-5697	-4405	-3059	-2365	-1657	-1513	-1369	-1225	-1079	-934	-787	-640	-493	-344	-196	-46	104	254	405	557	710	863	1016	1171	1325	2109	2909			
2,90%	-5672	-4379	-3032	-2337	-1628	-1484	-1340	-1195	-1050	-904	-757	-610	-462	-314	-165	-16	134	285	437	589	741	894	1048	1202	1358	2142	2942			
2,80%	-5647	-4353	-3004	-2309	-1599	-1455	-1311	-1166	-1020	-874	-727	-580	-432	-284	-135	15	165	316	468	620	773	926	1080	1234	1390	2175	2976			
2,70%	-5622	-4327	-2977	-2280	-1570	-1426	-1281	-1136	-991	-844	-698	-550	-402	-253	-104	46	196	347	499	651	804	957	1112	1266	1422	2208	3010			
2,60%	-5597	-4301	-2949	-2252	-1541	-1397	-1252	-1107	-961	-815	-668	-520	-372	-223	-74	76	227	378	530	682	835	989	1143	1298	1454	2241	3043			
2,50%	-5573	-4275	-2922	-2224	-1512	-1368	-1223	-1077	-932	-785	-638	-490	-342	-193	-43	107	258	409	561	714	867	1021	1175	1330	1486	2273	3077			
2,40%	-5548	-4249	-2894	-2196	-1483	-1338	-1194	-1048	-902	-755	-608	-460	-312	-162	-13	138	288	440	592	745	898	1052	1207	1362	1518	2306	3111			
2,30%	-5523	-4222	-2867	-2167	-1454	-1309	-1164	-1019	-872	-726	-578	-430	-281	-132	18	168	319	471	623	776	930	1084	1238	1393	1549	2339	3144			
2,20%	-5498	-4196	-2839	-2139	-1425	-1280	-1135	-989	-843	-696	-548	-400	-251	-102	48	199	350	502	654	807	961	1115	1270	1426	1582	2372	3178			
2,10%	-5473	-4170	-2812	-2111	-1396	-1251	-1106	-960	-813	-666	-518	-370	-221	-72	79	229	381	533	685	839	992	1146	1301	1458	1614	2405	3212			
2,00%	-5449	-4144	-2784	-2083	-1367	-1222	-1076	-930	-784	-636	-488	-340	-191	-41	109	260	412	564	716	870	1024	1178	1333	1490	1646	2438	3245			
1,90%	-5424	-4118	-2757	-2054	-1338	-1193	-1047	-901	-754	-607	-459	-310	-161	-11	140	291	442	595	748	901	1055	1210	1365	1521	1678	2471	3279			
1,80%	-5399	-4092	-2729	-2026	-1309	-1164	-1018	-872	-725	-577	-429	-280	-131	19	170	321	473	626	779	932	1087	1242	1397	1553	1710	2503	3313			
1,70%	-5374	-4066	-2701	-1998	-1280	-1135	-989	-842	-695	-547	-399	-250	-100	50	201	352	504	657	810	964	1118	1273	1429	1585	1742	2536	3346			
1,60%	-5349	-4039	-2674	-1970	-1251	-1106	-959	-813	-665	-518	-369	-220	-70	80	231	383	535	687	841	995	1149	1305	1461	1617	1774	2569	3380			
1,50%	-5324	-4013	-2646	-1942	-1222	-1076	-930	-783	-636	-488	-339	-190	-40	110	262	413	565	718	872	1026	1181	1336	1492	1649	1806	2602	3414			
1,40%	-5300	-3987	-2619	-1913	-1193	-1047	-901	-754	-606	-458	-309	-160	-10	141	292	444	596	749	903	1057	1212	1368	1524	1681	1838	2635	3447			
1,30%	-5275	-3961	-2591	-1885	-1164	-1018	-872	-724	-577	-428	-279	-130	20	171	322	474	627	780	934	1089	1244	1399	1556	1713	1870	2668	3481			
1,20%	-5250	-3935	-2564	-1857	-1135	-989	-842	-695	-547	-399	-250	-100	50	201	353	505	658	811	965	1120	1275	1431	1587	1745	1902	2701	3515			
1,10%	-5225	-3909	-2536	-1829	-1106	-960	-813	-666	-518	-369	-220	-70	81	232	383	536	689	842	996	1151	1306	1463	1619	1776	1934	2733	3548			
1,00%	-5200	-3883	-2509	-1800	-1077	-931	-784	-636	-488	-339	-190	-40	111	262	414	566	719	873	1027	1182	1338	1494	1651	1808	1966	2766	3582			
0,50%	-5076	-3752	-2371	-1659	-932	-785	-637	-489	-340	-191	-40	110	262	414	566	720	873	1028	1183	1339	1495	1652	1810	1968	2127	2931	3751			
0,00%	-4952	-3621	-2234	-1518	-787	-640	-491	-342	-192	-42	109	260	413	565	719	873	1027	1183	1338	1495	1652	1810	1968	2127	2287	3095	3919			

+ € 930

Table 18 shows that the PIR investment is preferable to the Non-PIR investment in the 47% of the cases. This means that it is more likely for the PIR investment to be not competitive. In particular, if returns are fixed an investor that already bought a PIR fund will have a buffer of 70 basis point before the commissions kill the tax advantages. In fact, if the OC raise to 2.1% the $D_{p,bl}$ will be equal to **€ - 98.28 < 0**.

2. Flexible portfolios (fl)

PIR investment

- $r_g = 1.54\%$ (5 years Average on yearly gross returns of Italian Open-end Flexible funds. Source: Morningstar);
- **OC= 1.7%** (Average ongoing charge in 2017 on **PIR** compliant balanced funds. Source Fida);
- **EF= 2.93%** (Average entrance fee in 2017 on **PIR** compliant balanced funds. Source Fida);
- $t_r = 0\%$

Non-PIR investment

- $r_g = 1.54\%$ (5 years Average on yearly gross returns of Italian Open-end Flexible funds. Source: Morningstar);
- **OC= 1.90%** (Average ongoing charge in 2017 on **Non-PIR** compliant flexible funds. Source: Morningstar);
- **EF= 1.96%** (Average ongoing charge in 2017 on **Non-PIR** compliant flexible funds. Source: Morningstar);
- $t_r = 26\%$

$D_{p,fl} = \mathbf{€ -136.23 < 0}$. Thus on average there is evidence that PIR compliant flexible funds are worse than Non-PIR one. But what happen if commission changes? We performed a sensitivity analysis considering the following costs range: a) OC from 0,00% to 6,00% b) EF from 0,00% to 6,00%.

Table 21 shows that the PIR investment is structurally less convenient than the Non-PIR investment: PIR wins just the 36% of the times. This means that it is very likely for the PIR investment to be not competitive.

3. Equity portfolios (eq)

PIR investment

- $r_g = 4.86\%$ (5 years Average on yearly gross returns of Italian Open-end equity funds. Source: Morningstar);
- $OC = 1.91\%$ (Average ongoing charge in 2017 on **PIR** compliant equity funds. Source Fida);
- $EF = 2.98\%$ (Average entrance fee in 2017 on **PIR** compliant equity funds. Source Fida);
- $t_r = 0\%$

Non-PIR investment

- $r_g = 4.86\%$ (5 years Average on yearly gross returns of Italian Open-end equity funds. Source: Morningstar);
- $OC = 1.83\%$ (Average ongoing charge in 2017 on **Non-PIR** compliant equity funds. Source: Morningstar);
- $EF = 2.67\%$ (Average ongoing charge in 2017 on **Non-PIR** compliant equity funds. Source: Morningstar);
- $t_r = 26\%$

$D_{p,eq} = \text{€ } 1019.88 > 0$. Thus on average there is evidence that PIR compliant equity funds are better than Non -PIR one. But what happen if commission changes? We performed a sensitivity analysis considering the following costs range: a) OC from 0,00% to 6,00% b) EF from 0,00% to 6,00%.

Table 22 shows that the PIR investment is structurally more convenient than the Non-PIR investment: PIR wins the 71% of the times. This means that it is very likely for the PIR investment to be very competitive. In particular, if returns are fixed an investor that already bought a PIR fund will have a buffer of 60 basis point before the commissions kill the tax advantages. In fact, if the OC raise to 2.5% the $D_{p,bl}$ will be equal to **€ - 124,0 < 0**.

4. Fixed Income portfolios (fi)

PIR investment

- $r_g = 1.99\%$ (5 years Average on yearly gross returns of Italian Open-end fixed income funds. Source: Morningstar);
- **OC= 1.50%** (Average ongoing charge in 2017 on **PIR** compliant fixed income funds. Source Fida);
- **EF= 2.25%** (Average entrance fee in 2017 on **PIR** compliant fixed income funds. Source Fida);
- $t_r = 0\%$

Non-PIR investment

- $r_g = 1.99\%$ (5 years Average on yearly gross returns of Italian Open-end fixed income funds. Source: Morningstar);
- **OC= 1.20%** (Average ongoing charge in 2017 on **Non-PIR** compliant equity funds. Source: Morningstar);
- **EF= 0.97%** (Average ongoing charge in 2017 on **Non-PIR** compliant equity funds. Source: Morningstar);
- $t_r = 26\%$

$D_{p,fi} = \mathbf{€ -550.28 < 0}$. Thus on average there is evidence that PIR compliant fixed income funds are worse than Non-PIR one. But again what happen if commission changes? We

performed a sensitivity analysis considering the following costs range: a) OC from 0,00% to 6,00% b) EF from 0,00% to 6,00%.

Table 23 shows that the PIR investment is structurally less convenient than the Non-PIR investment: PIR wins just the 16% of the times. This means that it is very likely for the PIR investment to be less competitive.

Further considerations

Table 19 is useful to have a summary of the calculations performed so far. In particular we added also a *Return test* to understand the impact of a change in returns on the investments. For the portfolios in which D_p was higher than zero we computed the level of gross return that kill the PIR advantage. For the portfolios in which D_p was lower than zero we computed the level of gross return that makes the PIR preferable. Notice that a 2.3% gross return kills the advantages of a PIR compliant equity fund. And given the recent performance of the markets we expect the most of the PIR compliant fund to show negative performances.

Table 19: PIR vs Non-PIR performances - summary

	Equity		Fixed Income		Flexible		Balanced	
	PIR	Non-PIR	PIR	Non-PIR	PIR	Non-PIR	PIR	Non-PIR
5 year return	4.86%		1.99%		1.54%		2,43%	
Ongoing Charge	1.91%	1.83%	1.50%	1.20%	1.7%	1.9%	1,45%	1,91%
Entrance fee	2.98%	2.67%	2.25%	0.97%	2.93%	1.96%	2,34%	2,28%
D_p	€ 1019.88		- € 550.28		-€ 126.33		€ 877.96	
Return test	2,3%		3.45%		2.00%		0.1%	
D_p	-€ 36.37		€ 10.65		€ 35.65		-€ 30.6	

Finally, in **Table 20** are represented the difference between the performances (on a five year period), of PIR compliant funds and the estimated performance of one Non – PIR compliant fund. The Non – PIR compliant fund is built with a 5-year gross return of 2.7% (average of the 5-year gross returns of the 4 Non – PIR portfolio categories calculated before) and the OC and the EF that are respectively 1.71% and 1.97% (calculated with the

same procedure of gross returns). Results follow. PIR fund are more convenient for the 56%. The best performer is Amundi Patrimonio Italia.

Table 20: PIR vs Non-PIR, delta performances

Fund Name	Type	Gross return	Ongoing C.	Entr. fee	Delta perf.
ACOMEA ITALIA P1	Equity	2,70%	2,01%	4,00%	-705,49
ALLIANZ AZIONI ITALIA ALL STAR	Equity	2,21%	1,85%	3,00%	-152,12
AXA WF - FRAMLINGTON ITALY	Equity	5,72%	1,83%	5,50%	-904,24
AMUNDI DIVIDENDO ITALIA	Equity	1,48%	1,94%	3,00%	-289,08
AMUNDI SVILUPPO ITALIA	Equity	-0,02%	1,90%	2,00%	83,68
ANIMA INIZIATIVA ITALIA	Equity	-0,28%	2,19%	5,00%	-1281,80
ANTHILIA SMALL CAP ITALIA	Equity	-1,20%	2,57%	3,00%	-1234,04
ARCA AZIONI ITALIA	Equity	2,74%	1,88%	4,00%	-510,09
ARCA ECONOMIA REALE EQUITY ITALIA	Equity	1,78%	2,14%	4,00%	-899,88
MEDIOBANCA MID & SMALL CAP ITALY	Equity	-2,17%	1,59%	3,00%	246,35
CS IF 11 c.to CS (LUX) ITALY EQUITY FUND	Balanced	5,02%	2,17%	5,00%	-1252,33
EUROMOBILIARE PIR ITALIA AZIONARIO	Equity	1,30%	2,01%	2,00%	-85,04
FONDERSEL P.M.I.	Equity	1,31%	1,84%	0,00%	801,81
FIDELITY FUNDS SICAV c.to ITALY	Equity	2,84%	1,93%	5,50%	-1052,59
INVESTIMENTI AZIONARI ITALIA	Equity	2,35%	1,91%	2,00%	68,31
SYMPHONIA AZIONARIO SMALL CAP ITALIA	Equity	-2,18%	2,07%	0,00%	441,83
EURIZON PIR ITALIA AZIONI	Equity	0,45%	1,87%	1,50%	286,04
NEXTAM PARTNERS ITALIAN SELECTION pir	Balanced		2,46%	3,00%	-1070,78
PIANO AZIONI ITALIA	Equity	0,90%	2,20%	3,00%	-681,98
SCHRODER ISF ITALIAN EQ.	Equity	2,46%	1,61%	5,00%	-417,50
ZENIT PIANETA ITALIA	Equity	-0,16%	1,80%	2,00%	237,71
ALLIANZ ITALIA 50 SPECIAL	Balanced	-0,32%	1,45%	3,00%	462,64
ARCA ECONOMIA REALE BILANCIATO ITALIA 55	Balanced	-0,43%	1,41%	2,00%	844,37
NEW MILLENNIUM S. PIR BIL. SISTEMA ITALIA	Balanced	-1,23%	1,24%	3,00%	840,12
NEF c.to RISPARMIO ITALIA PIR	Balanced		1,83%	0,00%	817,54
EURIZON PROGETTO ITALIA 40	Balanced	-0,42%	1,47%	1,50%	909,80
PIANO BILANCIATO ITALIA 50	Balanced	0,35%	1,80%	3,00%	-75,81
UBI PRAMERICA MITO 50	Balanced	-0,06%	1,63%	2,00%	500,99
JPM FUNDS MULTI-ASSET ITALY PIR F.	Balanced	0,53%	1,45%	5,00%	-175,50
EURIZON PROGETTO ITALIA 70	Flexible	0,24%	1,67%	1,50%	596,67
GENERATION DYNAMIC PIR	Flexible	0,25%	1,90%	3,00%	-228,27
AMUNDI VALORE ITALIA PIR	Balanced	-0,38%	1,61%	3,00%	215,55
AMUNDI RISPARMIO ITALIA	Balanced	-0,30%	1,25%	2,00%	1096,02
ANIMA CRESCITA ITALIA	Balanced	-0,68%	1,46%	4,00%	128,24
ARCA ECONOMIA REALE BILANCIATO ITALIA 30	Balanced	-0,91%	1,41%	2,00%	844,37
EUROMOBILIARE PIR ITALIA FLESSIBILE	Balanced	-0,30%	1,32%	2,00%	985,72
FININT ECONOMIA REALE ITALIA	Balanced	-0,76%	1,50%	3,00%	385,26
INVESTIMENTI BILANCIATI ITALIA	Balanced	0,23%	1,65%	2,00%	469,92
EURIZON PIR ITALIA 30	Balanced	-0,83%	1,47%	1,50%	909,80
EURIZON PROGETTO ITALIA 20	Balanced	-0,82%	1,27%	1,50%	1225,45
PIANO BILANCIATO ITALIA 30	Balanced	-0,46%	1,60%	3,00%	230,95
UBI PRAMERICA MITO 25	Balanced	-0,76%	1,33%	2,00%	969,99
NEXTAM PIR BILANCIATO	Balanced	-1,08%	1,80%	3,00%	-75,81
ACOMEA PATRIMONIO ESENTE	Flexible	0,26%	1,81%	4,00%	-404,45
ACOMEA PATRIMONIO ESENTE P2	Flexible	0,37%	0,95%	4,00%	-408,2
CONSULTINVEST RISPARMIO ITALIA	Flexible	-0,61%	2,79%	3,00%	-1558,40
GESTIELLE PRO ITALIA	Flexible		1,65%	3,00%	154,03
MEDIOLANUM FLESSIBILE FUTURO ITALIA***	Flexible	1,96%	1,81%	6,00%	-1031,18
MEDIOLANUM FLESSIBILE SVILUPPO ITALIA***	Flexible	-0,90%	1,57%	4,20%	-103,41
INVESTIPER ITALIA PIR 25	Flexible	-0,24%	1,40%	1,50%	1019,99
SOPRARNO RITORNO ASSOLUTO CLASSE P	Flexible	-0,14%	1,62%	2,00%	516,53
Deutsche A.M. Multi A.Pir	Flexible	-0,94%	1,40%	4,00%	220,31
NEW MILLENNIUM S. AUGUSTUM ITALIAN DIV. B.	Fixed. Income	1,48%	1,70%	3,00%	77,26
ZENIT OBBLIGAZIONARIO	Fixed. Income	-0,50%	1,30%	1,50%	1177,94

Table 21: PIR vs Non-PIR investments, sensitivity analysis – Flexible funds (euros)

	PIR FUND CATEGORY																			Equity			All PIR avg.			Fixed Income		
	Ongoing Charges %					Balanced					Flexible					Equity				All PIR avg.			Fixed Income					
	6.00%	5.00%	4.00%	3.50%	3.00%	2.90%	2.80%	2.70%	2.60%	2.50%	2.40%	2.30%	2.20%	2.10%	2.00%	1.90%	1.80%	1.70%	1.60%	1.50%	1.40%	1.30%	1.20%	1.10%	1.00%	0.50%	0.00%	
6.00%	-6612	-5406	-4147	-3499	-2836	-2702	-2567	-2432	-2296	-2160	-2023	-1886	-1748	-1609	-1470	-1330	-1190	-1049	-908	-766	-623	-480	-337	-192	47	685	1433	
5.00%	-6374	-5155	-3883	-3227	-2558	-2422	-2286	-2149	-2012	-1874	-1736	-1597	-1458	-1318	-1177	-1036	-894	-752	-609	-466	-321	-177	-32	114	261	1001	1757	
4.00%	-6136	-4904	-3619	-2956	-2279	-2142	-2005	-1867	-1728	-1589	-1449	-1309	-1168	-1026	-884	-742	-598	-454	-310	-165	-20	127	273	421	569	1317	2081	
3.50%	-6017	-4778	-3486	-2820	-2140	-2002	-1864	-1725	-1586	-1446	-1306	-1164	-1023	-881	-738	-594	-450	-306	-161	-15	131	278	426	574	723	1475	2243	
3.00%	-5898	-4652	-3354	-2684	-2001	-1863	-1724	-1584	-1444	-1303	-1162	-1020	-878	-735	-591	-447	-302	-157	-11	82	138	282	430	578	727	877	1633	2405
2.90%	-5874	-4627	-3328	-2657	-1973	-1835	-1695	-1556	-1416	-1275	-1133	-991	-849	-706	-562	-418	-273	-127	19	83	138	282	430	578	727	877	1633	2405
2.80%	-5850	-4602	-3301	-2630	-1945	-1807	-1667	-1527	-1387	-1246	-1105	-962	-820	-677	-533	-388	-243	-98	49	104	159	303	451	599	747	895	1641	2417
2.70%	-5826	-4577	-3275	-2603	-1917	-1779	-1639	-1499	-1359	-1218	-1076	-934	-791	-647	-503	-359	-214	-68	79	134	189	333	481	629	777	925	1647	2423
2.60%	-5802	-4552	-3248	-2576	-1890	-1751	-1611	-1471	-1330	-1189	-1047	-905	-762	-618	-474	-329	-184	-38	108	163	218	362	506	650	794	938	1653	2429
2.50%	-5779	-4527	-3222	-2549	-1862	-1723	-1583	-1443	-1302	-1160	-1018	-876	-733	-589	-445	-300	-154	-8	138	193	248	392	536	680	824	968	1659	2435
2.40%	-5755	-4502	-3195	-2522	-1834	-1695	-1555	-1414	-1273	-1132	-990	-847	-704	-560	-415	-270	-125	21	168	223	278	422	566	710	854	998	1665	2441
2.30%	-5731	-4477	-3169	-2495	-1806	-1667	-1527	-1386	-1245	-1103	-961	-818	-675	-531	-386	-241	-95	51	198	253	308	452	596	740	884	1028	1671	2447
2.20%	-5707	-4452	-3143	-2467	-1778	-1639	-1499	-1358	-1217	-1075	-932	-789	-646	-502	-357	-212	-66	81	228	283	338	482	626	770	914	1058	1677	2453
2.10%	-5683	-4427	-3116	-2440	-1750	-1611	-1470	-1330	-1188	-1046	-904	-761	-617	-472	-328	-182	-36	111	258	313	368	512	656	800	944	1088	1683	2459
2.00%	-5659	-4401	-3090	-2413	-1723	-1583	-1442	-1301	-1160	-1018	-875	-732	-588	-443	-298	-153	-6	140	288	343	398	542	686	830	974	1118	1689	2465
1.90%	-5636	-4376	-3063	-2386	-1695	-1555	-1414	-1273	-1131	-989	-846	-703	-559	-414	-269	-123	23	170	318	373	428	572	716	860	1004	1148	1695	2471
1.80%	-5612	-4351	-3037	-2359	-1667	-1527	-1386	-1245	-1103	-961	-818	-674	-530	-385	-240	-94	53	200	348	396	444	588	732	876	1020	1164	1701	2477
1.70%	-5588	-4326	-3010	-2332	-1639	-1499	-1358	-1217	-1075	-932	-789	-645	-501	-356	-210	-64	82	230	377	425	473	617	761	905	1049	1193	1707	2483
1.60%	-5564	-4301	-2984	-2305	-1611	-1471	-1330	-1188	-1046	-903	-760	-616	-472	-327	-181	-35	112	259	307	355	403	547	691	835	979	1123	1713	2489
1.50%	-5540	-4276	-2957	-2277	-1583	-1443	-1302	-1160	-1018	-875	-731	-587	-443	-298	-152	-5	142	289	337	385	433	577	721	865	1009	1153	1719	2495
1.40%	-5517	-4251	-2931	-2250	-1555	-1415	-1274	-1132	-989	-846	-703	-559	-414	-268	-123	24	171	319	367	415	463	607	751	895	1039	1183	1725	2501
1.30%	-5493	-4226	-2905	-2223	-1528	-1387	-1245	-1103	-961	-818	-674	-530	-385	-239	-93	53	201	349	397	445	493	637	781	925	1069	1213	1731	2507
1.20%	-5469	-4201	-2878	-2196	-1500	-1359	-1217	-1075	-932	-789	-645	-501	-356	-210	-64	83	230	378	426	474	522	666	810	954	1098	1242	1737	2513
1.10%	-5445	-4175	-2852	-2169	-1472	-1331	-1189	-1047	-904	-761	-617	-472	-327	-181	-35	112	260	308	356	404	452	596	740	884	1028	1172	1743	2519
1.00%	-5421	-4150	-2825	-2142	-1444	-1303	-1161	-1019	-876	-732	-588	-443	-298	-152	-5	142	289	337	385	433	481	625	769	913	1057	1201	1749	2525
0.50%	-5302	-4025	-2693	-2006	-1305	-1163	-1020	-877	-734	-589	-444	-299	-153	-6	141	289	337	385	433	481	529	673	817	961	1105	1249	1755	2531
0.00%	-5183	-3899	-2561	-1870	-1166	-1023	-880	-736	-591	-446	-301	-155	-8	140	288	336	384	432	480	528	576	720	864	1008	1152	1296	1761	2537

€ 127

Entrance fees %

Table 22: PIR vs Non-PIR investments, sensitivity analysis – equity funds (euros)

	Ongoing Charges %																			PIR FUND CATEGORY					Equity					All PIR avg.					Fixed Income								
																				Balanced					Flexible					Equity					All PIR avg.					Fixed Income			
	6,00%	5,00%	4,00%	3,50%	3,00%	2,90%	2,80%	2,70%	2,60%	2,50%	2,40%	2,30%	2,20%	2,10%	2,00%	1,90%	1,80%	1,70%	1,60%	1,50%	1,40%	1,30%	1,20%	1,10%	1,00%	0,50%	0,00%	1,30%	1,20%	1,10%	1,00%	0,50%	0,00%	1,30%	1,20%	1,10%	1,00%	0,50%	0,00%				
Entrance fees %	6,00%	5,00%	4,00%	3,50%	3,00%	2,90%	2,80%	2,70%	2,60%	2,50%	2,40%	2,30%	2,20%	2,10%	2,00%	1,90%	1,80%	1,70%	1,60%	1,50%	1,40%	1,30%	1,20%	1,10%	1,00%	0,50%	0,00%	1,30%	1,20%	1,10%	1,00%	0,50%	0,00%	1,30%	1,20%	1,10%	1,00%	0,50%	0,00%				
6,00%	-6131	-4731	-3272	-2520	-1753	-1597	-1442	-1285	-1128	-970	-811	-652	-492	-332	-171	9	153	316	480	644	809	974	1141	1308	1475	2323	3188	974	1141	1308	1475	2323	3188	974	1141	1308	1475	2323	3188				
5,00%	-5850	-4435	-2961	-2201	-1425	-1268	-1110	-952	-793	-634	-474	-313	-151	11	174	337	501	666	831	997	1164	1331	1499	1668	1837	2694	3568	1331	1499	1668	1837	2694	3568	1331	1499	1668	1837	2694	3568				
4,00%	-5569	-4139	-2649	-1881	-1097	-939	-779	-619	-459	-298	-136	27	190	354	518	683	849	1016	1183	1350	1519	1688	1858	2028	2199	3065	3948	1688	1858	2028	2199	3065	3948	1688	1858	2028	2199	3065	3948				
3,50%	-5428	-3991	-2493	-1721	-933	-774	-614	-453	-292	-130	33	197	361	525	691	857	1023	1190	1357	1524	1691	1858	2026	2194	2362	3228	4101	1858	2026	2194	2362	3228	4101	1858	2026	2194	2362	3228	4101				
3,00%	-5288	-3843	-2337	-1561	-769	-609	-448	-287	-124	38	202	366	531	697	863	1030	1197	1364	1531	1698	1865	2032	2200	2368	2536	3402	4275	2032	2200	2368	2536	3402	4275	2032	2200	2368	2536	3402	4275				
2,90%	-5260	-3813	-2306	-1529	-737	-576	-415	-253	-91	72	236	400	565	731	897	1064	1232	1400	1568	1735	1902	2070	2238	2406	2574	3440	4313	2070	2238	2406	2574	3440	4313	2070	2238	2406	2574	3440	4313				
2,80%	-5231	-3784	-2275	-1497	-704	-543	-382	-220	-58	106	270	434	599	765	932	1099	1267	1435	1603	1770	1938	2106	2274	2442	2610	3476	4349	2106	2274	2442	2610	3476	4349	2106	2274	2442	2610	3476	4349				
2,70%	-5203	-3754	-2244	-1465	-671	-510	-349	-187	-24	139	303	468	633	800	966	1134	1302	1470	1638	1806	1974	2142	2310	2478	2646	3512	4385	2142	2310	2478	2646	3512	4385	2142	2310	2478	2646	3512	4385				
2,60%	-5175	-3724	-2213	-1434	-638	-477	-316	-154	9	173	337	502	668	834	1001	1168	1336	1504	1672	1840	2008	2178	2346	2514	2682	3548	4421	2178	2346	2514	2682	3548	4421	2178	2346	2514	2682	3548	4421				
2,50%	-5147	-3695	-2182	-1402	-606	-444	-283	-120	43	207	371	536	702	868	1035	1203	1371	1539	1707	1875	2043	2214	2382	2550	2718	3584	4457	2214	2382	2550	2718	3584	4457	2214	2382	2550	2718	3584	4457				
2,40%	-5119	-3665	-2150	-1370	-573	-412	-250	-87	76	240	405	570	736	902	1070	1237	1406	1574	1742	1910	2078	2250	2418	2586	2754	3620	4493	2250	2418	2586	2754	3620	4493	2250	2418	2586	2754	3620	4493				
2,30%	-5091	-3636	-2119	-1338	-540	-379	-216	-54	110	274	439	604	770	937	1104	1272	1441	1610	1780	1951	2122	2286	2454	2622	2790	3656	4529	2286	2454	2622	2790	3656	4529	2286	2454	2622	2790	3656	4529				
2,20%	-5063	-3606	-2088	-1306	-507	-346	-183	-20	143	307	472	638	804	971	1139	1307	1476	1645	1815	1986	2158	2326	2494	2662	2830	3696	4569	2326	2494	2662	2830	3696	4569	2326	2494	2662	2830	3696	4569				
2,10%	-5035	-3576	-2057	-1274	-474	-313	-150	13	177	341	506	672	838	1005	1173	1341	1510	1680	1851	2022	2193	2366	2534	2702	2870	3736	4609	2366	2534	2702	2870	3736	4609	2366	2534	2702	2870	3736	4609				
2,00%	-5006	-3547	-2026	-1242	-442	-280	-117	46	210	375	540	706	872	1040	1207	1376	1545	1715	1886	2057	2229	2402	2570	2738	2906	3772	4645	2402	2570	2738	2906	3772	4645	2402	2570	2738	2906	3772	4645				
1,90%	-4978	-3517	-1995	-1210	-409	-247	-84	79	243	408	574	740	906	1074	1242	1411	1580	1750	1921	2092	2264	2437	2605	2773	2941	3807	4680	2437	2605	2773	2941	3807	4680	2437	2605	2773	2941	3807	4680				
1,80%	-4950	-3488	-1963	-1178	-376	-214	-51	113	277	442	607	774	941	1108	1276	1445	1615	1785	1956	2128	2300	2473	2641	2809	2977	3843	4716	2473	2641	2809	2977	3843	4716	2473	2641	2809	2977	3843	4716				
1,70%	-4922	-3458	-1932	-1146	-343	-181	-18	146	310	475	641	808	975	1142	1311	1480	1650	1820	1991	2163	2335	2509	2677	2845	3013	3879	4752	2509	2677	2845	3013	3879	4752	2509	2677	2845	3013	3879	4752				
1,60%	-4894	-3428	-1901	-1114	-311	-148	15	179	344	509	675	842	1009	1177	1345	1515	1684	1855	2026	2198	2371	2544	2712	2880	3048	3914	4787	2544	2712	2880	3048	3914	4787	2544	2712	2880	3048	3914	4787				
1,50%	-4866	-3399	-1870	-1082	-278	-115	48	212	377	543	709	875	1043	1211	1380	1549	1719	1890	2062	2234	2406	2580	2748	2916	3084	3950	4823	2580	2748	2916	3084	3950	4823	2580	2748	2916	3084	3950	4823				
1,40%	-4838	-3369	-1839	-1050	-245	-82	82	246	411	576	743	909	1077	1245	1414	1584	1754	1925	2097	2269	2442	2616	2784	2952	3120	3986	4859	2616	2784	2952	3120	3986	4859	2616	2784	2952	3120	3986	4859				
1,30%	-4810	-3339	-1808	-1018	-212	-49	115	279	444	610	776	943	1111	1280	1449	1618	1789	1960	2132	2304	2477	2651	2819	2987	3155	4021	4894	2651	2819	2987	3155	4021	4894	2651	2819	2987	3155	4021	4894				
1,20%	-4782	-3310	-1776	-986	-179	-16	148	312	478	644	810	977	1145	1314	1483	1653	1824	1995	2167	2340	2513	2687	2855	3023	3191	4057	4930	2687	2855	3023	3191	4057	4930	2687	2855	3023	3191	4057	4930				
1,10%	-4753	-3280	-1745	-954	-147	17	181	346	511	677	844	1011	1179	1348	1518	1688	1858	2030	2202	2375	2548	2723	2891	3059	3227	4093	4966	2723	2891	3059	3227	4093	4966	2723	2891	3059	3227	4093	4966				
1,00%	-4725	-3251	-1714	-922	-114	50	214	379	544	711	878	1045	1213	1382	1552	1722	1893	2065	2237	2410	2584	2758	2926	3094	3262	4128	5001	2758	2926	3094	3262	4128	5001	2758	2926	3094	3262	4128	5001				
0,50%	-4585	-3103	-1558	-762	50	214	379	545	712	879	1047	1215	1384	1554	1724	1895	2067	2240	2413	2587	2762	2937	3105	3273	3441	4307	5180	2937	3105	3273	3441	4307	5180	2937	3105	3273	3441	4307	5180				
0,00%	-4444	-2955	-1403	-603	214	379	545	712	879	1047	1215	1385	1555	1725	1897	2069	2241	2415	2589	2764	2939	3115	3283	3451	3619	4485	5358	3115	3283	3451	3619	4485	5358	3115	3283	3451	3619	4485	5358				

€1.030

Table 23: PIR vs Non-PIR investment, sensitivity analysis - Fixed income fund (euro)

	PIR FUND CATEGORY																			All PIR avg.								
	Ongoing Charges %					Balanced					Flexible					Equity				Fixed Income								
Entrance fees %	6.00%	5.00%	4.00%	3.50%	3.00%	2.90%	2.80%	2.70%	2.60%	2.50%	2.40%	2.30%	2.20%	2.10%	2.00%	1.90%	1.80%	1.70%	1.60%	1.50%	1.40%	1.30%	1.20%	1.10%	1.00%	0.50%	0.00%	
6.00%	-7668	-6437	-5153	-4490	-3815	-3678	-3540	-3402	-3264	-3125	-2985	-2845	-2704	-2563	-2421	-2278	-2135	-1991	-1847	-1702	-1557	-1411	-1264	-1117	-969	-222	541	
5.00%	-7425	-6180	-4882	-4213	-3530	-3391	-3253	-3113	-2973	-2833	-2691	-2550	-2407	-2265	-2121	-1977	-1832	-1687	-1541	-1395	-1248	-1101	-952	-804	-654	101	872	
4.00%	-7181	-5923	-4612	-3935	-3245	-3105	-2965	-2824	-2683	-2541	-2398	-2255	-2111	-1967	-1822	-1676	-1530	-1383	-1236	-1088	-939	-790	-641	-490	-339	424	1203	
3.50%	-7059	-5795	-4476	-3797	-3103	-2962	-2821	-2680	-2537	-2395	-2251	-2107	-1963	-1817	-1672	-1525	-1379	-1231	-1083	-934	-785	-635	-485	-334	-182	586	1369	
3.00%	-6937	-5666	-4341	-3658	-2960	-2819	-2677	-2535	-2392	-2248	-2104	-1960	-1814	-1668	-1522	-1375	-1227	-1079	-930	-781	-631	-480	-329	-177	24	747	1534	
2.90%	-6913	-5641	-4314	-3630	-2932	-2791	-2649	-2506	-2363	-2219	-2075	-1930	-1785	-1639	-1492	-1345	-1197	-1049	-900	-750	-600	-449	-297	-145	7	780	1568	
2.80%	-6888	-5615	-4287	-3602	-2903	-2762	-2620	-2477	-2334	-2190	-2046	-1901	-1755	-1609	-1462	-1315	-1167	-1018	-869	-719	-569	-418	-266	-114	39	812	1601	
2.70%	-6864	-5589	-4260	-3575	-2875	-2733	-2591	-2448	-2305	-2161	-2016	-1871	-1725	-1579	-1432	-1285	-1136	-988	-838	-689	-538	-387	-235	-83	70	844	1634	
2.60%	-6840	-5563	-4233	-3547	-2846	-2705	-2562	-2419	-2276	-2132	-1987	-1842	-1696	-1549	-1402	-1254	-1106	-957	-808	-658	-507	-356	-204	-51	102	877	1667	
2.50%	-6815	-5538	-4206	-3519	-2818	-2676	-2534	-2390	-2247	-2102	-1958	-1812	-1666	-1519	-1372	-1224	-1076	-927	-777	-627	-476	-325	-173	-20	133	909	1700	
2.40%	-6791	-5512	-4179	-3491	-2790	-2647	-2505	-2361	-2218	-2073	-1928	-1783	-1636	-1490	-1342	-1194	-1046	-897	-747	-596	-445	-294	-142	11	165	941	1733	
2.30%	-6767	-5486	-4152	-3464	-2761	-2619	-2476	-2333	-2189	-2044	-1899	-1753	-1607	-1460	-1312	-1164	-1015	-866	-716	-566	-414	-263	-110	43	196	973	1766	
2.20%	-6742	-5461	-4125	-3436	-2733	-2590	-2447	-2304	-2160	-2015	-1870	-1724	-1577	-1430	-1282	-1134	-985	-836	-686	-535	-384	-231	21	228	1006	1799		
2.10%	-6718	-5435	-4098	-3408	-2704	-2562	-2418	-2275	-2130	-1986	-1840	-1694	-1547	-1400	-1252	-1104	-955	-805	-655	-504	-353	-201	259	259	1038	1832		
2.00%	-6693	-5409	-4071	-3380	-2676	-2533	-2390	-2246	-2101	-1956	-1811	-1665	-1518	-1370	-1222	-1074	-925	-775	-624	-473	-322	-170	291	291	1070	1866		
1.90%	-6669	-5384	-4044	-3353	-2647	-2504	-2361	-2217	-2072	-1927	-1781	-1635	-1488	-1341	-1192	-1044	-894	-744	-594	-443	-291	-139	322	322	1103	1899		
1.80%	-6645	-5358	-4017	-3325	-2619	-2476	-2332	-2188	-2043	-1898	-1752	-1606	-1459	-1311	-1163	-1014	-864	-714	-563	-412	-260	-108	354	354	1135	1932		
1.70%	-6620	-5332	-3990	-3297	-2590	-2447	-2303	-2159	-2014	-1869	-1723	-1576	-1429	-1281	-1133	-984	-834	-684	-533	-381	-229	-70	385	385	1167	1965		
1.60%	-6596	-5307	-3962	-3269	-2562	-2418	-2275	-2130	-1985	-1840	-1693	-1547	-1399	-1251	-1103	-953	-804	-653	-502	-351	-198	-47	417	417	1199	1998		
1.50%	-6572	-5281	-3935	-3242	-2533	-2390	-2246	-2101	-1956	-1810	-1664	-1517	-1370	-1221	-1073	-923	-773	-623	-472	-320	-168	15	448	448	1232	2031		
1.40%	-6547	-5255	-3908	-3214	-2505	-2361	-2217	-2072	-1927	-1781	-1635	-1488	-1340	-1192	-1043	-893	-743	-592	-441	-289	-137	17	480	480	1264	2064		
1.30%	-6523	-5230	-3881	-3186	-2476	-2333	-2188	-2043	-1898	-1752	-1605	-1458	-1310	-1162	-1013	-863	-713	-562	-411	-258	-106	48	511	511	1296	2097		
1.20%	-6498	-5204	-3854	-3158	-2448	-2304	-2160	-2015	-1869	-1723	-1576	-1429	-1281	-1132	-983	-833	-683	-532	-380	-228	-75	79	233	233	387	543	1329	2130
1.10%	-6474	-5178	-3827	-3131	-2419	-2275	-2131	-1986	-1840	-1694	-1547	-1399	-1251	-1102	-953	-803	-652	-501	-349	-197	-44	110	264	264	419	574	1361	2164
1.00%	-6450	-5153	-3800	-3103	-2391	-2247	-2102	-1957	-1811	-1664	-1517	-1370	-1221	-1072	-923	-773	-622	-471	-319	-166	-13	141	295	295	450	606	1393	2197
0.50%	-6328	-5024	-3665	-2964	-2249	-2104	-1958	-1812	-1666	-1518	-1370	-1222	-1073	-923	-773	-622	-471	-319	-166	-13	141	296	296	451	607	763	1555	2362
0.00%	-6206	-4896	-3530	-2825	-2106	-1961	-1814	-1668	-1520	-1372	-1224	-1075	-925	-774	-623	-472	-319	-167	-13	141	296	296	451	607	763	921	1716	2528



4.3. PIR inflows and AUM Estimates

In this paragraph we are interested in estimating the potential supply of capital from Italian households. Two methodologies are carried out: **a)** Analytical computation, considering Italians specific characteristics both on the financial PIR market (2017 data) and on demographic features; **b)** Multiple analysis, considering historical data of ISAs (UK), PEAs (France) and TFSAAs (Canada). Calculation follows.

4.3.1. Analytical analysis

According to our analytical studies:

- 1) the range of total potential supply of capital (in terms of AUM) varies between ca. €150 billion to €199 billion;
- 2) the level of AUM at year 5 after the introduction of the PIR normative, range between ca. €70 billion to €90 billions of AUM.

The hypothesis for the estimation:

- a) According to the Revenue Agency any individual cannot subscribe more than one PIR at the same time;
- b) Any investor will not subscribe more than one PIR in its lifetime;
- c) According to the Revenue Agency under-18 cannot subscribe a PIR fund;
- d) Average retired people (above 65 years old) will not subscribe a PIR due to:
 - a. Lower saving propensity
 - b. Average retirement income (yearly data) equal to € 17.580
- e) According to Anima-Gfk Eurisko Observatory, 19% of Italians households is interested to invest capital in a PIR-compliant fund;
- f) The average PIR investment in 2017 is € 13.670 (Source: Assogestioni) and we suppose it will remain constant in the next years;
- g) We suppose an average withdrawal rate of ca. 5% of the AUM (Source: Strategic Insight Simfund MF/ICI Trends).

1) The idea was to get an estimation of the total number of PIR compliant funds products that could be potentially subscribed by Italian households, and then under above mentioned conditions calculate the total potential level of AUM.

- Maximum number of PIR to be subscribed = Total Italian residents (including foreigners) * (1- Under_18% - Retired %);
- Effective maximum number of PIR to be subscribed = Maximum number of PIR to be subscribed * (1- Residents interested to invest in a PIR %);
- 2017 PIR subscribed = 2017 PIRs Inflows / 2017 Avg. PIR investment;
- Effective number of PIR to be subscribed (estimate) = Effective maximum number of PIR to be subscribed - 2017 PIR subscribed;
- Maximum future PIR AUM (estimate) = Effective number of PIR to be subscribed (estimate) * 2017 Avg. PIR investment * 5 + 2017 PIR subscribed * 2017 Avg. PIR investment * 4 + 2017 AUM;
- Effective future PIR AUM (estimate) = Maximum future PIR inflows (estimate) net of yearly withdrawal.

Table 24: Supply of capital estimation

Total Italian residents (including foreigners)	65 million people
<i>Under_18 %</i>	15.7%
<i>Retired %</i>	0.24%
Maximum number of PIR subscribable	39.4 million PIRs
<i>Residents interested to invest in a PIR %</i>	19%
Effective maximum number of PIR subscribable	7.5 million PIRs
<i>2017 PIRs Inflows</i>	€10.9 billion
<i>2017 Avg. PIR investment</i>	€13.600
<i>2017 PIR subscribed</i>	802.316 PIRs

Effective number of PIR subscribable (estimate)	6.6 million PIRs
Maximum future PIR inflows (estimate)	€498.5 billion
Withdrawal %	5%
Effective future PIR inflows (estimate)	€404.6 billion

Sources: students' analysis

These results are based onto two strong hypotheses. The first one is about the average PIR investment that we suppose constant over years (€13.600), both for new PIR subscribers and for continuous investments. The second, is about the number of new PIR subscribed that we suppose constant over years (802.316 PIR contract per year).

However, there are factors that can cause further sequential slow down on PIR inflows and thus our assumptions are not solid. As consequence, we decide to implement a sensitivity analysis in which we discuss variations on both the average PIR investment and the number of newly issued PIR. The withdrawal percentage and all the other assumption did not change.

Table 25: PIR inflows estimation - sensitivity analysis (€ bn)

β coefficient – new PIR subscriptions

		1	0,8	0,6
α coefficient - Average investment	1	404.6	324.2	243.8
	0,8	326.8	262.1	197.2
	0,6	249.1	199.8	150

Sources: students' analysis

The average investment and the number of new PIR subscribed change according to two discount factors: 0.8 and 0.6.

We decided to choose as lower bound the worst case scenario. Both alfa coefficient and beta coefficient equal to 0.6. In that situation we would see a reduction in households' interest in subscribing new PIRs as well as a reduction in the average PIR investment.

The upper bound is the average between the two estimation obtained respectively with alfa =0.8 and beta=0.6 and alfa= 0.6 and beta=0.8. In fact, despite rising market volatility can discourage some investors, there are several factors which should sustain inflows in 2018 and beyond: firstly, some sales networks have only recently started selling PIR products; secondly, a number of year- one subscribers have adopted Capital Accumulation Plans ("Piano Accumulo Capitali"), therefore there is good visibility on their propensity to continue investing over time (according to Mediolanum, 40% of inflows are related to this type of plan). In addition, recent comments by Italian deputy prime minister Di Maio suggest the government may adopt some measures to ease the investment into PIR by institutional investors, in order to support the financing of SMEs via the equity market.

2) To estimate the level of AUM in 2023 we estimated:

- Future inflows from new issued PIRs;
- Future inflows from continuous investment in the same PIRs;
- Outflows (5% on the AUM yearly);

$AUM_t = (AUM_{t-1} + Inflow_{new,t} + Inflow_{old,t}) * 0.95$ where: $Inflow_{new,t}$ is equal to the 2017 Avg. PIR investment (€13.600) times the number of new PIR subscribed (802.316 per year) and $Inflow_{old,t}$ is equal to the 2017 Avg. PIR investment (€13.600) times the number of PIR issues at time t.

The result was € 179.2 billions. Again That result was based onto the two strong hypotheses: Avg. PIR investment (€13.600) and number of new PIR subscribed (802.316 per year) fixed over time.

Following the same reasoning of point 1 we computed a sensitivity analysis. Our estimates of the level of AUM at year 5 after the introduction of the PIR normative, range between ca. €70 billion to €90 billions of AUM.

Table 26: PIR inflows estimation - sensitivity analysis (€ bn)

		<i>β coefficient – new PIR subscriptions</i>		
		1	0,8	0,6
<i>α coefficient - Average investment</i>	1	179.2	144.3	109.1
	0,8	147.7	118.9	90.1
	0,6	116.2	93.7	71.2

Sources: students' analysis

4.3.2. Multiple analysis

In order to further strength our analysis we cross-checked the results with a multiple valuation.

We considered data from the Plan d'Épargne en Action for SMEs (PEA-PMEs) introduced in France in 2014, the Tax-Free Savings Accounts (TFSA) launched in Canada in 2009 and finally the Individual Savings Accounts (ISA) UK, 1999, (**see paragraph 3.2**).

The idea was to calculate a multiple for each country and take the average as a proxy for the multiple to apply at the Italian case. The multiple is defined as the ratio between The sum of inflows from year 1 to year 5 over the inflow at year five.

M_Canada = 7.8x – Data set period 2009 to 2013;

M_United Kingdom = 5.1x – Data set period 1999 to 2004;

M_France= 9x – Data set period 2014 to 2018.

M_Italy = 7.3x

Total AUM at year 5 = 2017_inflows * M_Italy + 2017 AUM (from reconverted PIR) = € 83.7 billion that between the upper and lower bound of our estimates at point one.

We can conclude that, in our view, and under determinate constrains the Potential value of the PIR market in terms of AUM in 2021 can be equal to €83.7 billion.

5. PIR – The Demand side: investigations on the deployment of capital

In **chapter 4**, we analysed the PIR instrument from the standpoint of the Italian households, embodying the capital offer; in **Chapter 5**, we shift on the demand side, looking at the Italian SMEs, that are one of the main targets of the legislator while structuring this tool. In particular, the focus is on answering the following questions:

Q.

Were PIRs truly able to deploy the capital collected from Italian savers into SMEs, reducing their dependence on the banking system and increasing their propensity to access capital markets, thus increasing their competitiveness? Were truly able to support, at the same time, the development of financial markets in Italy?

To do so the chapter is organized as follows.

Paragraph 5.1 is dedicated to the analysis of data showing where the capital collected has been invested, and in which proportion. The scope is to assess whether PIRs were effective in conveying new resources to SMEs, especially on the primary market.

In **Paragraph 5.2** the impact that this new flows of capital had is analysed. For the primary market, we employ as drivers the number of IPOs, capital increases (SPO) and the dynamics of alternative financing solutions; For the secondary market, instead, we consider effects on volumes, liquidity (bid-ask spread) and returns.

Finally, **paragraph 5.3** provides an estimation of the total potential demand for capital in Italy, considering non listed companies, with potentials for future business expansions.

5.1. The investment Map – capital flows

According to the law, a PIR investor must respect several constraints to be eligible for tax exemption benefits (see chapter 3). Focusing on the investments constraints, the more relevant for this analysis is:

At least 30% of the 70% bound (thus 21%) must be invested in securities which are not listed on the FTSE MIB index or on other comparable European indexes.

This is essential to guarantee that the inflows are distributed to SMEs characterized by a higher necessity of differentiate their source of capital, especially not listed companies.

In this first paragraph, we want to verify the previous issue illustrating where the capital raised by PIR compliant funds has been invested.

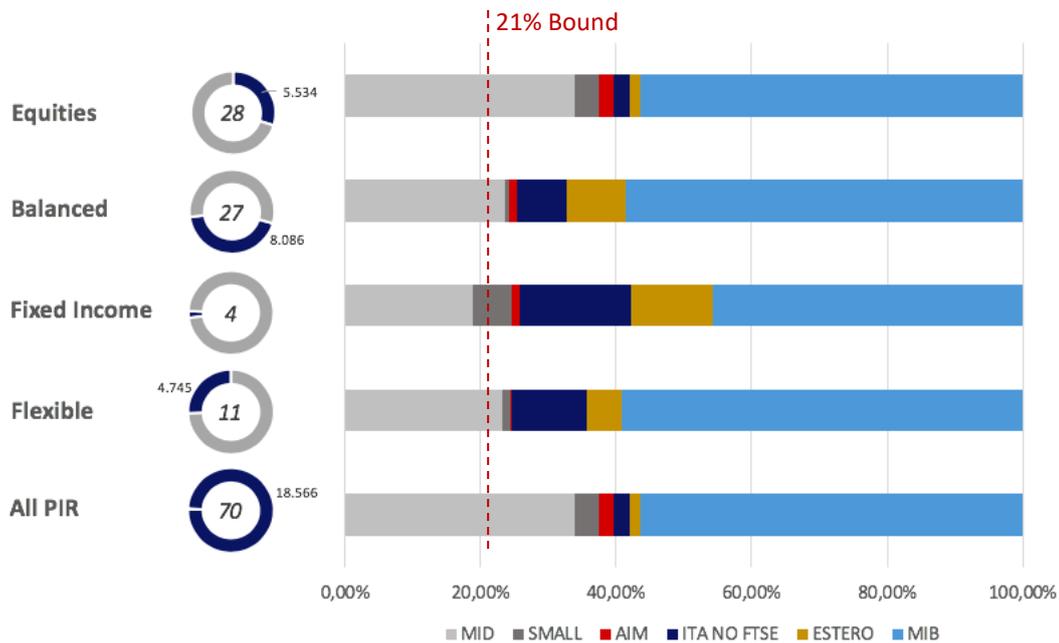
5.1.1. The composition of portfolios – aggregate data

In order to monitor the flows of capital from the asset management market to the stock market we created a Data Base called “PIR_DB_Flows” in which we collected all the information about the newbie instrument, and in particular:

- a) The flows of capital from PIR compliant funds intercepted by each of the following market segments: small cap, mid cap, Aim, Mib, Ita_no_FTSE;
 - b) The flows of capital from PIR compliant funds intercepted by the companies belonging to the following market segment: small cap, mid cap, Aim, Mib, Ita_no_FTSE;
- Data were collected considering information from Morningstar.
 - We considered funds with an AUM higher than € 10 million);
 - We considered funds from the following categories: equity, balanced, fixed income and flexible;

Graph 32 illustrates aggregate data about the composition of the portfolio investments for each PIR compliant category.

Graph 32: Portfolio composition by fund category (YTD)



Sources: Assogestioni, Morningstar and student elaborations

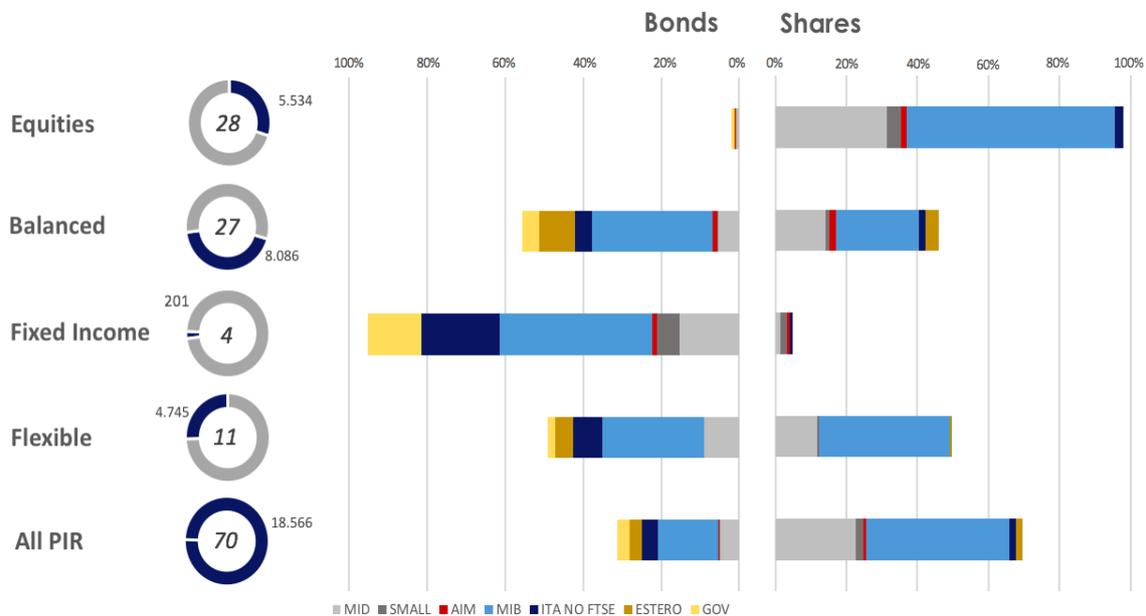
As we can see, the investments of PIRs in shares and corporate bonds of companies that do not belong to the FTSE MIB index is, on average, the 42% of the portfolio. Exactly twice the minimum required by law to enjoy tax benefits (21%). This is a very good result that highlights a positive effort of asset managers in the deployment of capital in favour of Small and Medium Enterprises.

A second evidence from **Graph 32** is that PIRs (outside the FTSE MIB) showed a preference for investments into liquid stocks belonging to mid-caps, that on average represent more than 20% of the investment choices. In particular, the focus is on the STAR segment.

However, we can also observe that capital was conveyed to the AIM market (ca. 3% of the investment) and to companies that are not listed on the Milan stock exchange ca 4%. This is a very important result because it perfectly fit the objective of the legislator: to incentivise long-term saving and to drive a portion of these savings into Italian Small and Medium Enterprises (SMEs) in order to reduce their dependence on the banking system.

Graph 33 give a different perspective on the capital invested and allow us to distinguish between shares and corporate bonds.

Graph 33: Portfolio composition by fund category (YTD) - shares vs bonds

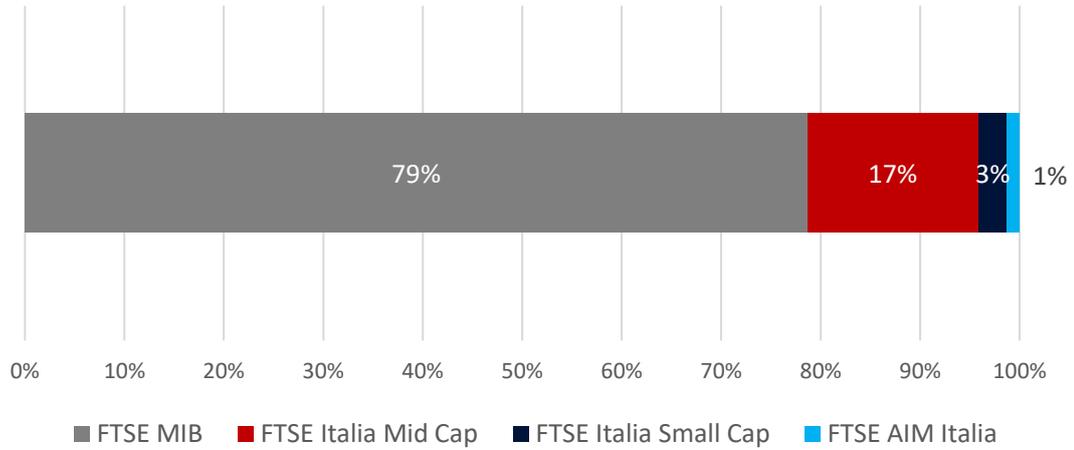


Sources: Assogestioni, Morningstar and student elaborations

The majority of the equity stocks are bought from the mid cap segment (excluding again the FTSE MIB), the small cap index follows and finally the AIM segment and not listed companies with very low percentages. Again, this is explained by liquidity issues. All the PIR compliant funds that have been introduced are Open-end funds. As a consequence, they must guarantee to investors the possibility to withdraw their capital when needed. This pushes Asset managers to prefer very liquid stock rather than stocks that have a high bid-ask spread.

However, we have also to point out that the market cap of the 4 indexes (FTSE MIB, MID, Small and AIM) are different with the MIB that account for ca. 4.6x the MID market, 27x the small market and 63x the AIM, (see Graph 34).

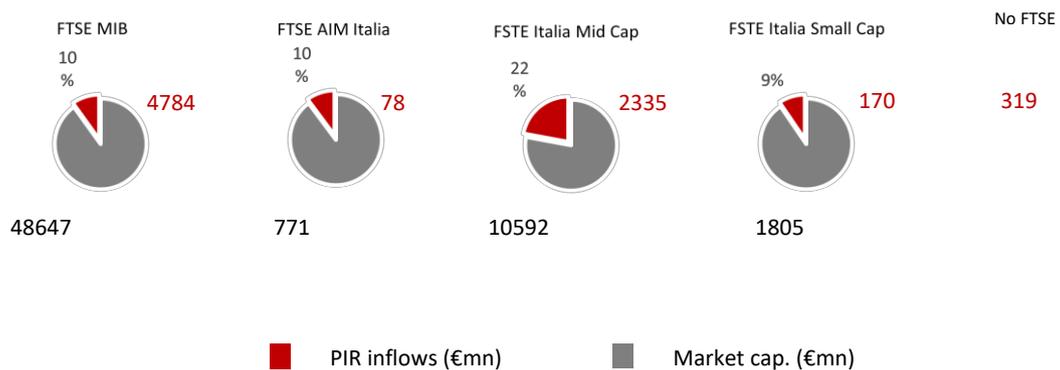
Graph 34: Breakdown by market cap. (28/09/18) - Milan stock exchange



Source: Milan Stock exchange

If we consider now the ratio of the capital invested by PIR over the respectively market index category we can notice that on average they represent ca. 13% with the MID segment that showed the highest percentage 22% and small cap the lowest 9%. **See Graph 35.**

Graph 35: PIR flows over market cap. (%) by indexes



Source: Milan Stock exchange

Under this perspective the results of the analysis seems to be more encouraging. Indeed looking at **graph 35** we can observe that the amount of funds invested in the AIM market is aligned with the other segment. This means that PIRs have been deployed with the almost the same percentage on each segment according to their capitalization. Therefore, to increase the amount of capital to convey into the AIM market the issue is to enlarge the segment capitalization and thus, facilitate the listing process for small business. Notice that the MID segment absorbed a higher proportion of capital from PIR fund. In our opinion this is related to the presence of STAR companies that were preferred by asset manager as they are very liquid and growing stocks.

Finally, looking at corporate bonds it seems that the investments are spread between FTSE MIB and ITA-No FTSE that represent not listed companies, with a percentage larger than what happened with shares. This could be a very good outcome as money are going to not listed companies and thus to the real economy. However, we will see in **Paragraph 5.1.2** that the majority of those not listed companies are very big and cannot be considered as small business. We are talking for example about Esselunga, Postevita, Cdpr, Almagora, etc.

5.1.2. Portfolios breakdown - the investee companies

In this section we are going to illustrate where the amount of capital raised by PIR compliant funds has been deployed. In particular, we will focus on each of the companies listed and not listed on the Milan Stock exchange. To do so, we downloaded the fund's prospectus available on Morningstar. We were able to track with accuracy an amount of € 8.285 billion.

Table 27 embrace all the funds that we were able to analyse.

Table 27: PIR compliant fund - tracked capital

Fund name	AUM
Flexible Funds	
Mediolanum Flessibile Futuro Italia LA	€ 920 million
Mediolanum Flessibile Sviluppo Italia L	€ 1440 million
Soprarno ritorno assoluto	€ 60 million
Schroder ISF Multi-Asset PIR Italia	€ 14.2 million
Kairos International SICAV Italia PIR P Cap EUR	€ 14.6 million
Deutsche AM multi asset pir fund	€ 95 million
Investiper Italia PIR25	€ 13.3 million
Total	€ 2662.3 million
Balanced Funds	
Eurizon progetto italia 70 pir	€26.4 million
Generation dynamic pir a (pensplan)	€14.6 million
Amundi valore italia pir p	€114.9 million
Eurizon pir italia 30 pir	€71.9 million
Eurizon progetto italia 20 pir	€220.3 million
Fideuram piano bilanciato italia 30 a	€481.6 million
Anima crescita italia ap	€402.4 million
Arca economia reale bilan italia 30 pir	€390.2 million
Amundi risparmio italia b	€178.6 million
Eurizon progetto italia 40 pir	€289.0 million
Fideuram piano bilanciato italia 50 a	€187.7 million
Allianz italia 50 special a	€86.6 million
Arca economia reale bilan italia 55 pir	€54.4 million
Total	€1.901.2 million
Fixed income	
New millennium augustum it. Divers. Bond a cap eur	€188.7 million
Zenit obbligazionario	€49.8 million

Ver capital high yield italian pir	€6.2 million
Total	€1.254.4 million
Equities	
Amundi Dividendo Italia B	€184.8 million
Amundi Sviluppo Italia B	€815.8 million
Eurizon PIR Italia azioni PIR	€4.8 million
FIDEURAM Piano Azioni Italia A	€477.2 million
Anima Iniziativa Italia A	€401 million
Allianz Azioni Italia All Stars	€224 million
Fidelity Italy A Cap EUR	€647 million
Arca Azioni Italia P	€540 million
Arca Economia Reale Equity Italia P (mid&small)	€170.7 million
AXA	€355.1 million
Total	€3.666 million
TOTAL FUNDS	€8.289 billion

Source: Morningstar and personal elaborations.

For each of those funds we were able to track the amount of capital invested into shares and corporate bonds of all the market index within the Milano stock exchange. In addition we managed to hint also the flow of capital to non-listed companies. We excluded investments into government bonds and non-Italian companies.

Results follow.

Table 28: FTSE MID - Funds portfolio breakdown

	<i>Flexible</i>	<i>Equities</i>	<i>Balanced eq.</i>	<i>Balanced F.I.</i>	<i>balanced</i>	<i>Fixed Inc.</i>	<i>Total</i>
<i>Interpump</i>	31.476.753 €	87.875.402 €	343.764 €	26.359.588 €	6.109.459 €	- €	152.164.965 €
<i>Hera</i>	38.903.145 €	48.649.916 €	565.915 €	39.222.551 €	7.558.376 €	- €	134.899.903 €
<i>Cerved</i>	37.678.139 €	64.368.223 €	321.182 €	18.063.863 €	6.235.578 €	- €	126.666.984 €
<i>Diasorin</i>	47.968.064 €	39.977.576 €	274.216 €	12.284.792 €	4.761.954 €	- €	105.266.602 €
<i>Iren</i>	12.407.854 €	45.965.742 €	192.790 €	34.379.502 €	5.419.764 €	1.740.232 €	100.105.884 €
<i>Amplifon</i>	3.169.667 €	62.505.770 €	171.726 €	29.583.125 €	2.876.079 €	626.508 €	98.932.875 €
<i>Autogrill</i>	25.642.147 €	41.903.473 €	208.907 €	14.385.619 €	4.196.386 €	- €	86.336.532 €
<i>Beni stabili</i>	15.931.005 €	37.352.632 €	-	24.207.340 €	1.079.400 €	1.508.805 €	80.079.182 €
<i>Enav</i>	10.998.495 €	45.765.052 €	171.975 €	14.984.967 €	2.739.990 €	- €	74.660.479 €

<i>Ovs</i>	24.925.202 €	33.448.616 €	192.758 €	7.165.950 €	3.471.875 €	1.320.022 €	70.524.423 €
<i>Inwit</i>	1.825.426 €	48.646.911 €	206.902 €	11.806.301 €	3.048.808 €	- €	65.534.348 €
<i>Technogym</i>	1.825.426 €	48.646.911 €	206.902 €	11.806.301 €	- €	1.072.950 €	63.558.490 €
<i>Ima</i>	1.053.644 €	49.476.185 €	228.976 €	8.284.272 €	3.127.157 €	100.491 €	62.270.725 €
<i>Salini</i>	20.929.950 €	- €		12.607.977 €	2.570.713 €	558.489 €	87.143.680 €
<i>impreglio</i>							
<i>Ifjs</i>	17.896.242 €	27.215.032 €	- €	10.349.368 €	1.719.278 €	3.379.418 €	60.559.338 €
<i>De longhi</i>	518.836 €	55.264.148 €	265.349 €	- €	3.741.925 €	- €	59.790.258 €
<i>Ansaldo</i>	23.158.701 €	15.685.992 €	202.260 €	10.552.272 €	2.512.860 €	1.992.568 €	54.104.653 €
<i>Anima</i>	22.652.255 €	23.394.572 €	- €	3.433.315 €	3.035.857 €	- €	52.515.999 €
<i>Cattolica</i>	18.254.920 €	12.749.643 €	216.896 €	13.290.732 €	5.699.507 €	1.231.044 €	51.442.742 €
<i>Sias</i>	2.272.264 €	9.990.691 €	170.889 €	33.871.079 €	1.570.552 €	396.918 €	48.272.393 €
<i>Reply</i>	1.105.199 €	34.279.033 €	- €	8.167.473 €	- €	- €	43.551.705 €
<i>Saras</i>	21.841.664 €	10.150.178 €	- €	9.597.072 €	- €	- €	41.588.914 €
<i>Fincantieri</i>	22.612.289 €	3.821.104 €	- €	2.902.800 €	4.624.403 €	1.499.789 €	35.460.385 €
<i>Italgas</i>	18.497.112 €	1.297.950 €	198.772 €	11.806.301 €	2.905.546 €	598.194 €	35.303.875 €
<i>Gima</i>	258.986 €	49.672.230 €	- €	- €	- €	- €	49.931.215 €
<i>Datalogic</i>	1.901.549 €	33.153.108 €	- €	- €	- €	- €	35.054.657 €
<i>Brunello</i>	- €	24.823.752 €	- €	7.022.600 €	- €	- €	31.846.352 €
<i>Marr</i>	1.199.998 €	31.286.638 €	- €	- €	- €	- €	32.486.636 €
<i>Farmafactorin</i>	598.301 €	19.436.691 €	- €	5.288.701 €	4.962.262 €	200.022 €	30.485.977 €
<i>g</i>							
<i>Igd</i>	23.482.615 €	3.370.786 €	157.590 €	1.554.750 €	- €	- €	28.565.741 €
<i>Tods</i>	16.443.000 €	6.857.739 €	188.583 €	3.897.600 €	705.040 €	- €	28.091.962 €
<i>Tip</i>	630.517 €	19.783.806 €	265.675 €	- €	3.048.808 €	- €	23.728.806 €
<i>Fila</i>	- €	19.607.272 €	- €	2.715.840 €	255.840 €	- €	22.578.952 €
<i>Credito</i>	- €	16.778.770 €	- €	2.528.492 €	- €	1.293.394 €	20.710.095 €
<i>emiliano</i>							
<i>Acea</i>	- €	9.180.778 €	- €	6.820.310 €	1.343.569 €	- €	19.762.619 €
<i>Ei towers</i>	2.449.262 €	10.313.914 €	183.449 €	4.280.000 €	685.785 €	- €	17.912.410 €
<i>Sondrio</i>	1.128.776 €	6.299.430 €	251.745 €	7.876.310 €	941.030 €	- €	16.497.291 €
<i>Piaggio</i>	14.260.000 €	- €	204.260 €	- €	- €	722.869 €	15.187.129 €
<i>Geox</i>	13.953.102 €	- €	- €	- €	- €	- €	13.953.102 €
<i>Mps</i>	846.660 €	- €	303.249 €	10.863.745 €	- €	- €	12.013.654 €
<i>Dobank</i>	1.124.961 €	8.725.089 €	- €	2.899.700 €	- €	- €	12.749.750 €
<i>Aquafil</i>	117.535 €	11.303.398 €	- €	- €	- €	- €	11.420.933 €
<i>Rai way</i>	2.195.784 €	8.539.944 €	- €	- €	213.150 €	823.864 €	11.772.742 €
<i>Biesse</i>	1.273.230 €	6.425.370 €	- €	2.791.800 €	- €	- €	10.490.400 €
<i>Erg</i>	5.997.204 €	4.017.307 €	- €	801.884 €	1.996.604 €	456.251 €	13.269.250 €
<i>Cementir</i>	746.704 €	6.669.557 €	- €	- €	- €	- €	7.416.261 €
<i>Maire</i>	24.042.910 €	6.045.200 €	- €	- €	- €	- €	30.088.110 €
<i>Ascopiave</i>	634.193 €	5.400.005 €	- €	- €	- €	- €	6.034.198 €
<i>Falck</i>	5.398.643 €	4.014.500 €	- €	- €	249.550 €	- €	9.662.693 €
<i>Elen</i>	- €	3.326.634 €	- €	- €	- €	- €	3.326.634 €
<i>Astm</i>	3.233.187 €	2.332.234 €	- €	- €	- €	- €	5.565.421 €
<i>Carel</i>	- €	- €	- €	- €	- €	- €	- €
Total							2.335.607.325,19
							€

Sources: Morningstar and students' elaboration

Table 29: FTSE Small - Funds portfolio breakdown

	<i>Flexible</i>	<i>Equities</i>	<i>Balanced eq.</i>	<i>Balanced F.I.</i>	<i>balanced</i>	<i>Fixed Inc.</i>	<i>Total</i>
<i>Avio</i>	8.154.786,00 €	18.621.381,00 €	- €	3.264.580,00 €	- €	- €	30.040.747,00 €
<i>Sogefi</i>	14.151.843,38 €	10.158.843,30 €	- €	- €	- €	- €	24.310.686,68 €
<i>Finmeccanica</i>	2.795.775,00 €	5.306.306,00 €	- €	10.313.672,00 €	- €	1.008.372,00 €	19.424.125,00 €
<i>Gamenet</i>	528.705,35 €	10.114.112,00 €	- €	- €	196.250,00 €	- €	10.839.067,35 €
<i>Unieuro</i>	96.998,00 €	10.556.315,40 €	- €	- €	- €	- €	10.653.313,40 €
<i>Banca Sistema</i>	74.427,00 €	7.156.450,00 €	- €	698.250,00 €	2.493.750,00 €	- €	10.422.877,00 €
<i>Open job</i>	- €	8.742.350,00 €	- €	- €	- €	577.352,00 €	9.319.702,00 €
<i>La Doria</i>	6.496.100,00 €	- €	- €	- €	- €	- €	6.496.100,00 €
<i>Cairo</i>	106.231,00 €	4.043.169,00 €	- €	- €	222.600,00 €	- €	4.372.000,00 €
<i>Sesa</i>	153.233,22 €	3.923.191,00 €	- €	- €	- €	- €	4.076.424,22 €
<i>Caltagirone</i>	- €	3.444.944,00 €	- €	- €	- €	- €	3.444.944,00 €
<i>Saes</i>	108.922,95 €	2.831.639,00 €	- €	- €	- €	- €	2.940.561,95 €
<i>Tecnoinvestiment</i>							
<i>i</i>	- €	2.774.161,00 €	- €	- €	- €	- €	2.774.161,00 €
<i>Lu-ve</i>	- €	2.184.447,00 €	- €	- €	- €	- €	2.184.447,00 €
<i>Valsoia</i>	- €	2.099.500,00 €	- €	- €	- €	- €	2.099.500,00 €
<i>BEE</i>	- €	1.987.000,00 €	- €	- €	- €	- €	1.987.000,00 €
<i>Cembre</i>	- €	1.986.098,00 €	- €	- €	- €	- €	1.986.098,00 €
<i>Gedi</i>	159.203,32 €	1.031.205,00 €	- €	- €	- €	701.183,00 €	1.891.591,32 €
<i>Mondadori</i>	- €	1.811.733,00 €	- €	- €	- €	- €	1.811.733,00 €
<i>Autostrade</i>							
<i>Meridionali</i>	- €	1.716.707,00 €	- €	789.402,00 €	209.790,00 €	- €	2.715.899,00 €
<i>COIMA</i>	- €	- €	- €	- €	- €	- €	- €
<i>Piquadro</i>	- €	1.576.322,00 €	- €	- €	- €	- €	1.576.322,00 €
<i>Coima Res</i>	- €	3.173.724,00 €	- €	- €	- €	- €	3.173.724,00 €
<i>SISTEMA</i>	498.999,50 €	- €	- €	- €	- €	999.800,00 €	1.498.799,50 €
<i>Elica</i>	- €	1.404.760,00 €	- €	- €	- €	- €	1.404.760,00 €
<i>B&C</i>	- €	1.309.200,00 €	- €	- €	- €	- €	1.309.200,00 €
<i>Astaldi</i>	- €	- €	- €	- €	- €	1.180.311,00 €	1.180.311,00 €
<i>Basicnet</i>	- €	1.177.600,00 €	- €	- €	- €	- €	1.177.600,00 €
<i>Txt</i>	- €	1.163.474,00 €	- €	- €	- €	- €	1.163.474,00 €
<i>Rcs</i>	- €	1.154.090,00 €	- €	- €	- €	- €	1.154.090,00 €
<i>Triboo</i>	- €	1.070.000,00 €	- €	- €	- €	- €	1.070.000,00 €
<i>Alerion</i>	- €	- €	- €	- €	- €	957.240,00 €	957.240,00 €
<i>Aeffe</i>	- €	- €	- €	- €	- €	683.964,00 €	683.964,00 €
<i>INDEL</i>	124.126,38 €	- €	- €	- €	- €	- €	124.126,38 €
<i>Digital</i>	118.424,90 €	- €	- €	- €	- €	- €	118.424,90 €
<i>Retelit</i>	93.245,00 €	- €	- €	- €	- €	- €	93.245,00 €
<i>Mittel</i>	- €	- €	- €	- €	- €	52.874,98 €	52.874,98 €
<i>Sabaf</i>	26.082,10 €	- €	- €	- €	- €	- €	26.082,10 €
Total							170.555.215,78 €

Sources: Morningstar and students' elaborations

Table 30. FTSE MIB – Funds portfolio breakdown

	<i>Flexible</i>	<i>Equities</i>	<i>Balanced eq.</i>	<i>Balanced F.I.</i>	<i>balanced</i>	<i>Fixed Inc.</i>	<i>Total</i>
<i>Intesa Sanpaolo</i>	110.327.788,10 €	230.871.987,00 €	2.822.748,00 €	58.762.024,00 €	17.021.538,00 €	8.194.621,44 €	428.000.706,54 €
<i>Eni</i>	93.345.316,20 €	217.668.513,40 €	2.752.441,00 €	42.743.022,00 €	20.047.489,00 €	- €	376.556.781,60 €
<i>Unicredit</i>	102.793.930,66 €	151.797.876,00 €	1.971.408,00 €	56.637.520,00 €	31.809.230,00 €	7.585.072,50 €	352.595.037,16 €
<i>Enel</i>	113.022.300,27 €	154.197.833,00 €	2.046.349,00 €	37.617.681,00 €	21.089.096,00 €	5.241.870,16 €	333.215.129,43 €
<i>Banca Generali</i>	85.094.485,00 €	93.306.055,90 €	676.087,00 €	45.612.102,00 €	12.766.189,00 €	6.504.581,83 €	243.959.500,73 €
<i>Generali</i>	85.094.485,00 €	93.306.055,90 €	676.087,00 €	45.612.102,00 €	12.766.189,00 €	6.504.581,83 €	243.959.500,73 €
<i>Telecom Italia</i>	97.954.495,24 €	38.027.468,00 €	1.987.173,00 €	44.746.978,00 €	10.410.260,00 €	5.539.450,68 €	198.665.824,92 €
<i>Banco Bpm</i>	94.901.450,00 €	25.775.164,00 €	1.858.751,00 €	50.134.441,00 €	12.741.661,00 €	3.416.890,00 €	188.828.357,00 €
<i>Mediobanca</i>	51.369.868,62 €	62.130.118,40 €	1.229.229,00 €	43.147.259,00 €	7.327.003,00 €	3.895.003,00 €	169.098.481,02 €
<i>Fiat</i>	70.925.373,38 €	70.349.382,00 €	338.957,00 €	- €	4.497.366,00 €	219.063,00 €	146.330.141,38 €
<i>Cnh Industrial</i>	24.164.497,79 €	110.856.048,20 €	283.675,00 €	719.586,00 €	3.053.778,00 €	- €	139.077.584,99 €
<i>A2a</i>	8.727.545,00 €	87.875.401,50 €	343.764,00 €	26.359.588,00 €	6.109.459,00 €	- €	129.415.757,50 €
<i>Unipolsai</i>	8.727.545,00 €	87.875.401,50 €	343.764,00 €	26.359.588,00 €	6.109.459,00 €	- €	129.415.757,50 €
<i>Atlantia</i>	51.338.139,00 €	58.373.724,00 €	755.571,00 €	9.431.572,00 €	5.433.115,00 €	1.551.810,00 €	126.883.931,00 €
<i>Tenaris</i>	25.021.029,04 €	83.013.786,10 €	458.884,00 €	3.382.120,00 €	- €	- €	111.875.819,14 €
<i>Leonardo</i>	52.218.497,04 €	34.229.052,00 €	205.344,00 €	12.410.534,00 €	7.287.248,00 €	- €	106.350.675,04 €
<i>Prysmian</i>	39.162.653,35 €	50.181.722,00 €	173.510,00 €	3.872.494,00 €	309.800,00 €	1.259.469,00 €	94.959.648,35 €
<i>Ferrari</i>	10.091.175,15 €	78.650.868,70 €	322.873,00 €	- €	2.711.629,00 €	- €	91.776.545,85 €
<i>Buzzi Unicem</i>	12.490.870,00 €	47.720.331,60 €	570.300,00 €	25.870.091,00 €	2.707.043,00 €	1.897.330,00 €	91.255.965,60 €
<i>Unipol</i>	51.507.586,78 €	8.864.752,00 €	- €	22.059.910,00 €	1.189.847,00 €	1.720.411,00 €	85.342.506,78 €
<i>Snam</i>	23.811.328,08 €	34.394.879,00 €	1.065.969,00 €	13.410.422,00 €	5.430.637,00 €	512.725,00 €	78.625.960,08 €
<i>Saipem</i>	41.614.395,00 €	29.589.442,00 €	462.301,00 €	997.700,00 €	2.904.218,00 €	1.031.056,00 €	76.599.112,00 €
<i>Stmicroelectronic</i>	13.791.668,80 €	57.140.435,00 €	269.975,00 €	- €	2.411.500,00 €	- €	73.613.578,80 €
<i>Campari</i>	36.643.740,00 €	34.900.316,40 €	- €	- €	- €	1.408.452,00 €	72.952.508,40 €
<i>Fincobank</i>	14.300.475,00 €	47.786.492,00 €	- €	9.837.612,00 €	- €	- €	71.924.579,00 €
<i>Ubi Banca</i>	4.564.240,76 €	13.611.617,00 €	518.896,00 €	47.607.570,00 €	4.529.100,00 €	1.653.064,00 €	72.484.487,76 €
<i>Banca</i>							
<i>Mediolanum</i>	27.917.177,00 €	29.522.977,00 €	- €	7.842.705,00 €	3.152.955,00 €	- €	68.435.814,00 €
<i>Terna</i>	4.128.592,34 €	29.444.745,70 €	460.761,00 €	29.401.850,00 €	4.179.417,00 €	347.772,00 €	67.963.138,04 €
<i>Pirelli & C</i>	11.334.357,00 €	40.290.561,20 €	- €	2.936.250,00 €	458.006,00 €	- €	55.019.174,20 €
<i>Exor</i>	16.781.342,70 €	27.652.663,00 €	400.767,00 €	4.773.864,00 €	324.933,00 €	543.185,00 €	50.476.754,70 €
<i>Recordati</i>	11.354.851,00 €	38.288.145,50 €	- €	- €	- €	- €	49.642.996,50 €
<i>Italgas</i>	18.497.112,00 €	1.297.950,00 €	198.772,00 €	18.304.741,00 €	2.905.546,00 €	598.194,00 €	41.802.315,00 €
<i>Moncler</i>	10.779.113,00 €	30.443.395,80 €	- €	- €	- €	- €	41.222.508,80 €
<i>Poste Italiane</i>	9.420.664,00 €	23.351.310,00 €	681.507,00 €	3.367.169,00 €	- €	- €	36.820.650,00 €
<i>Mediaset</i>	26.850.410,00 €	3.396.426,00 €	211.565,00 €	- €	- €	1.068.450,00 €	31.526.851,00 €
<i>Azimut Holding</i>	25.500.812,00 €	- €	- €	831.032,00 €	2.077.580,00 €	2.404.311,00 €	30.813.735,00 €
<i>Salvatore</i>							
<i>Ferragamo</i>	2.219.520,25 €	17.948.037,00 €	- €	- €	- €	- €	20.167.557,25 €
<i>Bper Banca</i>	8.487.648,00 €	2.184.220,00 €	335.116,00 €	8.622.012,00 €	- €	206.009,00 €	19.835.005,00 €
<i>FINMECCANICA</i>	2.795.775,00 €	5.306.306,00 €	- €	10.313.672,00 €	- €	1.008.372,00 €	19.424.125,00 €
<i>Brembo</i>	524.515,00 €	17.357.581,50 €	- €	- €	- €	- €	17.882.096,50 €
<i>Total</i>							4.784.796.599,29 €

Sources: Morningstar and students' elaborations

Table 31: AIM market – Funds Portfolio breakdown

	<i>Flexible</i>	<i>Equities</i>	<i>Balanced eq.</i>	<i>Balanced F.I.</i>	<i>balanced</i>	<i>Fixed Inc.</i>	<i>Total</i>
<i>Space4</i>	- €	16.411.729,00 €	- €	3.952.000,00 €	- €	- €	20.363.729,00 €
<i>Guala</i>	- €	8.076.714,10 €	- €	- €	- €	201.992,00 €	8.278.706,10 €
<i>Iniziative bresciane</i>	- €	8.046.400,00 €	- €	- €	- €	- €	8.046.400,00 €
<i>Equita group</i>	18.432,00 €	7.430.320,00 €	- €	- €	- €	- €	7.448.752,00 €
<i>Ideami</i>	165.450,00 €	6.623.014,70 €	- €	- €	- €	- €	6.788.464,70 €
<i>Spactiv</i>	- €	4.645.000,00 €	- €	- €	- €	- €	4.645.000,00 €
<i>Icf</i>	- €	4.632.499,20 €	- €	- €	- €	- €	4.632.499,20 €
<i>Alpi</i>	- €	4.102.912,00 €	- €	- €	- €	- €	4.102.912,00 €
<i>Spaxs</i>	- €	4.004.319,90 €	- €	- €	- €	- €	4.004.319,90 €
<i>Gpi</i>	- €	1.319.208,00 €	905.302,00 €	- €	- €	- €	2.224.510,00 €
<i>Alkemy</i>	322.286,58 €	1.254.420,00 €	- €	- €	- €	- €	1.576.706,58 €
<i>Wiiit</i>	- €	1.353.550,00 €	- €	- €	- €	- €	1.353.550,00 €
<i>Italian wine brands</i>	- €	1.217.115,00 €	- €	- €	- €	- €	1.217.115,00 €
<i>Orsero</i>	- €	1.110.000,00 €	- €	- €	- €	- €	1.110.000,00 €
<i>Cover 50</i>	- €	- €	- €	- €	- €	646.500,00 €	646.500,00 €
<i>Industrial star</i>	490.000,00 €	- €	- €	- €	- €	- €	490.000,00 €
<i>Bion</i>	267.936,36 €	- €	- €	- €	- €	- €	267.936,36 €
<i>Sprintitaly</i>	250.000,00 €	- €	- €	- €	- €	- €	250.000,00 €
<i>Sit</i>	222.099,50 €	- €	- €	- €	- €	- €	222.099,50 €
<i>Dbn group</i>	178.212,84 €	- €	- €	- €	- €	- €	178.212,84 €
<i>Enertronica</i>	- €	- €	- €	- €	- €	156.008,16 €	156.008,16 €
<i>Pharmanutra</i>	54.190,90 €	- €	- €	- €	- €	- €	54.190,90 €
<i>Smre</i>	18.060,00 €	- €	- €	- €	- €	- €	18.060,00 €
<i>Vetrya</i>	14.304,57 €	- €	- €	- €	- €	- €	14.304,57 €
Total							78.089.976,81 €

Sources: Morningstar and students' elaborations

Table 32: ITA no FTSE – Funds portfolio breakdown

	<i>Flexible</i>	<i>Equities</i>	<i>Balanced eq.</i>	<i>Balanced F.I.</i>	<i>balanced</i>	<i>Fixed Inc.</i>	<i>Total</i>
<i>Cdpr</i>	68.123.690,00 €	- €	198.580,00 €	10.395.863,00 €	4.595.026,00 €	1.030.350,00 €	84.343.509,00 €
<i>Ferrovie dello stato</i>	31.786.885,00 €	- €	- €	37.466.668,00 €	3.253.088,00 €	- €	72.506.641,00 €
<i>Esselunga</i>	24.545.153,95 €	- €	200.240,00 €	3.007.406,00 €	7.167.133,00 €	2.939.144,00 €	37.859.076,95 €
<i>Invita</i>	29.506.214,00 €	- €	- €	- €	- €	- €	29.506.214,00 €
<i>Acea</i>	2.417.962,00 €	9.180.778,00 €	- €	6.820.310,00 €	1.343.569,00 €	- €	19.762.619,00 €
<i>Iccrea</i>	3.248.037,00 €	- €	- €	10.240.225,00 €	4.675.230,00 €	1.005.000,00 €	19.168.492,00 €
<i>Aem</i>	3.950.450,00 €	- €	343.791,00 €	6.481.014,00 €	2.257.561,00 €	- €	13.032.816,00 €
<i>Zi</i>	2.025.963,74 €	- €	- €	8.647.356,00 €	299.562,00 €	- €	10.972.881,74 €
<i>Biotech</i>	- €	9.108.000,00 €	- €	- €	- €	- €	9.108.000,00 €
<i>Postevita</i>	311.892,00 €	- €	- €	4.043.286,00 €	- €	523.370,00 €	4.878.548,00 €

<i>Vittoria</i>	379.115,00 €	- €	- €	4.207.772,00 €	- €	- €	4.586.887,00 €
<i>Autostrada to-mi</i>	1.075.812,00 €	3.326.779,00 €	- €	- €	- €	- €	4.402.591,00 €
<i>Banca vicenza</i>	1.008.600,00 €	- €	- €	- €	529.345,00 €	- €	1.537.945,00 €
<i>Arnoldo</i>							
<i>mondadori</i>	- €	1.353.300,00 €	- €	- €	- €	- €	1.353.300,00 €
<i>Autostrade br-vr</i>	419.820,00 €	- €	210.000,00 €	- €	- €	635.160,00 €	1.264.980,00 €
<i>Marcolin</i>	- €	- €	- €	- €	- €	1.219.792,00 €	1.219.792,00 €
<i>Fireit</i>	- €	- €	205.076,00 €	- €	933.096,00 €	- €	1.138.172,00 €
<i>Almaviva</i>	202.066,00 €	- €	- €	- €	- €	202.950,00 €	405.016,00 €
<i>Limacorporate</i>	404.420,00 €	- €	- €	- €	- €	- €	404.420,00 €
<i>Aeroporto roma</i>	- €	- €	- €	- €	- €	399.372,00 €	399.372,00 €
<i>Superstrada</i>	399.000,00 €	- €	- €	- €	- €	- €	399.000,00 €
<i>Bormioli</i>	130.854,10 €	- €	- €	- €	- €	200.692,00 €	331.546,10 €
<i>Servizi ass comm</i>							
<i>estero</i>	- €	- €	- €	- €	- €	212.077,00 €	212.077,00 €
<i>Adler</i>	- €	- €	199.408,00 €	- €	- €	- €	199.408,00 €
<i>Coop muratori</i>							
<i>ravenna</i>	- €	- €	- €	- €	- €	198.909,00 €	198.909,00 €
<i>Danone</i>	139.900,00 €	- €	- €	- €	- €	- €	139.900,00 €
<i>Snaitech</i>	- €	- €	- €	- €	- €	- €	- €
Total							170.555.215,78 €

Sources: Morningstar and students' elaborations

In **Tables 28 to 32** (above) is illustrated the amount of capital invested by each of the tracked fund (aggregated for funds category) into shares and corporate bonds, for the main markets, on the Milano stock exchange: **Table 28** considers companies belonging the Mid-market, **Table 29** companies belonging to the Small market, **Table 30** targets companies belonging to the MIB market, **Table 31** is dedicated to companies listed on the AIM market and finally, **Table 32** address Italian companies that are not listed on the FTSE.

The first evidence is that considering listed companies, the FTSE MIB collected the higher amount of capital (ca. €4.7 billions). It follow the Mid cap market (ca. €2.3 billions), the Small market with (ca. €170 billion) and the AIM market (ca. €78.1 millions). Instead, not listed companies collected ca. € 170 millions. If we sum the funds invested in companies not belonging to the FTSE MIB, we obtain ca. € 2.7 billion that is equal to 37% of the total investments (net of government bonds and non-Italian companies). These results are in line with studies conducted in **paragraph 5.1.1.** and evidence a positive efforts of Asset managers in the deployment of capital towards Small and Medium Enterprises. However, it is also clear that asset managers preferred to deploy money into more liquid stocks: € 2.3

billions to Mid cap vs ca € 400 million to AIM, Small cap and ITA no FTSE. This self-selection is due to the fact that PIR compliant funds are mostly Open-end funds. As a consequence, they must guarantee to investors the possibility to withdraw their capital when needed. This pushes Asset managers to prefer very liquid stock rather than stocks that have a high bid-ask spread. Indeed, the self-selection is not pursued only at a market segment level. If we look at the companies belonging to each of the market segments, we can see that only few companies collect the higher amount of capital. In particular if we assume that ITA no FTSE components could potentially be all the small and medium business that operates in our country, we can easily conclude that only few catchy “names” took benefit from the instruments: Esselunga, Postevita, Cdpr, Almaviva, etc. These are companies that already have a healthy financial structure and thus do not really need PIRs. To match these incongruences an intervention is needed, both from the legislator point of view and from the manager’s point of view. Indeed, on one side it is required an easing of all the costs and the procedures to approach financial markets as they suffocate SMEs that want to undertake an IPO process. On the other side it is essential that managers become aware of the potentials of financial markets in developing a comprehensive long-term growth development in their businesses.

5.2. The effects on capital markets and on the real economy

In this paragraph, we want to discuss the effects that the PIR flows had on the Italian economy. In particular, we are interested in understanding if this newbie fiscal scheme has been able to act as a game changer, giving real support to the development of financial markets and offering SMEs an additional and valid source of capital. To do so, we focused on studying the secondary and primary markets to detect any signal or shift in favour of the PIR instrument. In particular, regarding the secondary market we analysed the following variables: **a)** stocks prices and returns; **b)** trading volumes; **c)** liquidity, in terms of bid-ask spreads. We supposed that moving very large mass of funds (ca. €15 bn of new inflows YTD – **see Chapter 4**) into the stock market would have change significantly the average value of the main variables and indicators. For the primary market instead, we

concentrated our studies on the market for IPOs and on all the alternative investment strategies that could have taken advantages from the introductions of PIRs. The reasoning start from the hypothesis that this new amount of capital raised could have pushed companies to list on the stock exchange and capture the liquidity injection through capital placement in various forms such as: bonds issues, capital increases, IPOs, etc. Business angels, Private Equity and Venture Capital markets, will be analysed too.

Summing up, to evaluate PIRs impact on the Italian economy and on financial markets, we will analyse the primary and secondary markets according to:

1) Primary market

- IPOs: monitoring the number of new IPOs on financial markets that enlarge the basket of securities where PIR-compliant funds can invest.
- SPOs: monitoring the issuing of new shares by companies already listed on the Milano stock exchange;
- Alternative financing solution: monitoring the activity of Business Angels, Venture Capital and Private Equity funds, and looking at the market of Mini-bonds, Equity Crowdfunding and Social Lending.

2) Secondary market

- prices and returns of shares
- trading volumes
- liquidity (in terms of bid-ask spreads)

Further considerations are carried out on the number of new enrolment into the ELITE program. Entering in ELITE, means that the company is approaching the financial market, ideally in order to reach the listing goal on the Stock Exchange. Moreover, the registration on this certified platform, play an important signalling role, making the company more visible and more attractive to investors.

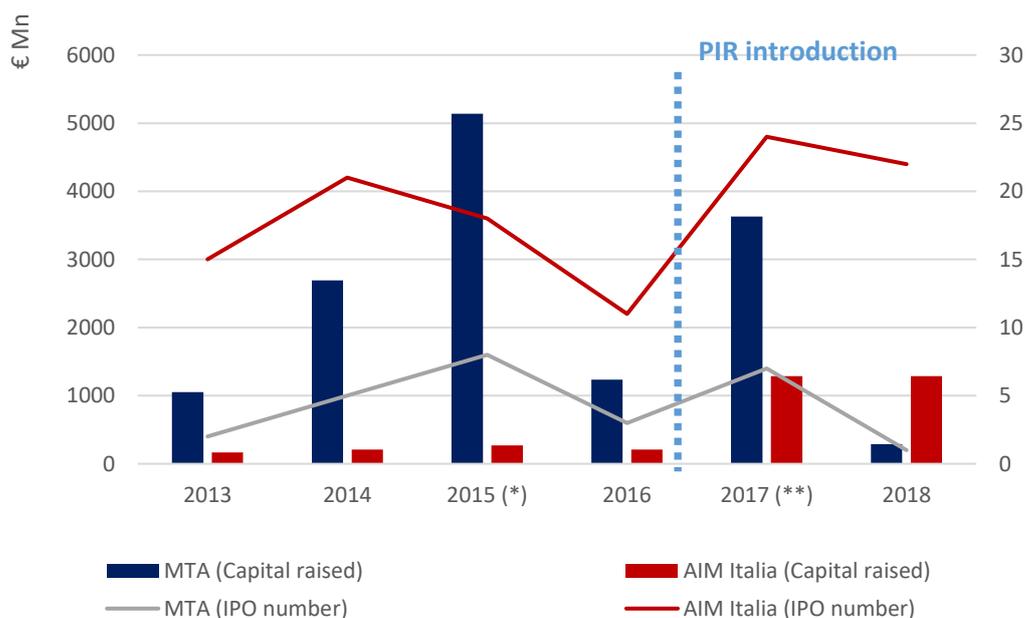
5.2.1. The Primary market

This part of the Chapter is dedicated to evaluate PIR effects on the primary market considering: **a)** the IPO market; **b)** the SPO market; **c)** alternative financing channels.

a) Initial public offering

We start our analysis observing the IPO market with the intention to verify if the PIR were able to encourage new listing operations.

Graph 36: IPOs – numbers and capital raised (€Mn) - '13 to '18 figures

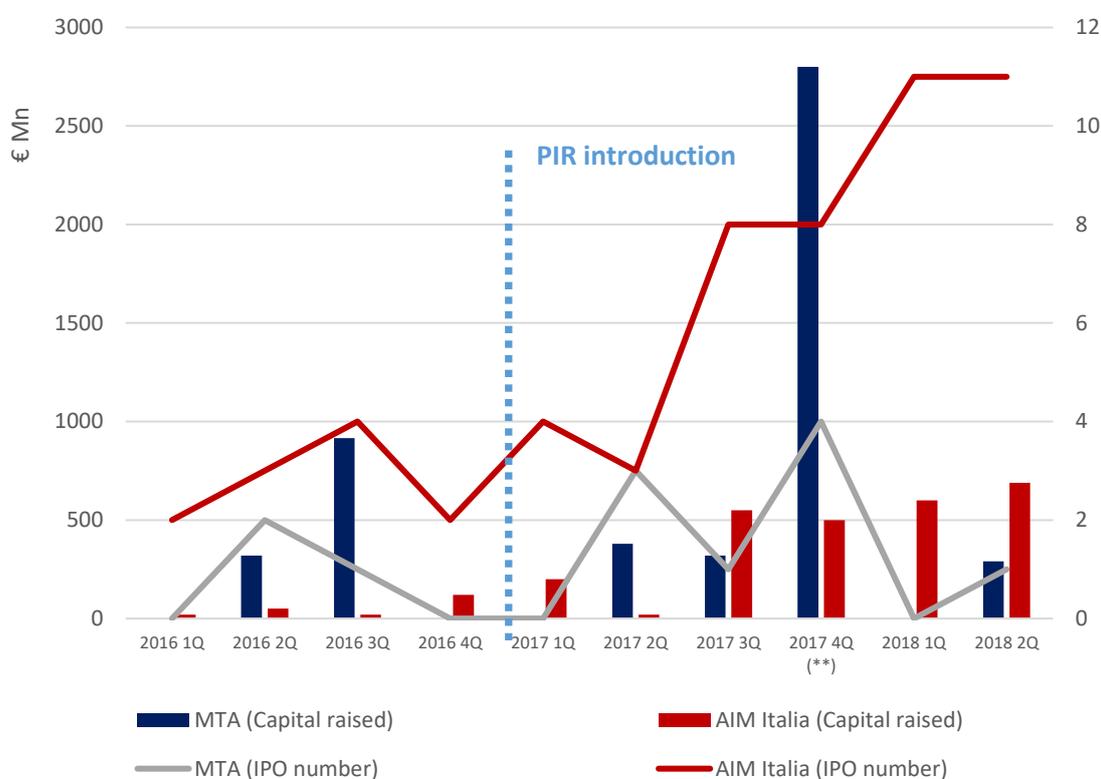


(*) Poste Italiane IPO for a value of € 3.363 million.

(**) Pirelli IPO for a value of € 2.398 million

Source: Milan Stock Exchange

Graph 37: IPOs – numbers and capital raised (€Mn) - quarterly data



Source: Milan Stock Exchange

Graph 36 and **Graph 37** illustrate the flows of Initial Public Offerings on the Milan Stock Exchange (MTA) and on the AIM (Alternative Investment Market) both in terms of capital raised and number of operations. In particular, **Graph 36** considers yearly flows from 2013 to 2018 while **Graph 37** consider data on a quarterly basis, from 2016 to 2018. Results show that on the AIM market, starting from 2H 2017, the number of new IPOs seems to have increased significantly, with 24 operation in FY 2017 on top of 11 operation in FY 2016. The growth trend is observable also in 2018 as we registered 22 operations 1H2018. Unfortunately, recent markets turmoil could affect in a negative way the final number of operations for 2018. This growth trend is not registered into the MTA market where new listings are aligned with historical data. Thus, this is a first evidence of the positive effects that the PIR normative conveyed to SMEs supporting the development of financial markets. If we now consider the collection of capital, data are even more encouraging with an YoY

growth (2017 vs 2016) of ca. 510% in terms of capital raised. In particular, we can observe that starting from 3Q 2017 the capital collected on the AIM market was always higher than the capital raised on the MTA, net of the IPO of Pirelli & C. which absorbed almost € 2.4 in 4Q 2017.

However, in our opinion, it is important to underline that a big portion of the capital raised on the AIM market between 2017 and 2018, was collected by SPAC (special purpose acquisition vehicles). SPACs are investment vehicles, created with the objective of collecting financial resources from the market and invest them in the acquisition of unlisted companies “target”: a firm with high future potential upsides on turnover and profitability. Companies are bought against the issuing of shares on the primary market that are then traded on the secondary market. SPACs objective is therefore to individuate worthy small and medium enterprises, and bring them to the financial market, through an acquisition process. Thus, the capital raised with the IPO of the SPAC is targeted to be invested into SMEs that need risk capital, matching all the point stressed out by the PIR normative, **see paragraph 3.1.1.**

Table 33: Capital collection break down - the role of SPACs

	2016	2017	2018
AIM IPO collection (€ Mn)	208	1285	1289
<i>of which SPAC</i>	150	933	1157
<i>of which SMEs</i>	60	338	132
AIM IPO number	11	24	22
<i>of which SPAC</i>	2	7	7
<i>of which SMEs</i>	9	17	15

Source: Milan Stock Exchange

Looking at **Table 34** we can see that over the 12 months of 2017, there have been 7 SPACs IPOs on the AIM market in Italy, for a total amount of € 933. In 2018, SPACs registered the same number of IPOs on the AIM (YTD) against a total capital collection of € 1,157 million. The risk is that the 90% of the capital raised in 2018 (YTD) will be held in place for 24 months, without giving a real support to the economy. We decided to further indagate this issue.

Table 34: SPACs operations data - IPO, capital raised & target companies

SPAC	IPO date	Segment	Capital raised (€ Mn)	Target co.	Target_IPO (date)	Target_IPO segment
Glenalta Food	10/11/15	AIM	80	Orsero	13/02/17	AIM
Industrial Stars of Italy 2	27/06/16	AIM	50,5	SIT	22/09/17	AIM
Space 3	05/04/17	MIV	150	Aquafil	04/12/17	STAR
EPS Equita PEP	01/08/17	AIM	150	ICF Group	14/05/18	AIM
Crescita	15/03/17	AIM	130	Cellularline	04/06/18	AIM
Space 4	21/12/17	MIV	500	Guala	06/08/18	STAR
Life Care Capital	07/03/18	AIM	140	n.d.	n.d.	n.d.
Archimede	17/05/18	AIM	47	Net Insurance	n.d.	AIM
SPAXS	09/07/18	AIM	600	Banca Interprovinciale	n.d.	n.d.

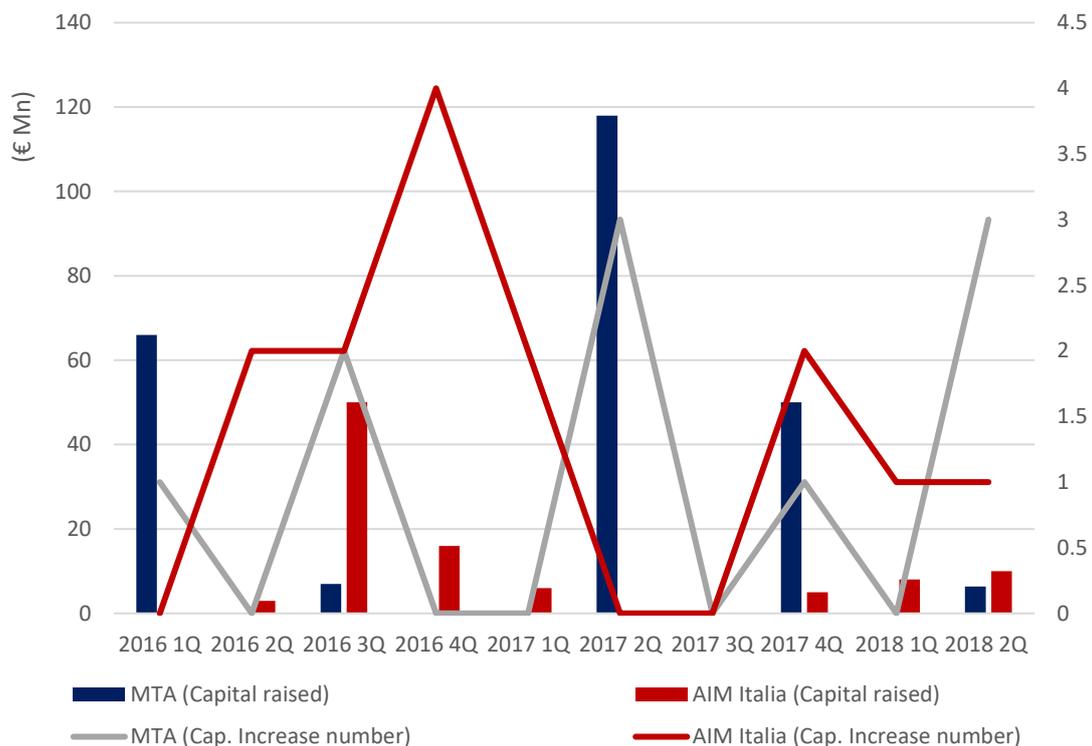
Source: Milan Stock Exchange

By looking at the **Table 34**, we can see that there is a significant conversion rate in terms of capital invested into SMEs. We registered 4 transactions in 2017 and 3 in 2018 (YTD). Thus, we are confident that all the conditions for a continuous increase in new listings are met, unless unforeseen market turbulence.

b) Seasoned public offering (SPO) - capital increases

We considered also operations of capital increases (issuing of new shares) by companies already listed on the stock exchange. However, the literature¹⁸ says that SPO are not common in Italy as in the UK and US and consequently we expect this market will be less influenced by PIRs. In fact, **Graph 38** illustrates that there have not been significant effects after the PIR normative. The number of deals is stable, and beyond some single substantial transactions, there is no evidence of an effect linked to PIRs. Note that our considerations do not account for the increase in Saipem's capital in 2016, the one of Prysmian of 2018, and the recapitalization of the banking groups (Unicredit, Banca MPS, Ubi Banca and Banco Popolare). Indeed they are excluded from the calculation.

Graph 38: Capital increases operations (numbers and € Mn) quarterly data



Source: Milan Stock Exchange

¹⁸ Nuove quotazioni e IPOs: l'esame alle matricole (Marco Giorgino, Giancarlo Giudici, Stefano Paleari)

c) Alternative financing channels

Finally, we investigate on the markets of alternative finance, supposing that PIR could have affected also this instrument. **Table 35** illustrates the flows of some alternative financing channels for SMEs.

Table 35: Alternative Financing Sources - Capital collection flows - 2015 to 2018 H1

Channel:	2015	2016	2017	2018 1H
Business Angels				
<i>Operations</i>	101	52	117	64
<i>Investment</i>	20.900.000 €	24.400.000 €	26.600.000 €	14.630.000 €
Venture Capital				
<i>Operations</i>	122	128	133	80
<i>Investment</i>	74.000.000 €	104.000.000 €	133.000.000 €	96.000.000 €
Private Equity				
<i>Operations</i>	220	194	74	160
<i>Investment</i>	4.546.000.000 €	8.191.000.000 €	4.805.000.000 €	2.857.000.000 €
Mini-bonds				
<i>Issues</i>	85	106	125	74
<i>Capital collection</i>	1.899.590.000 €	3.423.470.000 €	5.437.900.000 €	544.800.000 €
Equity crowdfunding				
<i>Successful deals</i>	7	19	49	88
<i>Capital collection</i>	1.767.000 €	4.363.000 €	11.586.000 €	14.249.000 €
Social Lending				
<i>Loans supplied</i>	6.370.000 €	29.452.000 €	84.108.000 €	94.073.000 €

Source: AIFI and "Crowd-investing report, 2018, Politecnico di Milano"

Private Equity is the investment into the risk capital of companies not listed on the stock exchange, if the latter are start-ups or even newly-established companies, we classify the channel as Venture Capital. The mini-bonds are issued by SMEs, following the legislative innovations introduced starting from the 2012 by the 'Development Decree', which simplified the procedures and reduced the costs associated with the issue of debt securities. Equity crowdfunding has also been introduced in Italy with the 'Development Decree' of 2012 and has enabled start-ups and innovative SMEs to raise capital on the Internet through portals authorized by Consob. To be noted that from 2018 this opportunity will be extended to all SMEs. Social lending portals (or peer-to-peer lending) allow companies to finance themselves through unsecured loans provided by the Internet 'crowd'. (See Chapter 2 for further details)

Technically, all the aforementioned financial instruments are compatible with PIRs, and in particular with that part of the investment, 21%, which must not concern securities of the FTSE MIB. In practice, it is clear that the PIR contribution to these funding channels available for SMEs has been almost null. Actually, all the PIR funds are open-end: for an open-end fund, investing in unlisted or listed securities that are not very liquid, such as the mini-bonds on the ExtraMOT PRO list, is difficult. They have to guarantee investors the possibility to exit the funds whenever they want. Private equity and venture capital investments, in fact, are most often offered in the form of closed-end funds.

Given the considerations that we made so far, in our opinion, the most effectively way to monitor if PIR compliant funds are deploying resources on the primary market is by observing the IPO market. Indeed, out of the three analysis we made, new listing is the channel that registered the most promising results. SPOs, in our opinion, are not tailored for PIRs and alternative financing channels require a shift through closed end fund.

Wilcoxon-Mann-Whitney test

To further stress our results we decided to test on the assumption that the IPO market were affected positively by the PIR fiscal scheme. Thus, we decided to carry out the Wilcoxon-Mann-Whitney test.

With the help of statistics, we want to understand if was the PIR introduction, that have increased the number of firms that decided to go public through the Initial Public Offering.

From 2008 to 2016, there have been on average 2 IPOs every two months on our financial market, against an average of 6 IPOs each two months for 2017/2018. This is what emerges from a direct and uncritical observation of the data at our disposal, but we cannot be satisfied. What we do not know is if the result is sufficiently "solid" at the statistical level to support our thesis. This is why we need to perform the Wilcoxon-Mann-Whitney test, that will check whether the difference between the pre- and post-PIR averages is relevant, or whether it is due, in some way, to the case. We considered two sample of analysis:

- Sample 1: from January 2017 to August 2018, following the PIRs event.
- Sample 2: from 2008 to 2016, before the PIRs event;

The result of the test support the hypothesis that PIR influenced the market and is significant at 99% level: the probability that the difference between the number of IPOs before and after introduction of PIR is significant is equal to 99%. Unfortunately, the different sizes between the two samples are also significant: 108 months for the pre-PIR period against 20 months in 2017/2018. This is an aspect that could affect the outcome of our test. Therefore, we decided to "strengthen"¹⁹ both samples and recalculate the previous test. The result is that the probability in favour of our hypothesis is almost 100%, instead the probability that this event is merely due to random factors is on average equal to 0.00%. In other words, the increase in IPO on Milan Stock Exchange is sensitive to the PIR event. Below we report the results of our test performed with the statistic software:

¹⁹ [1] With the Block-Bootstrap methodology: a thousand of possible new IPO combinations, resampling the previous data in the SAMPLE 2 size.

SAMPLE 1 = a: IPO number from 1/1/2017 to 1/8/2018,

SAMPLE 2 = b: IPO number from 1/1/2008 to 31/12/2016,

SAMPLE 3 = nuovoA, is the strengthen SAMPLE 2 through the use of bootstrap

In R:

```
set.seed(123)
```

```
> a = c(6,7,1,3,1,3,3,0,8,2,3,2,2,7,3,1,4,2,2,1)
```

```
> b = c
```

```
(2,2,2,0,0,5,0,3,2,1,0,2,5,3,1,0,2,6,5,2,2,5,1,1,3,1,2,0,3,7,3,3,1,2,1,2,7,1,2,2,0,2,1,0,2,2,1,0,0,0,0,0,2,1,0,1,2,0,1,1,1,0,0,1,0,2,0,1,1,0,3,1,1,1,0,1,2,0,0,0,4,0,0,3,1,0,0,0,1,0,2,0,0,0,1,1,0,0,0,2,0,1,2,2,0,1)
```

```
> B=1000
```

```
> x=0:8
```

```
> nuovoA=sample(size= 108, x, replace=T)
```

```
> wilcox.test(nuovoA,b, paired=TRUE, conf.level=0.99)
```

Wilcoxon signed rank test with continuity correction

data: nuovoA and b

V = 4353, p-value = 1.012e-12

alternative hypothesis: true location shift is not equal to 0

However, our result must be interpreted with accuracy. Indeed, we cannot say with absolute certainty if a company, which has performed an Initial Public Offering, has performed it with the intention of intercepting money collected through PIRs. The phenomenon of 'hot issue markets' (Ibbotson and Jaffe, 1975) is well known in the literature, according to which on the market there is an alternation of particularly favourable cycles for the capital and cycles less favourable, depending on the volatility of returns, the cost of capital linked to interest rates, the market momentum and investor's risk appetite. Similarly, it is well known that companies have the option of choosing the timing for the capital raising, to exploit temporary advantageous situations ('window of opportunity' theory; Lerner, 1994; Loughran and Ritter, 1995) such as: particularly

favourable budget results and generous valuation multiples (think about the dot-com bubble phenomenon).

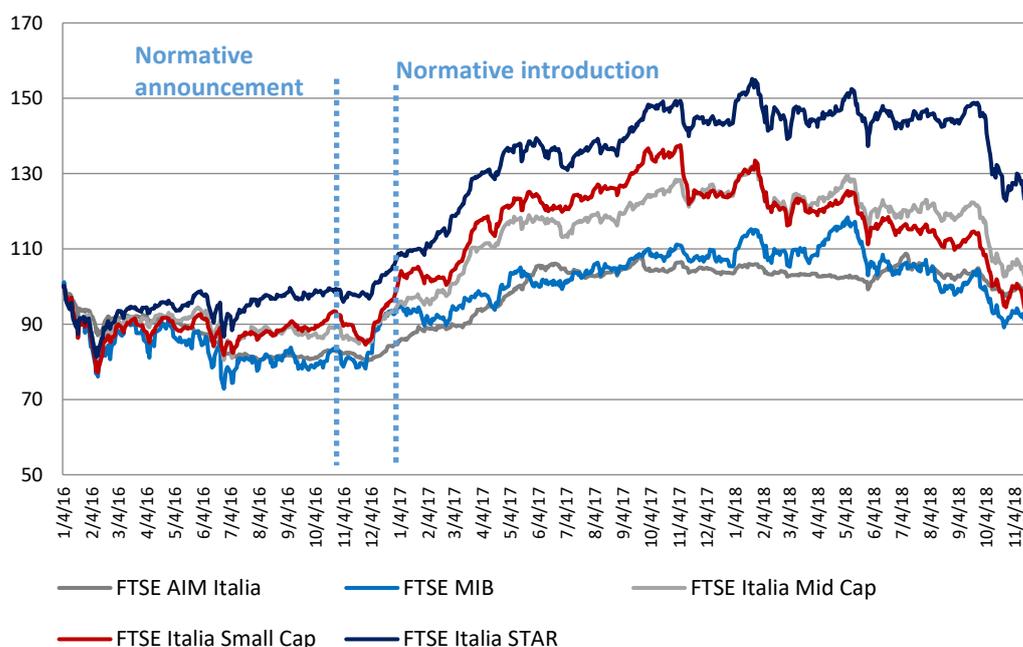
5.2.2. The secondary market

This paragraph is dedicated to the analysis of the impact that PIR flows had on the secondary market considering: **a)** shares prices and returns, **b)** trading volumes, **c)** liquidity, in terms of bid-ask spread. Finally, further considerations are carried out on the number of new enrolment into the ELITE program.

a) The analysis of returns

Despite being Introduced in 2017 January first, the market started to discount PIRs advantages in 2016. In fact, on 21 September 2016, the government announced the introduction of the newbie fiscal scheme for the following year and by the end of October 2016 they were yet in the public domain. It is therefore foreseeable a market reaction before the beginning of 2017. For this reason, we analysed market data considering also 2016 figures.

Graph 39: PIR impact on market returns – monthly data



Source: Milan Stock Exchange

Graph 39 shows the relative trend of five indexes of the Milan stock exchange: (1) the FTSE MIB index, (2) the FTSE Italia STAR index, (3) the FTSE Italia Mid Cap index, (4) the FTSE Italia Small Cap index, (5) the FTSE Aim Italia index. The average returns of the five indices are also calculated in **Table 36**, according to two different time windows.

Table 36: Average market returns of the main stock exchange indexes

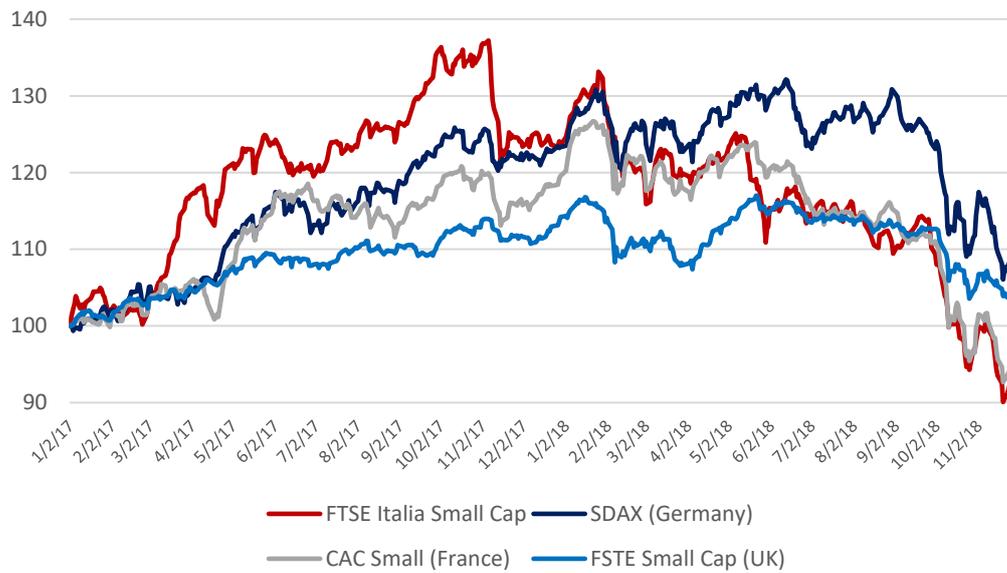
Index:	01/09/2016 - 31/12/2017	1/1/2017 - 31/12/17
FTSE MIB	29,0%	13,6%
FTSE Italia STAR	46,1%	34,7%
FTSE Italia Mid Cap	40,8%	32,3%
FTSE Italia Small Cap	39,5%	26,8%
FTSE AIM Italia	27,0%	22,4%

Source: Milan Stock Exchange

It can be noted that, in both time windows, STAR was the index that best performed. The blue chips (MIB) went well, but worse than others, especially during 2017. The AIM Italia market index seemed to have been less influenced but we noted a difficulty at the end of 2016. The small-cap index went particularly well but it suffered a significant drop in the last two months of 2017. The overall good performance could indicate a positive effect of the PIR on the Italian price list, in fact, in the course of 2017 only the German blue chips index (DAX) approached the FTSE MIB, with an increase of 12.5%. The French CAC 40 index increased by 5.6% and the British index (FTSE 100) by 7.6%. However, in our opinion, it is important to stress out the following observation. According to data provided in **paragraph 5.1** the FTSE Mid collected almost 30% of the total PIR investment, following the FTSE MIB and on top of the AIM market and the FTSE Small. Thus, considering **Graph 39** and **Table 36** we would expect a higher value for the FTSE Mid index. Instead, we saw the best performance in the STAR index. This result underline once again that asset managers were cautious in selecting the stock of the most liquid and solid companies.

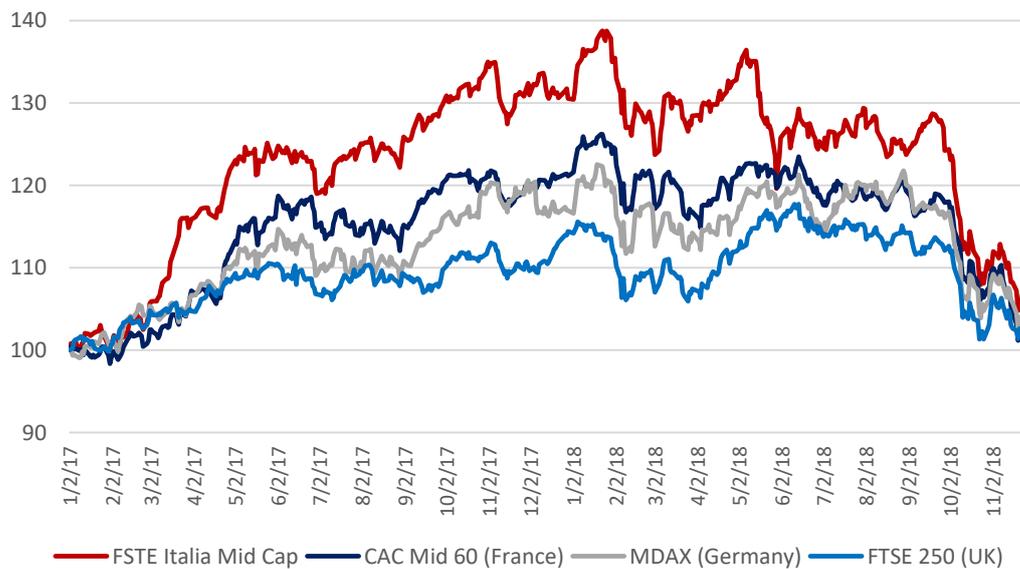
Given the significant performance of the Italian stock exchange we want now to indagate if this was related to a country specific event, such as the introduction of the PIR normative or was the result of other dynamics not related to Italy. Thus, **Graphs 40 and 41** compare the Milan Stock Exchange indexes for small caps and mid-caps with comparable indexes for France, Germany and the United Kingdom.

Graph 40: European Small caps indexes comparison



Source: Milan Stock Exchange

Graph 41: European Mid caps indexes comparison



Source: Milan Stock Exchange

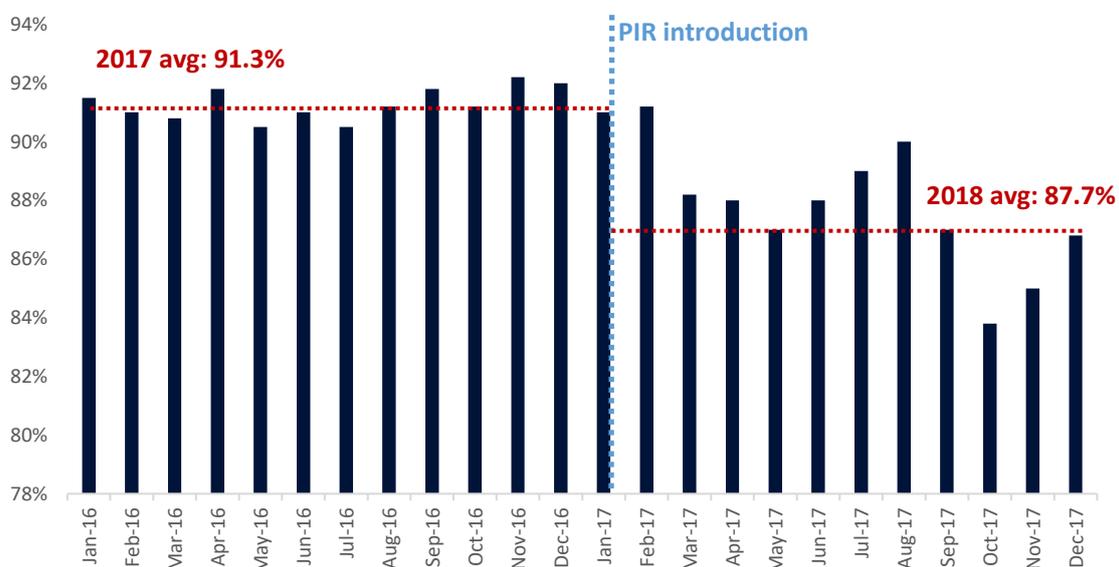
Regarding small caps, there were similar performances in all the country analysed, with Italy slightly outperforming the others with extra yield starting from H1 2017 to H1 2018. Unfortunately, from H2 2018 Italy decreased because of country turmoil. This highlights once again the potential country risk related to the PIR instrument.

Considering Mid cap we can observe more clearly the extra-yield of Italian markets in comparison to the figures of other countries. Again, starting from H1 2018 we can see a systematic decrease of the indexes level due to country specific risk and European turmoil due to the actual duty war.

b) The analysis of exchanges volumes

Here the aim is to identify any 'anomalous' effects on the trading volumes in terms of exchange value. Historically, the securities included in the Italian blue chip index (MIB), have generated more than 90% of the value traded on the whole Milan Stock Exchange.

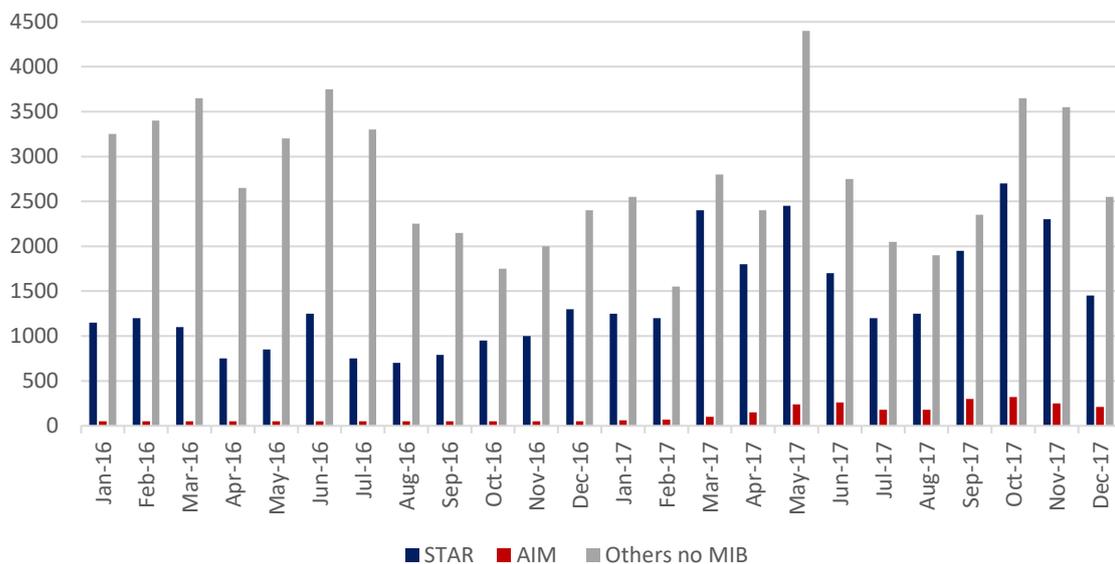
Graph 42: Monthly average FTSE Mib trading volumes – exchange values



Source: Milan Stock Exchange

Graph 43 shows that during 2017, this percentage has definitely fallen, consistently with the hypothesis that the market attention may have been refocused towards the securities compliant with the PIR investment constraints (21% of capital invested in securities not belonging to MIB). Indeed, in 2016 the yearly average value of MIB trading volume on the Stock Exchange was 91.3%, while for 2017 was 87.7%. If we consider that in both years, the total volume of trade has been unchanged (about € 630 billion), it can be estimated that a percentage equal to about 3.6% of turnover (so € 22.7 billion), has moved from the blue chips to other stocks. Therefore, the PIR scheme did not increase the overall trade volume, but allowed a redistribution of stocks in favour of smaller securities.

Graph 43: Money equivalent of exchanges on segments



Source: Milan Stock Exchange

Graph 43 gives us more details to understand which segments of the market have been more affected by this new inflow. The exchanges on AIM Italia increased substantially (the monthly average for 2017 is € 165 million against € 27 million in 2016). The increase on the STAR is much more considerable in absolute terms (the monthly average went from € 977 million in 2016 to € 1,775 million in 2017). The remaining securities do not see any significant change. So we can confirm the hypothesis that PIR contributed to generate a very significant increase in trading volumes on securities not included in the blue chip index

(MIB), but with an effect of 'cannibalization' on the latter. If we now look at the volume in terms of number of deals we can observe the same encouraging results.

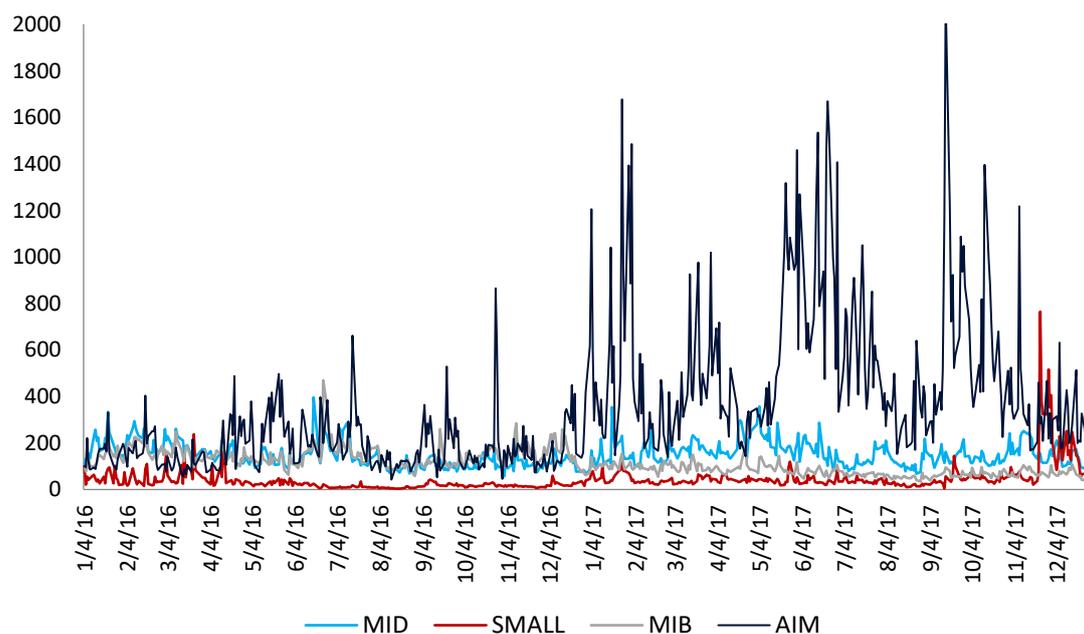
Table 37: Indexes exchange volumes

	AIM		MID		SMALL		MIB	
	2016	2017	2016	2017	2016	2017	2016	2017
Mean	1.662.423	4.693.749	48.081.250	52.510.236	66.096.680	134.508.268	837.265.625	447.397.638
g YoY		182%		9%		104%		-47%
St. Dev.	970.634	3.044.502	17.958.491	17.389.733	68.264.847	232.452.452	268.219.298	134.212.103
St. Dev./Mean	58,4%	64,9%	37,4%	33,1%	103,3%	150,5%	32,0%	30,0%

Source: Milan Stock Exchange and Bloomberg

Table 37 illustrates that the trading volumes decreased in the MIB market in favour of the AIM market, Small market and MID market. This results underlying again a shifting of interest from large caps to small and medium caps due to the introduction of the PIR normative. The same results are aggregated in **Graph 44**.

Graph 44: Trading volumes 2016 to 2018 (million)

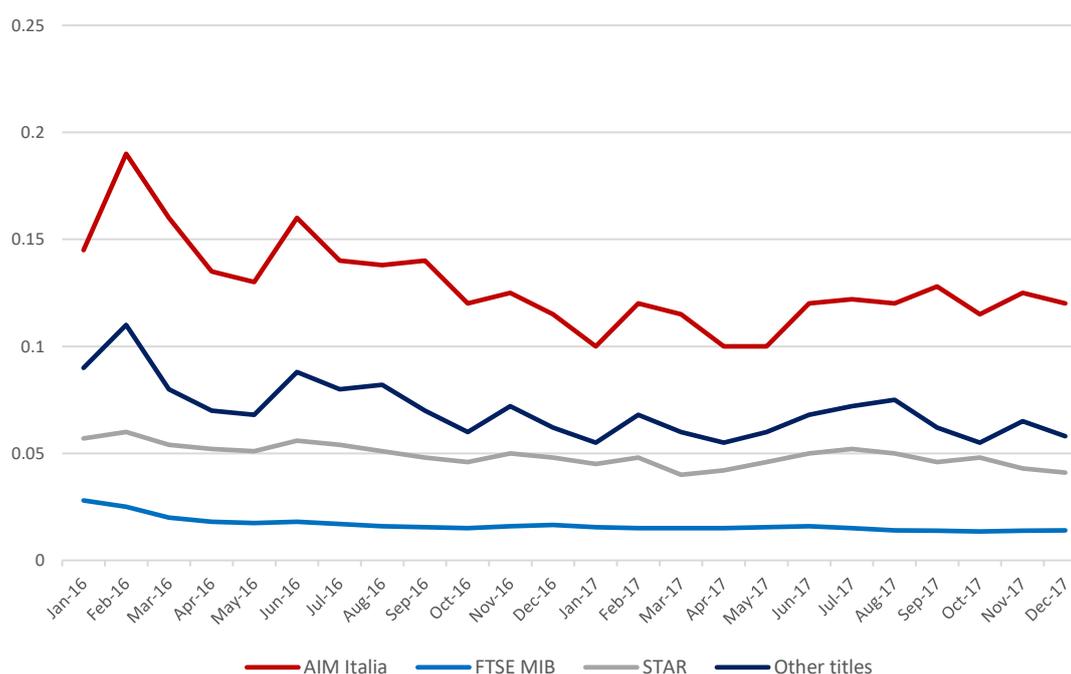


Source: Milan Stock Exchange and Bloomberg

c) The analysis of the bid-ask spreads

The third part of the analysis aims to identify possible effects that PIRs have caused on the listed shares' liquidity, which in our analysis is measured by the bid-ask spread, the difference between the money-price and the price-letter.

Graph 45: Bid-ask spread average monthly value



Source: Milan Stock Exchange

Graph 45 shows the trend of the average monthly bid-ask spread both for the securities of the FTSE MIB index and of the other market segments over time. For the blue chips index, the average value of the spread is equal to 0.0146 before the PIR introduction and 0.0122 after. For the other segments the value is higher: in the STAR the average spread goes from 0.0535 to 0.0461, from 0.1395 to 0.111 for AIM Italy, and from 0.0813 to 0.0650 for all other titles. With regard to liquidity, we can say that the PIR effect was positive: the increase of market capitalization, especially in the STAR and mid-cap indexes, and the increase in trade volumes, especially on AIM Italy, have reduced the bid-ask spreads. This

is a generalized phenomenon for all securities, without any direct effect for those securities useful for the purpose of satisfying the 21% constraint imposed by the law. Generally speaking, it is possible that this result is also driven by other factors, such as the greater competition among the major investors working of the market.

The ELITE experience

ELITE is an international platform of services created to support companies in the realization of their growth projects through a path of organizational and managerial development aimed at increasing competitiveness and visibility towards investors. The goal is to 'train' SMEs to access to capital markets and alternative financial instruments. ELITE is dedicated to the most ambitious companies, with a solid business model, a clear growth strategy and interested in learning about all the tools available to finance their future growth. To date, almost 600 Italian companies have participated or are participating in the program. Consequently, entering in ELITE, means that the company is approaching the financial market, ideally in order to reach the listing goal on the Stock Exchange. Thus, the number of new enrolments to the Elite program by Italian companies can be taken as a proxy of future potential interest for capital markets. Therefore, we decided to investigate whether PIRs were able to affect the average enrolment figures. We did not found evidences in favour of a link between the two subjects. However, we want to highlight that the ELITE program is growing in years: the national companies enrolled in the Elite program, were up to 518 in 2018 YTD, against 437 members at the beginning of 2017 and 290 in January 2016. Thus, in our opinion, this could encourage entrepreneurs to approach capital markets in the following years, unless unforeseen market turbulences.

5.3. Estimation of the demand for capital

This paragraph provides an estimation of the total potential demand for PIR capital in Italy.

The hypothesis for the estimation:

- 1) PIRs are the main catalyst for the IPO market;
- 2) The companies' funding GAP is satisfied mainly by Initial Public Offerings;
- 3) IPOs of SMEs are on the AIM market;
- 4) The average IPO size will be confirmed also in the case of new entries.

The idea is to gather all the Italian SMEs that could potentially raise capital on the AIM market through IPOs. Then the intention is to select a sub group based on a number of filter that will be explained afterwards. As the PIR normative impose PIR-compliant funds to invest at least 21% of their AUM in companies not belonging to the FTSE MIB, the total demand for PIR capital by freshmen would be:

$$\frac{\text{Number_of_new_IPOs} * \text{Average_IPO_size}}{0.21}$$

First of all we use the AIDA database to take out all Italian non listed SMEs with revenues between €5 million and €250 million. In fact, lower revenues would mean that the company is too small to access the stock market; on the other hand, higher revenues would probably mean that the company will access other segments. Secondly, we would like to take out from the initial pool those companies that are more likely to undergo the listing process in the next years. To do so, we consider the requirements imposed by the Milan stock exchange. In particular: active legal status, active website and financial statements available from the year before the listing.

Then, further filters have been defined on the basis of the average data from the 103 companies listed on the AIM market, as it is computed by the 2018 edition of the IR Top

Consulting AIM watchdog. They stated that the typical profile of a company living in the AIM market is the following:

- 2017 revenues of € 43 million
- 2017 EBITDA margin equal to 13%
- average capitalization (net of SPAC) of € 43 million
- average float from IPO (net of SPAC) equal to 23%
- average funding (net of the SPAC) of € 8.2 million.

For the purpose of the analysis we focus on the most important characteristics of the identikit, by selecting only companies that show 2017 revenues higher than €40 million and 2017 EBITDA margin higher than 12%.

Table 38: The steps to the potential freshmen candidates

AIDA DATABASE	
Constraints	Number of Companies
5 €mln < 2017 Revenues < 250 €mln	640.001
Non-listed companies	639.989
<i>Universe of Observation</i>	639.989
Active legal status	462.863
Active web site	34.287
Available 2017 financial statements	15.120
2017 Revenues > 40€mln	3.926
EBITDAm > 12%	
Freshmen candidates	3.926

Sources: AIDA data base and students elaborations.

Table 38 shows the steps followed to obtain the 3.926 potential candidates for IPO on the AIM market. The issue now is to estimate the hungry of capital of these firms. To do so, we analyse data from Milan Stock Exchange, considering a three year time horizon (2016, 2017 and 1H 2018). The money collection through IPO in the AIM market, net of the SPACs, were 59 € million in 2016, 337 € million in 2017 and 132 € million in 1H 2018. We also know how many IPOs, net of SPACs, were successfully concluded, in particular they are: 12 in 2016, 18 in 2017 and 21 in 2018. The weighted average of these numbers, gives an estimated IPO size for the AIM market equal to ca. . **See Table 39.**

Table 39: Average IPO size - 2016 to 2018

	2018	2017	2016
AIM money collection through IPO	1.289.340.000 €	1.270.800.000 €	209.510.000 €
AIM money collection through IPO, net of SPACs	132.340.000 €	337.800.000 €	59.510.000 €
AIM IPOs number	26	26	14
AIM IPOs through SPAC	5	8	2
AIM IPOs number, net of SPACs	21	18	12
Avg. IPO size	6.301.905 €	18.766.667 €	4.959.167 €
Weighted AVG (16-17-18)	8.682.787 €		

Sources: Milano stock exchange and students elaborations.

Finally, by applying the above mentioned formula, the AIM freshmen potential demand results to be ca. €34 billions. Thus, with a minimum investment of 21% in small and medium enterprises (**see Chapter 3**), the total PIR demand for capital by these companies is estimated to be ca. € 162 billions.

6. Questionnaire

In **chapter 4**, we analysed the PIR instrument from the standpoint of the Italian households, embodying the capital offer; in **Chapter 5**, we shifted on the demand side, looking at the Italian SMEs. Both the analysis showed that PIRs are very good instruments that have achieved the following goals: **a)** channelling part of Italian savings towards investments in domestic companies; **b)** raising more financial resources for small businesses other than “large” groups; **c)** spreading a positive “feeling” among Italian entrepreneurs about going public, even with small to medium sized companies. However, we observed that to further unchain the potential of PIRs, a higher contribution of all the actors involved is required: for intermediaries, a careful identification of the companies on which to allocate the resources collected; for companies, a responsible search for concrete growth projects and a serious awareness of the stock market benefits. In particular, referring to companies, it is fundamental the commitment of Italian entrepreneurs, that must approach the capital market if they want to increase their competitiveness and undertake growth strategies in the long term. Thus, in **chapter 6** we decided to conduct a questionnaire targeting all the companies that went public on the AIM market between 2015 and 2018. The intention is to collect and share the experience of entrepreneurs that already approached capital markets with the objective of highlighting the benefits and costs, the advantages and the disadvantages of the stock exchange. In our view, this could increase entrepreneurs’ awareness of financial markets and guide more companies to go public in future years.

The survey is organised as follow:

a) quantitative section, in which questions are focused on collecting technical information about the company’s profile;

b) qualitative section, in which questions are focused on assessing companies listing process and in particular: benefits, costs and main challenges.

c) open question to encourage any suggestions and remarks about the listing process, with specific attention to government interventions.

We sent the Questionnaire to all the companies that went public on the AIM market between 2015 and 2018 and only 10% of the sample answered.

The main results are represented below. Then, the questionnaire follow.

Quantitative Section

1. Indicate the Company headquarters and the IPO date.
2. Indicate the sector in which the Company operates, according to the ATECO codex.
3. Indicate the total turnover for the years 2014, 2015, 2016 and 2017 (€mn).
2. What is the percentage of turnover coming from foreign markets?
3. Indicate the following information relating to the IPO experience:
 - % of listed shares:
 - Total capital raised:
 - Listing technique:

Qualitative Section

1) The choice of listing on the stock exchange is usually dictated by a plurality of benefits summarized in four categories; Indicates for each category, the main reasons that made you decide to go public on the stock exchange:

- a) Operational benefits:
 - Earnings gains in the operational management of the company, thanks to the entry of new private partners and in particular of institutional investors: []
 - Generational change management: []

- Benefits related to greater visibility abroad and implicit certification of the quality of products towards customers, as well as image benefits to the public and the media: []
- raise capital for internal expansion and / or external expansion or enter a new market or geographical area: []

b) financial benefits:

- redefinition and diversification of the company's financial structure and renegotiation of credit conditions: []
- access to external capital at lower costs and more easily than unlisted companies:
- raising of capital for financing external growth, through acquisition operations, or internal through new investments: []
- exploiting particularly favourable moments in the financial market cycle to benefit from a premium in the final pricing of its securities on the market: []

c) organizational benefits:

- greater availability of information and improvement of the management control system: []
- Incentive plans for employees (stock options): []
- Attractiveness of managers and qualified employees thanks to the level of prestige obtained by listing: []

d) tax benefits:

- Tax incentives linked to listing: []

e) others:

2) With the listing, what were actually the benefits you have obtained, compared to the categories listed above

a) Benefits of an operational nature:

- Earnings gains in the operational management of the company thanks to the entry of new private partners and in particular of institutional investors: []
- Generational change management: []
- Benefits related to greater visibility abroad and implicit certification of the quality of products towards customers: []
- Increase of transparency concerning business activity []
- raise capital for internal expansion and / or external expansion or enter a new market or geographical area: []
- increase in brand awareness []

b) financial benefits:

- redefinition and diversification of the company's financial structure and renegotiation of credit conditions: []
- access to external capital at lower costs and more easily than unlisted companies: []
- raising of capital for financing external growth, through acquisition operations, or internal through new investments: []
- exploiting particularly favorable moments in the financial market cycle to benefit from a premium in the final pricing of its securities on the market: []
- Increased liquidity for shareholders []
- Risk diversification []

c) organizational benefits:

- greater availability of information and improvement of the management control system
- Incentive plans for employees (stock options): []
- Attractiveness of managers and qualified employees thanks to the level of prestige obtained by listing: []
- Evaluation by rating agencies and implicit increase in organizational efficiency and stakeholder management

- Structuring of corporate governance in line with the Code of Conduct
- d) tax benefits:
 - Tax incentives linked to listing:
- e) Other:

3) Which were, in order of importance and burden, the main costs incurred?

- a) Direct quotation costs, which include:
 - Legal and strategic consulting costs provided by advisors:
 - Administrative procedures (for example for possible changes to the articles of association):
 - Cost of certification of financial statements and preparation of documentation required by supervisory authorities:
 - costs pertaining to the underwriter in the event of the placement of securities on the market ranging from 3% to 7% of the offered capital:
 - Marketing costs for advertising the offer, road shows and dissemination of the prospectus:
 - Fees to be paid to the stock exchange upon entry on the price list and in subsequent years:
 - Cost of under-pricing, or opportunity cost linked to the risk of the IPO of selling shares at a value lower than that perceived by the market:

- b) Indirect pricing costs, which include all the additional additional costs induced by the new status of listed company:

- Costs for an investor relation service: []
- Costs for strengthening the internal management control system: []
- Costs deriving from the loss of competitive advantages: []
- Costs to overcome information barriers to access the Exchange if the company operates in an innovative sector, whose technological pattern is still uncertain: []

c) other

4) In order to be authorized for listing, which of the following shares represented the greatest commitment for the company

- a) Floating Capital Corrections: []
- b) Recruitment of companies for auditing: []
- c) Actions on management: []
- d) Structuring of financial statements: []
- e) Investor relations activity management: []
- f) Administrative management adjustment: []
- g) Control and management: []
- h) Other:

Open Questions

- 1) If your company were to serve as an example to incentives other entrepreneurs to go public, what message would You value the most?
- 2) Do You think that PIRs have favoured your decision to go public ? If yes, in which order of importance: (low, medium or high) ?

- 3) As part of the experience gained on the Italian stock exchange, what indications would it be useful to provide to the government to incentivize the number of listings?

6.1. Aggregate Results

In this paragraph we reported the aggregate results of the answers to qualitative questions. In addition, we selected 4 companies and showed their feedbacks regarding open questions.

In **Table 40** we present the aggregate results to Question 1 and Question 2, (regarding Section 1). In our opinion, it is interesting to analyse these two questions together because they refer to the expectations of companies before the IPO (question 1) and to the effective experience after the IPO (question 2). Thus, it is possible to highlight if expectations were met. Looking at the table, we can observe that 0% of the sample considered advantageous the possibility to attract institutional shareholders or to undertake a generational change. Same for the possibility to exploit time window opportunities and external auditing benefits. Instead, all companies recognized as advantageous the possibility to acquire certifications and visibility and the benefit of attracting talents. Expectations were met each time boxes are highlighted in orange. This happens in the case of Certification and visibility, financial structure and diversification, capital collection, Planning and control, Stock options plans and talent attractiveness. On the other hand expectations weren't met every time the boxes are highlighted in red. This is the case for Internal/external growth, cost of capital reduction and fiscal incentives. Finally green boxes show all the voices in which companies overperformed their expectations: transparency, brand awareness, increased shares liquidity, risk edging and corporate governance awareness.

Table 40: Aggregate results on qualitative questions 1 and 2

Questions	Expectation - % of answers	Experience - % of answers	Difference
Operative advantages			
Institutional shareholding	0%	0%	
Generational change	0%	0%	
Certification and Visibility	100%	100%	0%
Transparency	0%	25%	25%
Internal/external growth	100%	75%	-25%
Brand awareness	25%	100%	75%
Financial advantages			
Financial structure diversification	25%	25%	0%
Cost of capital reduction	50%	25%	-25%
Capital collection	100%	100%	0%
Time window opportunity	0%	0%	0%
Increased liquidity	0%	25%	25%
Risk hedging	0%	25%	25%
Organizational advantages			
Planning & control	50%	50%	0%
Stock options plans	25%	25%	0%
Talent attractiveness	100%	100%	0%
External auditing	0%	0%	0%
Corporate Governance awareness	0%	50%	50%
Fiscal advantages			
Fiscal incentives	50%	25%	-25%

Sources: students elaborations.

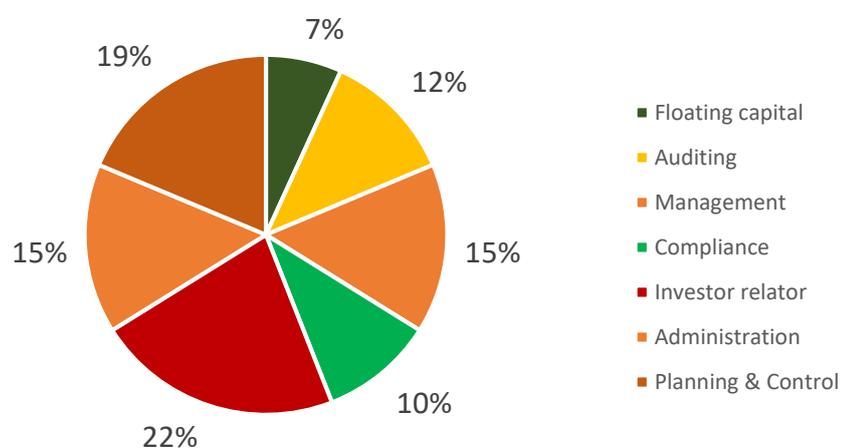
Table 41 and **Chart 17** show the aggregate answers respectively to Question 3 and Question 4, (regarding Section 1). In particular **Table 41** illustrates all the costs related to the IPO process organized in proportion to their impact on the total cost, according to companies perspective. The cost for the advisor is the more important, while less relevant are information asymmetry and spill-over costs. Instead, **Chart 17** shows that 22% of the sample consider the development of an investor relator facility the activity with the more internal commitment. On the contrary, the decision for the floating capital is the less important 7% of the sample.

Table 41: IPO costs by importance

Type of cost	Average importance
Advisor	4,5
Intermediaries fees (3-7 %)	3,5
Compliance	2,75
Administration	2,5
Information system	2,5
Stock exchange fees	2,25
Investor relator	2,25
Marketing, road show	2
Underpricing	1,5
Spill-over	1
Information asymmetry	1

Source: students elaborations

Chart 16: Level of commitment by importance



Source: students elaborations

Finally in **Table 42** are reported some feedback to the open question section by the following companies:

Table 42: Answers to open questions - 3 concrete examples

Question	Company name	Answer
Q.1	SMRE SPA	<ul style="list-style-type: none"> ▪ Maggiore visibilità su scala internazionale ▪ Reperimento risorse finanziarie per crescita sostenibile ▪ Attrazione di risorse umane ad alto valore ▪ Rinegoziazione costo del debito
Q.2	Cellularline SPA	Indirettamente, tramite la facilitazione di raccolta di capitale per la SPAC Crescita S.p.A.
Q.3	Equita SPA	Negli ultimi anni ci sono stati considerevoli progressi ma, ad oggi, per incentivare il numero di quotazioni si deve ancora lavorare molto sulla semplificazione degli adempimenti. Le piccole società si trovano infatti "sommerse" da adempimenti e molte volte desistono dall'idea di quotarsi. Semplificando ulteriormente la burocrazia e i processi di quotazione si potrebbe aiutare le società ad accedere ai mercati dei capitali.

Source: students elaborations

Conclusions

In our opinion, PIRs are effective instruments. They were able to achieve the following results: **a)** to intercept Italians savings by offering to investors a new investment solution, long-term oriented and appealing in terms of returns; **b)** to channel part of those savings towards small businesses; **c)** to renew the appeal of such small companies for asset managers, increasing their liquidity and yield premia; **d)** to spread a positive “feeling” among Italian entrepreneurs about going public, especially for small and medium sized companies. Nevertheless, PIRs are far away from the legislator’s objective of sustaining the Country’s real economy, providing fresh capital to small business to boost their growth. In fact, till now, PIRs neither have proven to be capable of sustaining the development of financial markets, nor they have accomplished to offer households’ a profitable and transparent investment solution. The instrument alone, actually, is not enough; to really unchain its potential, a higher commitment from the actors involved is required. Intermediaries, should more carefully identify the companies on which to allocate the resources collected; companies should undertake more concrete growth projects and should be aware of the benefits embedded in the stock market; savers should carefully select the most appropriate PIR product. In any case, the fact that all PIR-compliant funds are open-ended, as of today, represents in our view quite a structural limitation for the instrument. In fact, a fundamental drawback of being an open-ended fund is the necessity of investing in liquid stocks. We believe that a next step after PIRs, could be the development of PIR closed-end funds specialised on SMEs, which could bear less pressure towards the short-term results.

Considering **households**, PIRs were able to nudge their wealth towards new investment solutions that are long term oriented and focused on value creation. The major part of the capital raised was invested into open-end funds, while few resources went into insurance products. Indeed, the **asset management market** reacted to the advent of the PIR with the launch of numerous 'PIR-compliant' funds. In some cases, it was the establishment of new products; in other cases, the 'reconversion' of already existing ones. As of today, the ca. 70 funds existing on the market reached a cumulative AUM of € 18.7 bn. In particular, the 40%

of the inflows was related to Capital Accumulation Plans (“Piano Accumulo Capitali), therefore highlighting investors’ propensity to continue investing over time. Instead, **the insurance industry** lagged behind with total premia of € 3.32 bn YTD. However, both the market solutions have been characterized by high fees, penalizing returns for investors. Referring to the asset management market, average returns were 0.39% in 1H 2018, with equity funds on top (1.43%) and balanced portfolio on the bottom (-0.43%). Vice-versa, ongoing charges and entrance fees ranged between (0.35% to 2.79%) and (0.00% to 5.5%), respectively. This could partially mine the profitability of the instrument for households. Indeed, the simulation we carried out showed that only in the 56% of the cases the newbie fiscal scheme has been able to outperform a Non PIR-compliant fund, proving that, actually, there is weak evidence in favour of PIRs advantages. The best products result to be the ones that can be subscribed online, thus avoiding the entrance fee. It seems that we are witnessing a principal-agent problem, characterized by a conflict of interest on the margin spilt between the principal (i.e. households) and the agent (i.e. intermediaries). In a situation in which the actors involved are conscious that their gain would be inevitably the loss of the other, the solution lays in the reduction of the information asymmetry. This could be achieved by enhancing the financial knowledge of households and by persuading intermediaries to guarantee higher transparency.

Shifting to the **demand side**, looking at the Italian SMEs, there is evidence that PIRs were able to channel a part of savings towards these domestic companies. In particular, 42% of the AUM were deployed into firms not belong to the FTSE MIB index; Exactly twice the minimum required by law to enjoy tax benefits (21%). This is a very good result that highlights a positive effort made by asset managers in the deployment of capital in favour of Small and Medium Enterprises. Going in depth, we traced investment flows for a total value of € 8.2 billion. The FTSE MIB collected the higher amount of capital (ca. € 4.7 billions). It follows the Mid cap market (ca. € 2.3 billions), the Small market with (ca. € 170 billion) and the AIM market (ca. € 78.1 millions). Instead, not listed companies collected ca. € 170 millions. If we sum together the funds invested in companies not belonging to the FTSE MIB, we obtain ca. € 2.7 billion that is equal to ca. 37%. Considering the ratios between the total funds invested in each market segment over the market segment capitalization we obtain that on average they were equal to ca. 13% with the MID segment that showed the

highest percentage 22% and small cap the lowest 9%. This highlights two criticalities: first, a liquidity issue; With the aim to guarantee to investors the possibility to withdrawal funds when needed, asset managers were forced to include in their portfolios a significant percentage of liquid stocks, in favour of the STAR segment. Second, a size issue; The ratio between fresh capital invested in the AIM market and the segment capitalization (10%) is close to the average (13%), however the capital raised on the AIM is the lowest in absolute terms. To answer the first issue, in our opinion, more appropriate instruments should be introduced. On the wave of ELTIF funds, we believe that the development of closed-end investment tools specialised on SMEs (“SME close-end Funds”) could be the best solution to the matter. Instead, pondering the second question, If AIM aggregates only small businesses, then, to attract more capital there is the necessity to engage new freshmen, hyping primary and secondary markets.

Looking at the **secondary** market it had benefit from the launch of PIRs on several vanguards. Considering returns, we observed a positive and significant premium yield for those shares useful to fulfil the 21% constraint (investments outside the FTSE MIB index). Inasmuch as volumes, where we detected on the blue chips a "cannibalization" effect in favour of other securities, especially toward those listed on AIM Italia. In 2016 the yearly average value of MIB trading volume on the Stock Exchange was 91.3%, while for 2017 was 87.7%. In light of unchanged volumes of trade, in the two years, (ca e € 630 billion), we estimated that a percentage equal to ca. 4% of turnover shifted from the blue chips to less liquid stocks. This helped to renew the appeal of asset managers to less capitalized companies, as a result they ~~that~~ increased the coverage of firms on the AIM markets.

Regarding the **primary** market, there is evidence that PIRs were able to spread a positive “feeling” among Italian entrepreneurs, and thus incentivizing the number of listings. From 2008 to 2016, there have been on average 2 IPOs every two months on the Milan stock exchange, against an average of 6 IPOs each two months for FY 2017 to 1H 2018. In particular, new IPOs on the AIM market boosted up to 24 in FY 2017, on top of 11 in FY 2016, registering a YoY growth of + 118%. In 1H 2018 the number of listing is 22. Results from the Wilcoxon-Mann-Whitney test confirm with 99% confidence that the event of PIR introduction affected the primary market in favour of new listings.

However, the satisfying success of PIRs in the first two years of life is threatened by markets turmoil. Regarding 2018, we have seen a further sequential slowdown. According to the official data of Assogestioni two decelerations were registered in PIRs' inflows: Q1 2018 vs Q4 2017 (€ 1.99 bn and € 3.34 bn, respectively) and Q2 2018 vs Q1 2018 (€ 1.35 bn and € 1.99 bn, respectively). The decelerations are linked to the country markets turmoil. The risks are numerous: investors could abandon their enthusiasm towards capital market and loosen their supply of capital; equally, entrepreneurs may decide to postpone IPOs. The combination of these two factors, together with a slow-down of market performances could even mine the survival of PIRs. After all, despite rising market volatility there are several factors which, in our view, should sustain inflows in 2019 and beyond: firstly, some issuers have only recently started selling PIR products; secondly, a number of year one subscribers have adopted Capital Accumulation Plans ("Piano Accumulo Capitali"), thus highlighting commitment on a continuous investment strategy (according to Mediolanum, 40% of inflows are related to this type of plan); finally, recent comments by Italian deputy prime minister Di Maio suggest that the government may adopt some measures to ease the investment into PIR by institutional investors, in order to support the financing of SMEs via the equity market.

In light of these considerations, we estimated that the total Potential value of the PIR market in terms of AUM in 2021 can be equal to ca. € 83.7 billion. Considering the PIRs' structure, which impose to invest at least 21% of the portfolio in national SMEs, our forecasts be confirmed, this would mean additional resources in the next 3 years of € 17.6 billions. This leave to further considerations: first, to raise such large sum of capital from households, there is the necessity to unchain all the potential of the PIR instruments and, if needed, to integrate the newbie fiscal scheme with new tools; second, entrepreneurs have to increase their awareness and as a consequence hype the number of IPOs in the future. In particular, these outcomes are strengthening by the results of our questionnaire that we prepared to be addressed to all the companies that went public on the AIM market between 2015 and 2018. In fact, all the interviewed firm identified as main obstacle to the listing the high cost bearing on the operation, but even more, they are concerned by the extremely large numbers of documents that have to be processed in order to access

financial markets. In our view, the legislator must intervene on this point to reduce the autocracy that is strangling Italians' businesses, and thus encourage IPOs procedures.

Everything considered, we believe PIRs are very effective instruments that acts as a game changer in the monolithic Italian ground. In our view, there is still space for further development of these fiscal scheme. The value of this work is that look at PIRs from several different angles, and as a matter of facts It gives a full picture of the instrument, highlighting criticalities and advantages and more importantly, it is structured in a way that allow it to be update in the future.

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