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***GEOGRAPHY  
OF  
CROWDFUNDING***

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*Questi 5 anni sono stati un lungo percorso durante il quale ho imparato molto, non solo dal punto di vista didattico, ma anche personale, attraverso un percorso di maturità.*

*Ma il raggiungimento di questo mio obiettivo è stato anche determinato dalle persone che durante tutto questo tempo mi sono state vicine e mi hanno sostenuto.*

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*A Giorgia, perchè anche se spesso siamo di pareri contrastanti, sappiamo comunque volerci bene.*

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*"Creativity is an attempt to resolve a conflict generated by instinctive biological impulses that are not discharged, therefore unfulfilled desires are the driving force of the imagination and feed the nocturnal dreams and those with open eyes."*

**Sigmund Freud**

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# Introduction

This research aims to inform readers about the new world of crowdfunding. After globalization and digitalization, we found ourselves faced with the emergence of new realities, especially in the business world and at their birth; these realities, with the passage of time, have entered the market in different ways compared to traditional companies (competitors).

One of the news concerns the crowdfunding activity; the latter is a money collection initiative intended for a project, in any context, of someone. In practice, a project is presented and described on the various platforms, to which people can decide to join through a small investment (at will).

This new way of subsidizing projects is innovative in that financial intermediaries, such as banks and insurance companies, are bypassed and therefore finding funds for their activities is easier and without limitations.

It was this last discovery that led me to the realization of this study, because through this system projects can be implemented that would have been difficult before, if not impossible to achieve. Think of projects for sick people, who would not be able to raise sufficient funds to heal themselves without this instrument of mass involvement. Or you can think of many Start-up ideas from young entrepreneurs, who, having no funds to put their project into practice, succeeded thanks to the interest of the people for that activity and their participation.

Through this study, we will lead the reader to discover the current situation of the crowdfunding market. In chapter 1, an overview of this world will be given with specific attention to the various types, its history and its literature. Secondly, we will take a global picture of the phenomenon (in Chapter 2) and also, specifically, in the various countries. To illustrate the various situations within countries, data was collected from reports from the Cambridge University, more specifically from the "Judge Business School", which divided the global analysis of this phenomenon, based on the reference continent.

Later in Chapter 3, we will focus on a more specific analysis of the phenomenon; the mission of this thesis is to go and find, through a statistical analysis, the elements (variables) that go to influence the investments in Online Alternative Finance Market. These variables, taken into consideration in the analysis, were collected from large databases: Eurostat, for the variables of European countries, and World Bank, for the remaining countries of the world.

After describing the situation in the world of crowdfunding, divided by continents, we will proceed through statistical regressions, which will highlight, possibly, possible relationships between crowdfunding investments and the variables taken into consideration. These regressions will be of two types: linear, when it will concern the analysis of a variable ( $x_1$ ) in relation to our  $Y$  (investments in

online alternative finance market); and multiple linear, for the analysis of the relationship between two possible variables ( $x_1$  and  $x_2$ ) and our reference  $Y$ .

The tool used for the regression analysis is "R-Studio", a free software for statistical data analysis.

Finally, as we shall see in the final part of the thesis and from the results, significant relationships have been found for some important variables, both for linear and multiple regressions. These results will be visible and understandable, after the various regressions have been carried out, summarized and explained in the conclusions, ie at the end of this research.



## ***I. LITERATURE REVIEW***

# 1. Crowdfunding

## 1.1 Definition

<sup>1</sup>The term “crowdfunding” was coined by Michael Sullivan in 2006; he tried to create a platform (Fundavlog) that permitted to make online donations for videoblogs project.

<sup>2</sup>“The crowdfunding draws inspiration from micro-finance (Morduch, 1999) and crowdsourcing (Poetz e Schreier, 2012), but represents its own unique category of fundraising, facilitated by a growing number of internet sites devoted to the topic.” This is an emergent field that doesn’t permit to have a complete definition of crowdfunding, because the academic and popular conceptions are evolving and changing.

For this, the concept, during few years, has been expressed in many ways based on the historical period, kind of research and also country of origin.

These are the different definitions of crowdfunding:

Definitions of crowdfunding

Author(s) (date)	Definition
Ordanini (2009)	<i>Crowdfunding is an initiative undertaken to raise money for a new project proposed by someone, by collecting small to medium-size investments from several other people (i.e., a crowd).</i>
Lambert and Schwenbacher (2010), Belleflamme, Lambert and Schwenbacher (2013 and 2014)	<i>An open call, essentially through the Internet, for the provision of financial resources either in form of donation or in exchange for some form of reward and/or voting rights in order to support initiatives for specific purposes.</i>
Lehner (2013)	<i>CF [crowdfunding] means tapping a large dispersed audience, dubbed as “the crowd,” for small sums of money to fund a project or a venture.</i>
Mollick (2014)	<i>Crowdfunding refers to the efforts by entrepreneurial individuals and groups – cultural, social, and for-profit – to fund their ventures by drawing on relatively small contributions from a relatively large number of individuals using the Internet, without standard financial intermediaries.</i>
Colgren (2014)	<i>Crowdfunding is the convergence of social media, Big Data, and cloud technologies to significantly revolutionize the means by which small and mid-sized entities (SMEs) and start-ups can access capital in a cost-effective manner.</i>
Lehner (2014)	<i>CF means tapping a large, dispersed audience dubbed as “the crowd,” for small pledges that can sum up to incredible amounts due to the sheer numbers of participants.</i>
Ahlers, Cumming, Guenther and Schweizer (2015)	<i>An umbrella term used to describe an increasingly widespread form of fundraising, typically via the Internet, whereby groups of people pool money, usually (very) small individual contributions, to support a particular goal.</i>
Belleflamme, Omrani and Peitz (2015)	<i>Crowdfunding can be seen as an open call to provide financial resources. Crowdfunding mostly takes place on crowdfunding platforms (CFPs), i.e., Internet-based platforms that link fundraisers to funders with the aim of funding a particular campaign by typically many funders.</i>

Table 1: <https://pdfs.semanticscholar.org/3a2e/f7c64aafd0a0fed358375ddbc5b039a735a3.pdf>

<sup>1</sup> <https://pdfs.semanticscholar.org/3a2e/f7c64aafd0a0fed358375ddbc5b039a735a3.pdf>

<sup>2</sup> “The dynamics of crowdfunding: An exploratory study” of Ethan Mollick, Journal of Business Venturing, published by Elsevier Inc. 2013

One of the most complete definitions is that “Crowdfunding is an alternative model for project financing, whereby a large and dispersed audience participates through relatively small financial contributions, in a purposeful project, in exchange for physical, financial or social rewards. It is usually done via Internet-based platform that act like a bridge between the crowd and the project.”

There is also another one important: <sup>2</sup>“Crowdfunding is a novel method for funding a variety of new ventures, allowing individuals founders of for-profit, cultural, or social projects to request funding from many individuals, often in return for future products or equity. Crowdfunding projects can range greatly in both goal and magnitude, from small artistic projects to entrepreneurs seeking hundreds of thousands of dollars in seed capital as an alternative to traditional venture capital investment”.

Crowdfunding project can be very different from each other because they can range from small project of private (individual project) to more big projects of entrepreneurs (like start-up), but for all it is an alternative to traditional venture capital investment.

Unlike other kind of venture financing, projects engaging in crowdfunding have a big variety of goals, not only to funding need, even in an entrepreneurial context (like marketing purpose); another difference is about the relationship between funders and founders that change by context and the nature of the funding effort.

To understand better this phenomenon, we describe its key element.

1. **Crowd**, need the contributions from a large and dispersed audience;
2. **Funding**, the contributions are in form of financial resources (i.e., money) and are usually small;
3. **Alternative finance**, on the one hand it establishes the interest of the crowd and on the other can be a threat to professional investment for its disintermediation nature;
4. **Models**, the crowd can receive a kind of reward, like voting rights, a share of equity and so on;
5. **Purpose**, fund has a specific purpose, for example cultural, social or for-profit purpose;
6. **Online**, the crowdfunding can be offline or online; but since the birth of online crowdfunding, like Kiva or Kickstarter, the researchers are interested in this new phenomenon.

<sup>3</sup>This new method of funding entrepreneurial ventures has some differences from venture capital funding. First, it is not oligopolistic, but democratic. Second, as opposed to tightly-knit venture capital community, crowdfunding is loosely organised. Third, unlike the close networks of Silicon Valley, in crowdfunding every communication is open, in online communities. Fourth, the current form of crowdfunding doesn't involve monitoring rights and equity.

Also, the process of crowdfunding is different.

Individuals try to public their project, with a fundraising window, and their capital raises (called goal); this public information includes a description of what they hope and is their project.

The project initiator promotes its project on social networks, to find people that support or want to support the project. If the goal is achieved, the money is trasfered to the proposer, who has no legal obbligation to the backers to complete the project.

<sup>4</sup>This process of directly financing over the Internet is growing fast.

In a first moment, the crowdfunding was using on social media, like mailing list or other social networks online; then, with the maturity of Web 2.0 technologies and the success of the crowdsourcing, new and dedicated platform that involves project owners and backers to improve the information and the transaction.

This two kind of people are parties in this two-sided market, with the crowdfunding's platform as an intermediary (Rochet and Tirole, 2003).

Acting on both sides of the market then is a peer economic phenomenon that during the time didn't have the right attention (still today), and the current literature doesn't succed in describing the key characteristic of this phenomenon. Infact, this important area of entrepreneur activity and the legislation of government is understudied, also if this phenomenon continues in rapidly advancing and changing the traditional rule of financing for the firms.

Something so important about the crowdfunding is that it can resolve the geographic dispersion of investors. The online platforms can help to reduce the market frictions for the geographic distance, normally associated with financing early stage projects.

<sup>5</sup>An entrepreneur or a private can decide to use different kind of crowdfunding's methods and this decision depends on product/service or goal to grow.

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<sup>3</sup> "Steps away by the crowd? Crowdfunding, Venture Capital and the Selection of Entrepreneurs", of Ethan Mollick, The Warthon School of the University of Pennsylvania

<sup>4</sup> "Playing both sides of the market: success and reciprocity on crowdfunding platforms of "David Zvilichovsky, Yael Inbar and Ohad Barzilay", Version of September 2015.

<sup>5</sup> <http://web.startups.com/library/expert-advice/types-of-crowdfunding>

## 1.2 Crowdfunding's Types

“Just like there are many different kinds of capital round raises for businesses in all stages of growth, there are a variety of crowdfunding types”.

There are three primary types:

- **Donation-based crowdfunding**, in which there is not the goal of financial return to the investors. Example of this can be fundraising for medical bills, disaster, charities and so on.
- **Rewards-based crowdfunding**, in which people contribute to the project having back a “reward”; but it’s still considered a subset of the donation-based because there is not a financial or equity return. This kind of crowdfunding is a good option for small business or creative projects. It is not a “fundraising magic bullet” or a “set and forget” approach; the founders succeed in attracting backers and raising the capital because they have good product/service and they succeed in sharing it with enough people, anticipating the specific need of them.
- **Equity-based crowdfunding**, in which the contributors can become part-owners of a company by trading capital for equity shares. Different from the other two kinds in this type of crowdfunding the contributors receive a financial return and at the end they also receive a share of the profit (dividend or distribution). This approach is perfect for companies that want to raise more capital than the rewards-based (normally a capital higher than 50k) and for reason this this method is more complicated and difficult than the other. There is also the problem that it is a new funding methods and that the regulations and the rules are evolving so “it can be a little tricky to navigate”.
- <sup>6</sup>In addition to these three, there is also other types like the **Peer-to-peer lending**, in which “the crowd lends money to a company with the understanding that the money will be repaid with interest.”; it is similar to a traditional borrowing by the bank, but you borrow not only from one investors but many of them.

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<sup>6</sup> [https://ec.europa.eu/growth/tools-databases/crowdfunding-guide/what-is/explained\\_en](https://ec.europa.eu/growth/tools-databases/crowdfunding-guide/what-is/explained_en)

There are also other types, like we can see in this Table 2:

Alternative Finance Model	Definition
P2P Consumer Lending	Individuals or institutional funders provide a loan to a consumer borrower.
P2P Business Lending	Individuals or institutional funders provide a loan to a business borrower.
Invoice Trading	Individuals or institutional funders purchase invoices or receivable notes from a business at a discount.
Equity-based Crowdfunding	Individuals or institutional funders purchase equity issued by a company.
Reward-based Crowdfunding	Backers provide finance to individuals, projects or companies in exchange for non-monetary rewards or products.
Real Estate Crowdfunding	Individuals or institutional funders provide equity or subordinated-debt financing for real estate.
P2P Property Lending	Individuals or institutional funders provide a loan secured against a property to a consumer or business borrower.
Balance Sheet Business Lending	The platform entity provides a loan directly to a business borrower.
Donation-based Crowdfunding	Donors provide funding to individuals, projects or companies based on philanthropic or civic motivations with no expectation of monetary or material return.
Debt-based Securities	Individuals or institutional funders purchase debt-based securities, typically a bond or debenture at a fixed interest rate.
Balance Sheet Consumer Lending	The platform entity provides a loan directly to a consumer borrower.
Mini-Bonds	Individuals or institutions purchase securities from companies in the form of an unsecured retail bonds.
Profit Sharing	Individuals or institutions purchase securities from a company, such as shares or bonds, and share in the profits or royalties of the business.
Balance Sheet Property Lending	The platform entity provides a loan secured against a property directly to a consumer or business borrower.

Table 2: Expanding Horizons, The 3th European Alternative Finance – Industry Report” of “University of Cambridge (Judge Business School” with the support of “BBVA” and “CME Group Foundation.

## ***II. GEOGRAPHY OF CROWDFUNDING***

# 1. European Online Alternative Finance Market

## 1.1 Europe

After talking about crowdfunding in general, we try to make a more focused analysis about the situation of the most important country of the world for alternative finance's volume.

We start this analysis from the situation of Europe and its most important country.

“In 2016 the online alternative finance market continued to grow across Europe”.

The market volume increased by the 41% annually from € 5.431 million in 2015 to € 7.671 million in 2016.

The UKs represent the 73% of all European volume, but at the same time when the UK is included in volume statistics the rate of growth of the rest of Europe grows more strongly.

For this reasons in the next data about Europe, UK is not included but we will talk more about it later.

<sup>7</sup>“In 2016 the online alternative finance market continued to grow across Europe”.

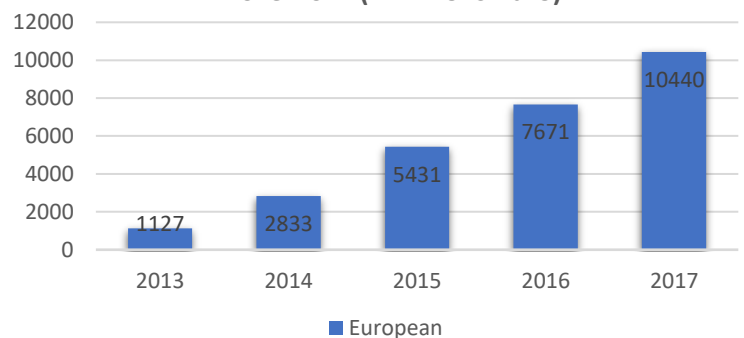
The market volume increased by the 41% annually from € 5.431 million in 2015 to € 7.671 million in 2016.

Instead in 2017 the online alternative finance market grew again and arrived to more than € 10 billions.

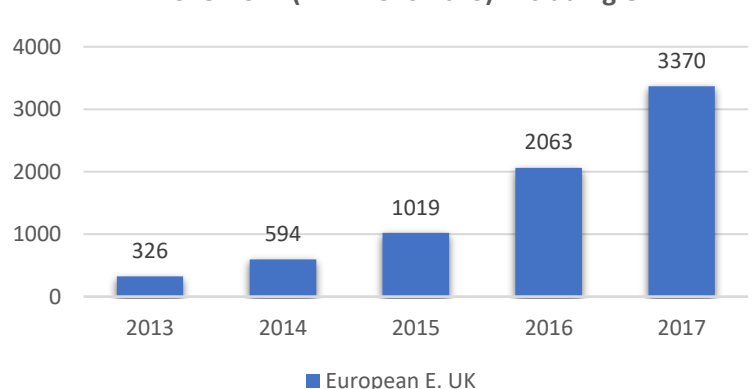
The UKs represent the 73% of all European volume, but at the same time when the UK is included in volume statistics the rate of growth of the rest of Europe grows more strongly.

For this reasons in the next data about Europe, UK is not included but we will talk more about it later. Infact, for example we can see the different in 2017 with UK and without, respectively € 10 billion and € 3 billion.

**Graphic 1: European Online Alternative Volumes 2013-2017 (in millions-Euro)**



**Graphic 2: European Online Alternative Volumes 2013-2017 (in millions-Euro) Excluding UK**



<sup>7</sup> Expanding Horizons, The 3th European Alternative Finance – Industry Report” of “University of Cambridge (Judge Business School” with the support of “BBVA” and “CME Group Foundation.



Compared to America and Asia, Europe is smaller but has a more constant annual growth, 85% annually from 2013 to 2016. In the Americas, the United States have the 98% of the volume and they grow of 22%. In



Figure 1: Total volume in Alternative Finance Market, in Europe

the Asia, China accounts for the 99% for the volume.

Instead in Europe there is no country that counts so much of the market volumes, in fact we can see that the sum of France, Germany and Netherlands is the 47% of all the volume (excluding UK).

<sup>7</sup> From a research of Cambridge University about the Alternative Finance in Europe, we can understand better the situation of each country and their market volumes about Online Alternative Finance:

UK comes first and then arrive France, Germany, Netherlands,

Finland and Italy (like in the Figure 1). The increasing of the countries that participates to the research suggests that the Online Alternative Finance is growing in Europe, which is in turn distributing volumes in all the reason, like the Nordic, Baltics and Benelux (Netherlands, Luxembourg and Belgium). The same study research analyses also 14 different alternative finance models and their different market volumes and market share. “P2P Consumer Lending accounted for 34% of European Alternative Finance volume, followed by P2P Business Lending (17%), Invoice Trading (12%), Equity-based Crowdfunding (11%) and Reward-based Crowdfunding (9%).” The P2P consumer lending remains the most important not only in Europe, but also in Asia and America; in 2016 equity crowdfunding and premium-based crowdfunding had a market share decline of 11% and 9% respectively, but the market volumes grow in both cases (37%).

To do a sum of 2016, all models have a positive annual growth:

- P2P Consumer Lending grew by 90% (from € 366m to € 687m);
- P2P Business Lending grew from € 212m to € 350m;
- Balance Sheet Business Lending grew from € 2m to € 59m (2416%), and Profit Sharing from € 1m to € 8m (1449%);
- The Real Estate Crowdfunding grew of 306%, Invoice trading (213%) and Debt-based Securities (113%);
- Equity-based Crowdfunding from € 159m to € 219m (37%);
- Reward-based Crowdfunding from € 139m to € 191m (37%);

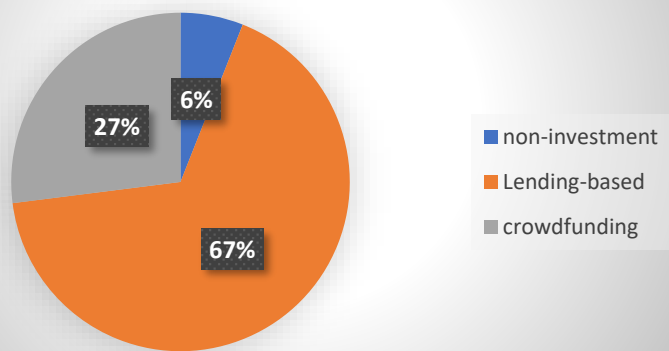
Alternative Finance Model	Definition	2016	Market Share
P2P Consumer Lending	Individuals or institutional funders provide a loan to a consumer borrower.	€ 696.81m	33.8%
P2P Business Lending	Individuals or institutional funders provide a loan to a business borrower.	€ 349.96m	17.0%
Invoice Trading	Individuals or institutional funders purchase invoices or receivable notes from a business at a discount.	€ 251.87m	12.2%
Equity-based Crowdfunding	Individuals or institutional funders purchase equity issued by a company.	€ 218.64m	10.6%
Reward-based Crowdfunding	Backers provide finance to individuals, projects or companies in exchange for non-monetary rewards or products.	€ 190.76m	9.2%
Real Estate Crowdfunding	Individuals or institutional funders provide equity or subordinated-debt financing for real estate.	€ 109.45m	5.3%
P2P Property Lending	Individuals or institutional funders provide a loan secured against a property to a consumer or business borrower.	€ 95.15m	4.6%
Balance Sheet Business Lending	The platform entity provides a loan directly to a business borrower.	€ 59.13m	2.9%
Donation-based Crowdfunding	Donors provide funding to individuals, projects or companies based on philanthropic or civic motivations with no expectation of monetary or material return.	€ 32.40m	1.6%
Debt-based Securities	Individuals or institutional funders purchase debt-based securities, typically a bond or debenture at a fixed interest rate.	€ 22.85m	1.1%
Balance Sheet Consumer Lending	The platform entity provides a loan directly to a consumer borrower.	€ 16.74m	0.8%
Mini-Bonds	Individuals or institutions purchase securities from companies in the form of an unsecured retail bonds.	€ 10.16m	0.5%
Profit Sharing	Individuals or institutions purchase securities from a company, such as shares or bonds, and share in the profits or royalties of the business.	€ 8.36m	0.4%
Balance Sheet Property Lending	The platform entity provides a loan secured against a property directly to a consumer or business borrower.	€ 1.00m	0.05%

Table 2: Expanding Horizons, The 3th European Alternative Finance – Industry Report” of “University of Cambridge (Judge Business School” with the support of “BBVA” and “CME Group Foundation.

- Donation-based Crowdfunding from € 22m to € 32m (49%).

In Europe, a key priority is the health and grow of the SME sector. For this kind of company there is the problem that the business development is reduced for the inability to access appropriate levels of financing. In this year Alternative Finance is a solution to this problem for start-up and medium-sized company.

**Graphic 3: % of alternative online finance market SME**



In 2006, 14521 companies raised about € 1.126m by using Online Alternative Finance:

6% from non-investment models like reward and donation crowdfunding; Lending-based platforms the majority volumes (67%), for example the € 349,96m for the P2P Business Lending; The 27% or the crowdfunding models like equity crowdfunding and real estate

crowdfunding. At the end of this study research they talk also about “The Average Deal Size” by Alternative Finance Model.

We talk about 2016 and 2017.

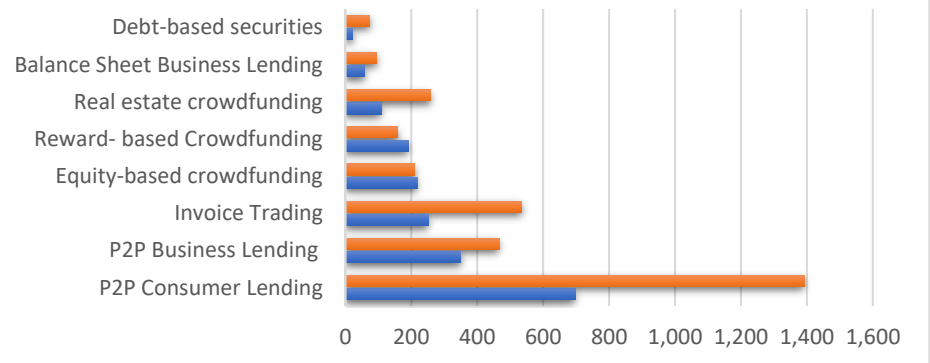
<sup>7</sup>The result is that, the P2P Consumer Lending has the highest average deal size by model in all Europe (€ 697 million of euro). The real estate crowdfunding arrives to € 109 million;

this is a surprise because the sector of real estate and property development is a more capital - intensive sector.

The Invoice Trading, instead, was the second largest with € 252 million euro.

The Equity-based crowdfunding raised like € 219 million; the larger average deal sizes denoted in certain jurisdictions (Like Nordics, Benelux and so on) suggest that this model is used not only by start-up or early

**Graphic 4: Volumes of different crowdfunding model in Europe 2016-2017 (millions-Euro)**



Orange = 2017; Blue = 2016

stage company, but also by more established firm. The Average Deal Size for debt-based securities grew to € 23 million of euro; Balance Sheet Business Lending model grew to € 59 million; P2P Property Lending has an average deal size of € 95 millions; the Reward- based Crowdfunding model also grew (€ 191 million). The start up financing is not only available for the venture capital and super rich individuals, but also for everyone else.

For this reason, there are different types of crowdfunding platform in every European country.

**The best 15 in Europe are this:**

<sup>8</sup>“Equity crowdfunding has enabled small time investors to diversify their portfolios and gain ownership in high growth startups, leveling the playing field.”

The continued growth of the crowdfunding platform need a legal framework and a rating system to judge the numerous platform.



Figure 2

As mentioned before, an important key for the continuous development of crowdfunding platform is the legal situation about this phenomenon.

<sup>9</sup>Only 11 of the 28 Member States have developed a specific regulation about Crowdfunding (Austria, Belgium, Finland, France, Germany, Italy, Lithuania, Netherlands, Portugal, UK and Spain).

But there is some difference from the bylaw of the countries. In Italy, Belgium, France, Germany and Spain regulation has been shaped by exemptions.

In Netherlands, Portugal and UK this discipline is delegated to the supervisory and control authorities of financial market, which can introduce the administrative measurement for the good operation of collective financing. Instead, Austria, Lithuania and Finland introduce a “Crowdfunding Act”: the purpose was to develop a regulatory system of SME’s financing, was for the management of the platform and for the introduction of special exemptions to current legislations.

Most of the time in countries like France and Italy the introduction of the regulation allowed a significant exponential growth of the phenomenon.

In most Member States, where a specific crowdfunding regulation doesn’t exist, is applied the legislation of financial markets.

Trying to create a single capital market, the European Commission creates the “Regulation on European Crowdfunding Service Providers (ECSP) for Business”.

This regulation and <sup>10</sup>“... its accompanying Directive amending MiFID II – proposes a voluntary EU regime for lending-based and equity-based crowdfunding service providers (i.e. platforms).”

<sup>8</sup> <https://crowdsourcingweek.com/blog/top-15-crowdfunding-platforms-in-europe/>

<sup>9</sup> <https://www.crowd-funding.cloud/it/normativa-europea-403.asp>

<sup>10</sup> <https://kreab.com/blog/crowdfunding-new-rules-to-benefit-platforms-businesses-and-investors/>

<sup>10/b</sup> <http://anasf.it/mifid-ii-la-direttiva>

<sup>10/b</sup>MIFID 2 is one of the strongest directions towards financial intermediaries.

In particular, it should extend the aim of application of the directive to unregulated financial instruments, and will also cover those who currently operate on different financial markets, including particular transactions, such as "over the counter" and "commodities".

MiFID 2 will bring important changes along the entire chain of financial institutions.

Internally, MiFID 2 will affect:

strategic level, conditioning the chosen business methods as well as the "housekeeper" models;

at the operational level, requiring important interventions on processes, procedures and technological infrastructure.

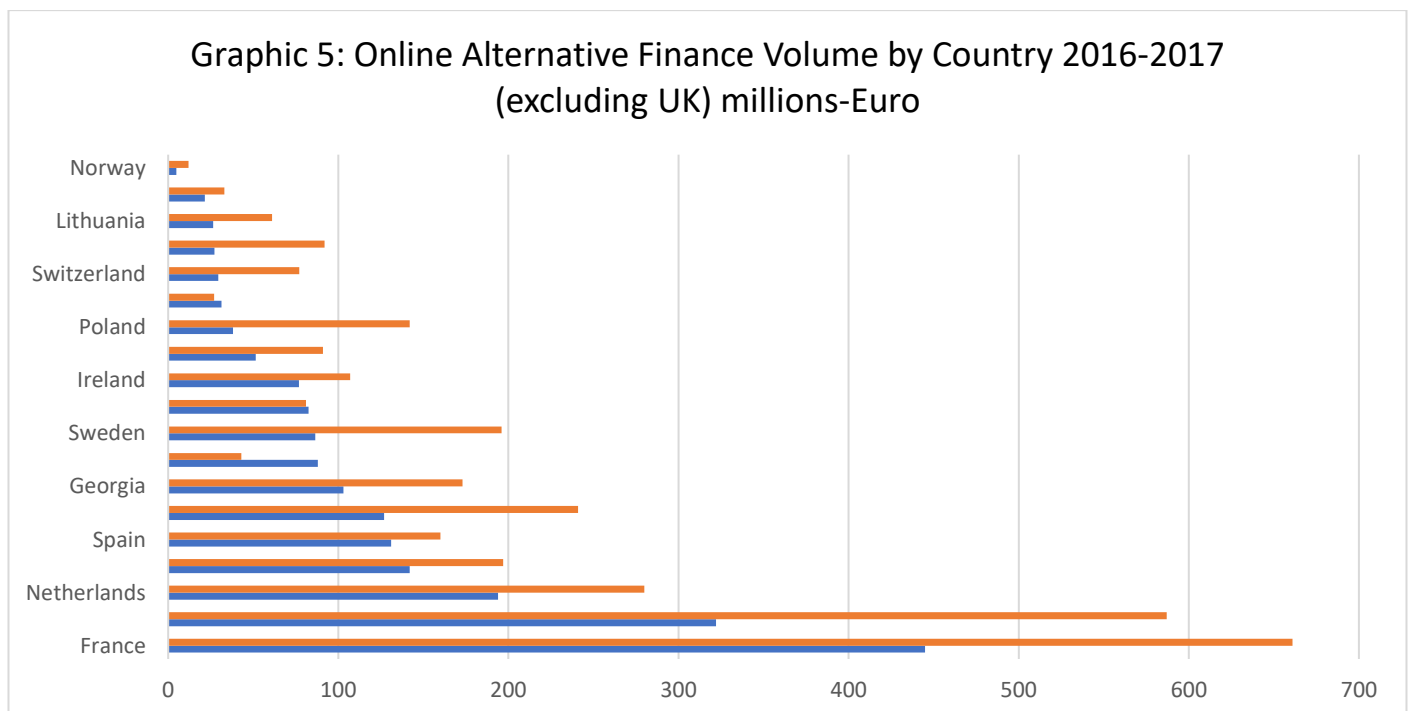
The most significant impact outside the investment companies will be on the way the company interacts with the markets, with the customers and all those involved in the transactions.

The target of this operation is twofold: from one hand, enabling crowdfunding platform to operate accross the EU, with a good system of passporting; from the other hand, building investor trust and try to protect the platforms and investors with clear regulation.

Another point with this paper is about the authorisation and supervision of platforms, and many members of the Commision decide to give this role to the NCA (National Competition Authorities), like Lead Supervisor.

Now we go to introduce the best 5 countries and the situation of Italy for Online Alternative Finance market volumes.

<sup>7</sup>This is the situation in Europe for Online Alternative Finance Volume by Country, in milion of Euro (Excluding UK):



*Orange = 2017; Blue = 2016*

Finally, we consider the Alternative Finance Market Volumes per capita of 2017, showing in the grafic 5.1 also the difference with the previous year, the 2016.

The first country is the UK with the highest volume per capita with 107,04.

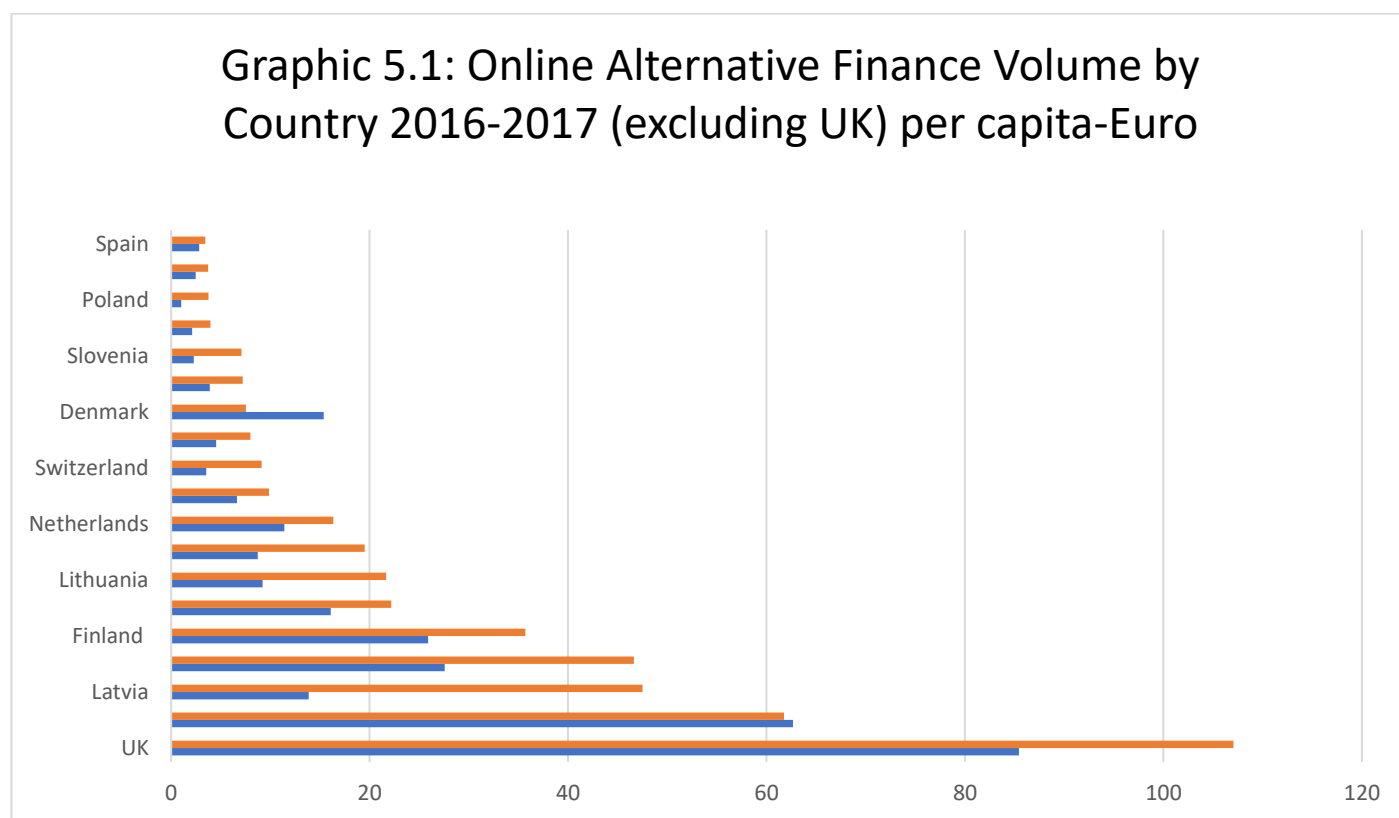
About France and Germany, they slipped down to the 10<sup>th</sup> and the 14<sup>th</sup> spots with respectively 9,85 and 7,20 euro; this happens also if both country have a high growth rates per capita of 48% and 85%. This shows us that <sup>11</sup>“the countries that reported the highest total volume were not necessarily the leaders in per-capita terms”.

After a great reformer, also some of the countries of Eastern Europe have the highest volumes per capita: Estonia (2<sup>th</sup>) with 61,76; Latvia 47,51; Georgia 46,62.

Then about the nordics, Finland with 35,7, Sweden with 19,5 and Denmark with 7,53 (decreased from the 15,36 of 2016).

As concerned, the other countries we have: Ireland with 22,19, Lithuania with 21,68, Netherlands with 16,34, Switzerland with 9,11, Belgium with 7,99 and Slovenia with 7,07.

Under the 5 euro volumes per capita there are 4 countries: Italy, Poland, Austria and Spain with respectively 3,97, 3,75, 3,74 and 3,45.



*Orange = 2017; Blue = 2016*

<sup>11</sup> “The 4th European Alternative Finance Industry Report – Shifting paradigms” of November 2018 of “Cambridge Center for Alternative Finance” with the support of “CME Group Foundation”

After doing a picture of this phenomenon in Europe in general, now we go to analyze specified the volumes, the model, the main platform and the regulation of the first 6 countries in Europe: United Kingdom, France, Germany, Benelux (Netherlands, Belgium and Luxembourg), Nordics (Denmark, Sweden, Norway, Iceland and Finland) and Italy.

## 1.2 United Kingdom

We said that the UK, in 2017, represents the 73% of all European volume.

<sup>7</sup>In 2015 the volume market of UK arrives to £ 5.608 milion; France and Germany, the second and third arrive to respectively £ 444 and £ 322 milion.

So, the UK represent a single market that it is bigger in volume than the summit of the other rest of the country.

Think also that in 2017 the online alternative finance volumes raised over than £ 7 billions.

For this we decide to talk separately about this country, and not before with the rest of the country that they, for volume, can't compete with UK.

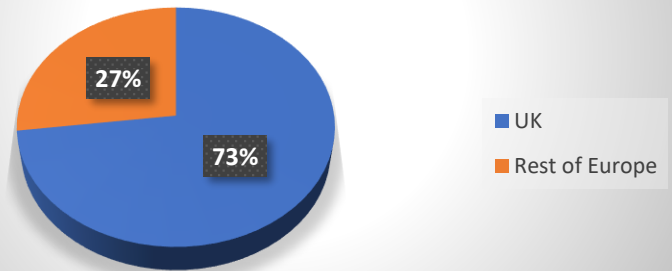
<sup>12</sup>“The Cambridge Centre for Alternative Finance (CCAF) and its research partners have been tracking the evolution of the online alternative finance market in the UK since 2011.”

From 2011 to 2017, the Online Alternative Finance have a total of £ 17.2 billion in funding; then also in 2017 there was a market growth of alternative finance (the seventh consecutive year) with a volume of £ 6.19 billion with the online alternative finance market growing by 35.2%.

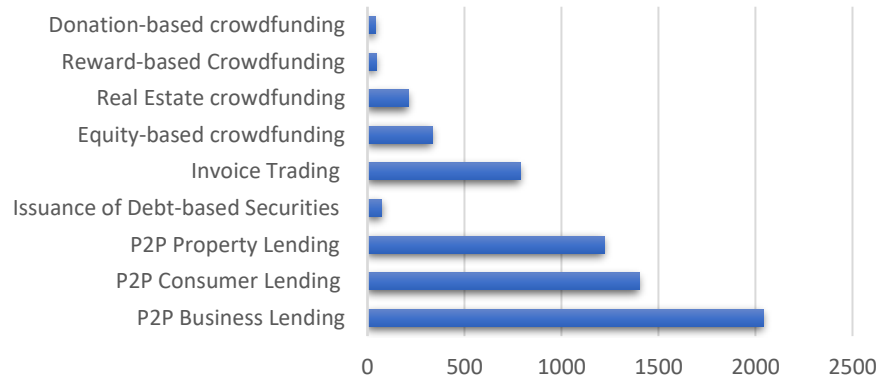
The most volume of transaction are debt-based and equity-based models (that create financial return); instead the Donation-based and the Reward-based Crowdfunding models, that they represent a little part of the total.

The P2P models represent the majority of the transactions, in 2017. The P2P Business Lending (the largest alternative finance model) with £ 2.04 billion, the P2P Consumer Lending with £ 1.4 billion and the P2P Property Lending with £ 1.22 billion. Issuance of Debt-based Securities dropped by 9%, from £ 79 to £ 72

**Graphic 6: % of online alternative market of UK respect to rest of Europe**



**Graphic 7: Online Alternative finance market volumes of UK 2017(millions-£)**



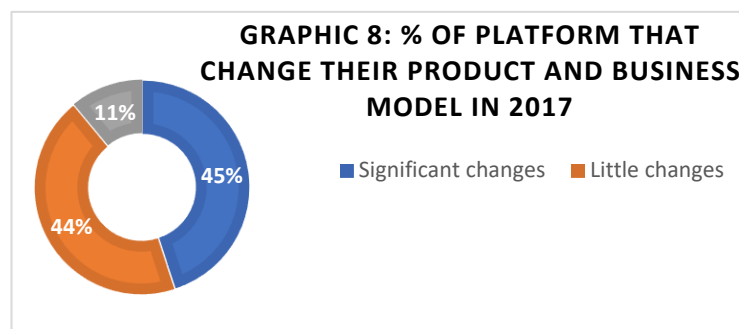
<sup>12</sup> The 5th UK Alternative Finance Industry Report” of November 2018 of “Cambridge Center for Alternative Finance” with the support of “CME Group Foundation”



million, instead the Invoice Trading arrives to £ 787 million. The Equity-based crowdfunding arrived to £ 333 million with an increase of the 22% while the Real Estate crowdfunding score the £ 211 million with surprising growth of 197%, the highest year-on-year growth rate. About the non-investment model, the Reward-based Crowdfunding arrived to £ 44 million (also if the next year was £ 48 million) and the Donation-based crowdfunding accounted for £ 41 million.

In 2017 approximately the 68% of all the alternative finance market volume (like £ 4,2 billion) was collected for start-ups and SME in all UK and a total of 29.500 firms used alternative finance model (in 2016 was 33.000, so a decrease of 11%).

Debt-based models became the first resource with £ 3,8 billion to 26000 firms, instead the equity-based models arrive to £ 349 million of funding to 494 firms.



In 2017, while the alternative finance sector continued to grow, each platform has continued changing and modifying their products and their business models; the 45% of the platforms made significantly changes, the other 44% made little changes and the 11% made no significant

changes.

Now we go to analyze the best crowdfunding platforms in UK; we will take the best three platforms and analyze them.

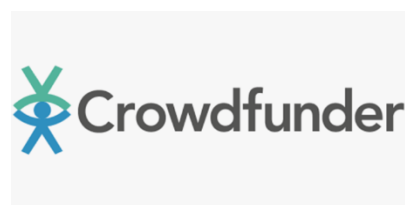


Figure 3

<sup>13</sup>The UK's largest crowdfunding platform is "Crowdfunder UK"; the best skill of this platform is to connect projects with communities and you have also the freedom to raise from £ 200 to £ 2.5m as an individual, charity, start-up and so on.

The most activity detected are charity crowdfunding, rewards crowdfunding and big impact crowdfunding. This platform is involved in more sectors: Fundraising, Business, Community, Crowdfunding, Community Shares, Grants, Funds and Community; then they also raised over £ 60 millions of sterling for a lot of different project.

Then there is "Bloom Venture Catalyst" a reward crowdfunding platform, different from the first; to maximise the impact of each fundraising campaign, the platform uses a dedicated community manager.

Bloom is a new form of commerce and patronage, where you cannot use like place of investment or lending.



Figure 4

<sup>13</sup> <https://uncommon.co.uk/the-leading-uk-crowdfunding-platforms/>



This platform is in many sectors like Art, Community, Design, Education, Enterprise, Film, Music, Sport and so on.



Figure 5

The last Platform is “Seedrs that is an “Equity crowdfunding done properly”.

<sup>12</sup>“The platform provides support during the entire fundraising process and takes care of all documentation, admin and payment for both investors and businesses.”

It is specialized in Equity crowdfunding and 2012 was elected like first equity platform that has a regular approval from the Financial Conduct Authority (FCA).

In 2018 this platform raised £ 195 million, almost like the VC in Italy, with 72 thousand investments (500 thousand from the beginning of this reality).

About the regulation in the UK, if someone want to open a crowdfunding platform need the authorization of the Financial Conduct Authority (FCA), a body that regulates financial activities.

Every transaction is authorized by the Financial Services Authority. In March 2014, FCA make new rules for crowdfunding.

Alternative Crowdfunding Models According to the FCA		
Model name	FCA Crowdfunding Category	Definition
Peer-to-Peer Business Lending	Loan-based Crowdfunding	Secured and unsecured debt-based transactions between individuals/institutions and businesses with trading history; most of which are SMEs.
Peer-to-Peer Business Lending (Real Estate)	Loan-based Crowdfunding	Property-based debt transactions between individuals/institutions to businesses; most of which are property developers.
Peer-to-Peer Consumer Lending	Loan-based Crowdfunding	Debt-based transactions between individuals/institutions to an individual; most are unsecured personal loans.
Invoice Trading	Loan-based Crowdfunding	Businesses sell their invoices or receivables to a pool of primarily high net worth individuals or institutional investors.
Equity-based Crowdfunding	Investment-based Crowdfunding	Sale of registered securities, by mostly early stage firms, to both retail, sophisticated and institutional investors.
Equity-based Crowdfunding (Real Estate)	Investment-based Crowdfunding	Direct investment into a property by individuals, usually through the sale of a registered security in a special purpose vehicle (SPV).

<sup>14</sup>“They aim to facilitate the development of the industry in order to:

- Attract both investors and lenders;
- Protect consumers by ensuring transparency and availability of information;
- Improve the state of the UK financial system;
- Encourage positive competition in the sector.”

Debt-based securities	Investment-based Crowdfunding	Individuals purchase debt-based securities (typically a bond or debenture) at a fixed interest rate. Lenders receive full repayment plus interest paid at full maturity.
Reward-based Crowdfunding	Pre-payment or reward-based Crowdfunding	Donors have an expectation that fund recipients will provide a tangible but non-financial reward or product in exchange to their contributions. This model falls outside of FCA purview.
Donation-based Crowdfunding	Donation-based Crowdfunding	Non-investment model in which no legally binding financial obligation is incurred by fund recipients to donors; no financial or material returns are expected by the donor. This model falls outside of FCA purview.

Not all types of crowdfunding platform are regulated in UK.

The FCA adjust Equity and Loan-based crowdfunding (peer to peer lending), instead crowdfunding platforms like donation-based and reward-based is not regulated.

Tabella 3: <https://justcoded.com/blog/fca-regulations-of-crowdfunding-in-2018/>

The rules are focused to supply clear information at consumers who lend their money to evaluate risks and know better who they lend to.

So, the owner of a platform need to protect client’s money and a solution plan for any kind of problems.

Now we see some details about the regulation for some kind of crowdfunding platform.

<sup>14</sup> <https://justcoded.com/blog/fca-regulations-of-crowdfunding-in-2018/>

<sup>15</sup> About the Equity Model, now the rules and legislation are not clear so in the future there will be created a new specific and full regulation about this model; until now some platform operators make use of exemptions from the regulatory regime operate, other use the authorization of the Financial Conduct Authority (FCA), to operate like platform.

About Lending Models, the majority of this kind of platform are not signed like financial services business, because don't have a specific regulation, but like an alternative to the bank lending. The UK and the FCA they are working with an electronic system of credit, that can control and regulate effectively the kind of platform, but the debate is still open because focuses the attention on the degree of responsibility a platform should take to control individual lenders and borrowers.

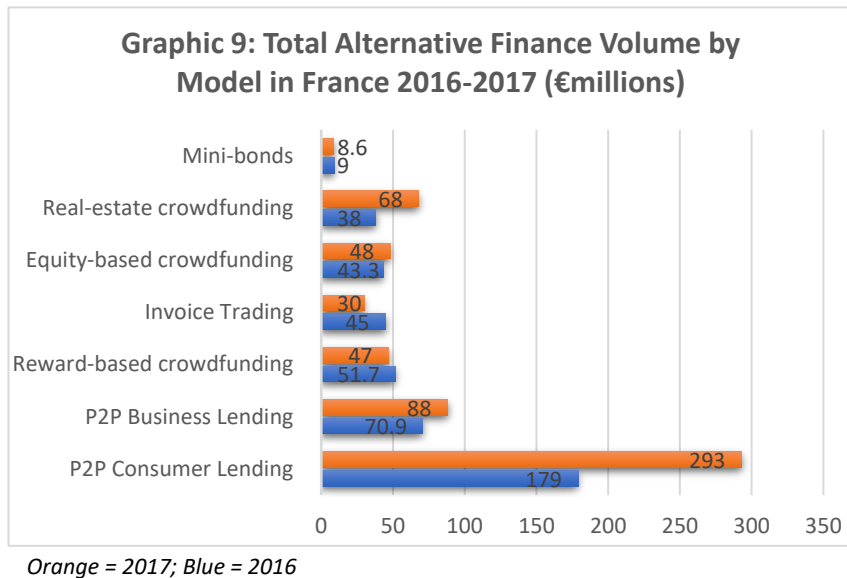
In the end, we talk about the Donation and Reward crowdfunding: this kind of platform don't involve investment so they don't need to follow the rules of the financial services of UK.

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<sup>15</sup> "Regulation of crowdfunding in Germany, the UK, Spain and Italy and the impact of the European Single Market" of "European Crowdfunding Network" in association with "Osborne Clarke"

## 1.3 France

Also in 2017, France remained the market leader in Europe alternative finance (after UK) with a grow of 40%. In 2016, it represented the 22% of all alternative finance volumes (444m of Euro), instead in 2017 grew also more and it raised over € 660 million.



About the type of crowdfunding we can say that the best model in France is the P2P Consumer Lending with € 179 millions and represents the 40% of all France volumes. In second place, there is the P2P Business Lending with € 70,9 million; the Invoice Trading model arrives to € 45 million and Mini-bonds accounted € 9 million (for the first time).

The Equity-based crowdfunding and the donation-based crowdfunding generated less volumes of the previous year: for example, the first decelerate of the 42%, with € 43,3 million. In the end, we talk about the Real-estate crowdfunding model that grows from € 12,7 million in 2015 to € 48 million in 2016 and also of Reward-based crowdfunding with € 51,7 million.

The bests platforms in France are:

1. “KissKissBankBank & Ulule wiki”, a Reward-based crowdfunding platform;
2. “Lendix, Unilend, Lendopolis and Lendosphere”, four P2P Business Lending platforms;
3. “Anaxago”, an Equity-based crowdfunding platforms;
4. “Prêt d’Union”, a P2P Consumer Lending.

The two most important crowdfunding platforms in France, Ulule, founded by Alexandre Boucherot & Thomas Grange, and Kiss Kiss Bank Bank, founded by Omblin Le Lasseur, Vincent Ricordeau & Adrien Aumont, both two kinds of Reward-based crowdfunding models.

<sup>16</sup>About the first, from 2013 to 2019 it became the best crowdfunding platform in Europe, with more than 27000 projects and 2,5 million of subscriber; it raised over 138 million of Euro and worked in a lot of sectors like Charity, Music, Fashion, Sport, Tecnology and so on.

<sup>16</sup> <https://it.ulule.com/about/ulule/>

It is also certificated by “Certified B Corporation”, a new kind of business that balances profit and purpose; they consider the impact of decision on environment, workers, community, with the mission of building a better Business/Economy.

Also, the second platform is one of the most important platform in Europe and it is also present in a lot of sectors like Food, Tech, Movies, Art, Agriculture and charity.

Then there are Anaxago and Pret d’Union, the first an Equity-based crowdfunding platforms with € 126 million collected and the second, a P2P Consumer Lending, that with a fundraising increase of € 10 million (capital invested) will use to accelerate its development.

About the regulation in France the “Autorité de contrôle prudentiel et de résolution” (ACPR) and the “Autorité des marchés financiers” create a new arrangement about crowdfunding (Ordinance 2014-559 of 30 May 2014.) that come on 1° October 2014.

The first things that change is the certification for platforms that comply with the new rules.

Then there are other rules:

- <sup>17</sup>“A platform for crowdfunding via the subscription of financial securities issued by an unlisted company must be registered in the ORIAS register as a crowdfunding advisor (CIP)”; but there is also the possibility to choose the status of investment services provider (ISP).
- In the ORIAS register the platform must be signed like crowdfunding intermediary;
- The intermediary can be inspected from ACPR at any time;
- If the website works only with donations, the platform can decide to be signed or not like a crowdfunding platform; but if it decide to do it will need to respect its rules.

In France, there is also a good consideration about the legislation. Infact if we analyze three kinds of crowdfunding models we can see that the majority of people agree that the regulamentation is appropriate and adequate. For the non-investment platforms (Reward-based and Donation-based) the 75% of people is positive, instead the 25% considers this excessive and too strict.

About Equity models the 80% is positive and the 20% not; in the end, the P2P Lending have the 64% positive, 29% negative and the last 7% say that there is not a specific regulamentation.

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<sup>17</sup> <https://acpr.banque-france.fr/en/authorisation/crowdfunding>

## 1.4 Germany

The German Alternative Finance market is strong and innovative, but there are some areas of this market that are undeveloped. It grows from € 249 million of volumes in 2015 to € 322 million in 2016; the growth rate decelerated in 2016, instead of previous year, and arrives to 29%, but also with this Germany remains the second country for volumes in Alternative Finance (excluding UK) with the 15,6% of the volumes of all European Alternative Finance market. In the 2017 the total amount in Germany arrives to € 595 million.

In 2017 the total alternative finance market volumes in Germany grew until it raised almost € 600 million with a growth of 85%, compared to 2016.

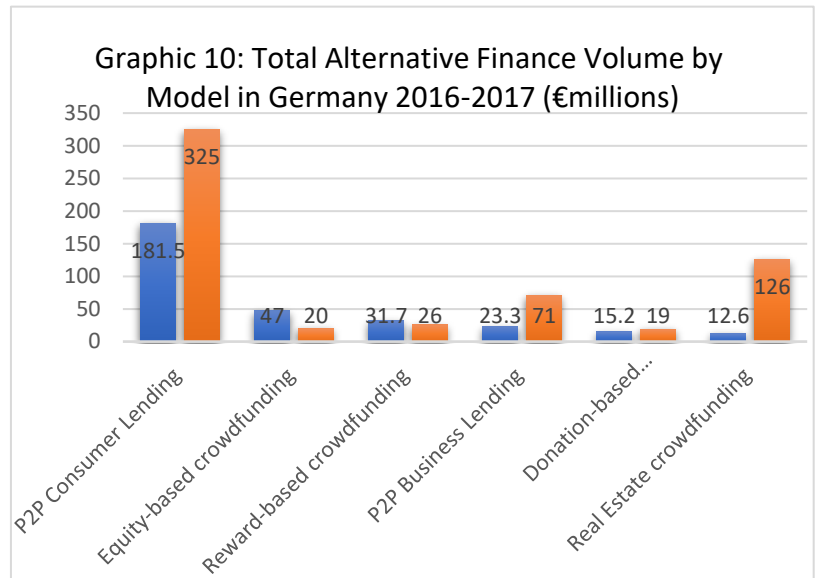
<sup>7</sup>About the kind of crowdfunding platforms, the first most used is the P2P Consumer Lending with € 181,5 million also if this decelerates in the years: infact in 2013 the amount of million was € 434,7. At the second place there is the Equity-based crowdfunding model that arrives in 2016 at € 55,5 million in 2016: from 2015 (€ 23,7 million) the volumes grow after changing the rulesthe legal framework.

The third is the Reward-based crowdfunding model with € 31,7 million of volumes in German alternative finance market. At the forth place there is the P2P Business Lending that has a decrease from previous years: from € 48,7 million in 2015 to 23,3 million in 2016. This happens because the P2P sector is changing a lot. In the and there are also other two models, the Donation-based and Real Estate crowdfunding model with respectly € 15,2 million and € 12,6 million.

In Germany there is a huge debate about equity-based crowdfunding, infact in 2017 there was a review of the regulamentation. This is not a good situation because the 58% of equity-based crowdfunding platforms have a negative impression about this regulation and only the 42% say that the law is good and appropriate. About Debt models the 70% have a negative perpection and only the 30% a good impression.

For non-investment platforms the situation is worst, because the 50% have a negative impression about the regulation and the other 50% say that the regulation doesn't apply to them.

<sup>14</sup>In Germany there is a more restricted regulamentation in regard to other European countries. The application of the "Alternative Investment Fund Managers Directive 2011/61/EU" in Germany with the "Capital Investment Act" makes more difficult seeking funds on crowdfunding platforms (for example projects like games or movies are likely to be completely prohibited under the German implementation of the AIFMD).



Orange = 2017; Blue = 2016

This strict regulation goes against the way of Europe to support crowdfunding platforms and there is the possibility of the impossibility in the future of the crowdfunding.

This country is an important place for crowdfunding platforms, in fact is the third country for volumes in Europe.

<sup>18</sup>With a sereach of “Für Gründer” in 2015 we can see the different volumes of the models: The Reward-based crowdfunding raised 9,8 million of euro, the P2P Consumer&Business lending with € 66,8 million and Equity-based crowdfunding € 37,3 million.

There are also some of the bests platform in Europe, like Companisco, an equity-based platform born in 2012 and Betterplace, a donation based crowdfunding platform focused on social projects. There is also Auxoney, a P2P Lending platform founded in 2007 that is the leader in Germany like crowdfunding platform, has more than 4 million members; it finances many projects in different sectors like istruction, vacation, tech, loans and so on. In summer 2015 started to have value the first law on equity crowdfunding (Kleinanlegerschutzgesetz).

There are some strict rules but in general there is optimism about it; the most important thing is that under € 2,5 millions it doesn't need a costly prospectus, instead over it the Federal Financial Supervisory Authority requires a financial assets information leaflet. Then the maximum amount for each person to invest in project is 10.000 euro; then if a person invests more than 1.000 euro the investor needs to assure that he holds 100.000 euros. There are also some trends about the platform, the Reward-based crowdfunding and P2P Lending grewed in some years and they will continue to grow until they become importants models in their country, but also in Europe, like the Equity models that is already important in Germany today.

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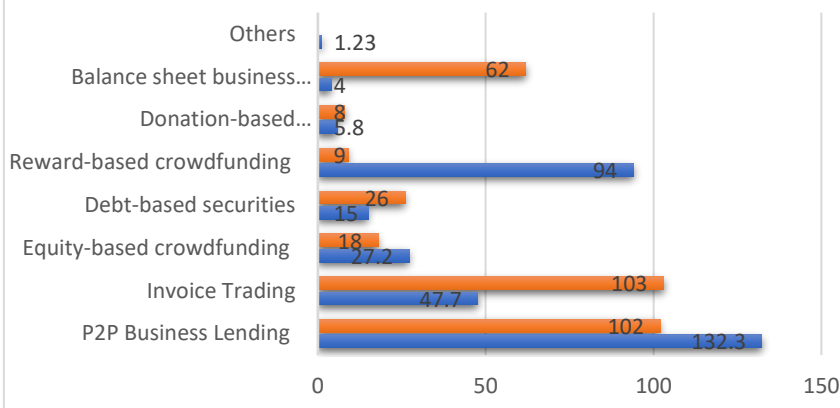
<sup>18</sup> <http://www.crowdfundinghub.eu/current-state-crowdfunding-germany/>

## 1.5 Benelux

When we talk about Benelux we talk about Netherlands, Belgium and Luxembourg but the majority of the volumes come from Netherlands, which account the 79% of the regional volumes.

This region grew by the 67% in 2016 becoming the fourth largest market for alternative finance with a total volume of € 246 million (in 2017 it raised over 372 million of euro: almost Netherlands arrived to € 280 million, Belgium to € 91 million and Luxembourg the rest).

**Graphic 11: Total Alternative Finance Volume by Model in Benelux 2016-2017 (€millions)**



Orange = 2017; Blue = 2016

There are two models that are responsible for the greatest growth and they are the P2P Business Lending and the Invoice Trading. The first generated, in 2016 € 132,3 million and they grew of the 71% from 2015 (instead in 2017 € 102 million), but this growth is based on 99,9% on Netherlands. Instead the Invoice Trading arrived to € 47,7 million based on the 98,6% of activities

in Belgium (in 2017 arrive to € 103 million).

<sup>7</sup>The Equity-based crowdfunding model arrives to € 27,2

million based on the 99.8% of regional equity crowdfunding volumes in Netherlands, because this models in Belgium decreased from € 5,9 million to 60K.

In Netherlands, there was a growth also of the Debt-based securities that arrived to € 15 million. The Reward-based crowdfunding is the only model that is evident in all three countries of the region (71% Netherlands, 28% in Belgium and 1% in Luxemburg) and accounts € 13,2 million of volume.

The last two significant models, exclusively for Netherlands, is the Donation-based crowdfunding model that represents 5,8 million of euro and the Balance sheet business lending with € 4 million.

All the other models, like Real Estate crowdfunding, P2P Consumer Lending and mini-bonds, are under € 1 million of volumes and in total arrive to € 1,23 million.

To do a summit of the volumes of crowdfunding models in Netherlands the platforms raised € 98,9 million from lending- based platforms, € 20,3 million from reward-based platforms, € 4,5 and € 4,4 million from respectively Equity-based and Donations crowdfunding platforms.

In the last 12 mounth, the alternative finance market of Benelux slowed down because there was a deficiency of regulatory framework. But in the last mounths the AFM (the Dutch regulator) and the the industry drove the government working on it. <sup>19</sup>About Netherlands, the best country for crowdfunding

<sup>19</sup> <http://www.crowdfundinghub.eu/current-state-crowdfunding-netherlands/>

volumes, we find a specific regulation for P2P Lending and Equity models, but there are not, instead, Donation and Reward- based models.

About the first two, in 2016 there was a changing of the regulation of 2014 to trying to increase the sector and improving the access of finance for SME's.

This new regulation has these features:

- The investment limit for P2P and Equity-based crowdfunding are respectively 40.000 and 80.000 euros (the double respect to the old regulation);
- The investors can maximum invest in crowdfunding projects the 10% of his/her freely available assets;
- Any of this two kinds of platform need to fill in the monitoring form on the website of AFM on a semi-annual basis;
- The crowdfunding platforms are considered like provide investment services if it is a broker between the borrower and the investors; so, for this the platform would require a license as an investment firm, that it become subject of MiFID framework.

The best platform in Netherlands are Symbid and GeldVoorElkaar.

The first is an Equity-based platform launched in 2011; this platform is one of the best crowdfunding platform in Europe, infact Symbid found more than 209 Business, more than € 29 millions funding realized and more than 53.000 registered members. The second is the largest P2P Business Lending Platform, started in 2010; this platform in 2019 arrived to raise € 155,3 million with more than 1400 projects.

<sup>20</sup>About Belgium, the second largest market in Benelux, there is a particular situation; platforms in 2015 raised 1 million by donation-based, € 6 million by reward-based, € 2,5 million by equity models and about P2P Lending the regulator doesn't permit to do yet.

The regulation is responsible of Financial Services and Markets Authority (FSMA), the authority in Belgium. For financial crowdfunding (Equity and convertible debt) there are some rules:

- Under 100.000 euros there are no limit of prospectus or of amount per investor;
- From 100.000 to 300.000 euros, there is no limit of prospectus, but there is the limit of 1.000 euros per investor;
- Over 300.000 euros, prospectus regulation applies.

These limits will be increased to align with neighboring countries; also, government and ministers start initiatives to promote crowdfunding and entrepreneurship.

The best platform in Belgium is MyMicroinvest, that is an Equity but also a Lending platform.

They offer simple investments for any kinds of company with any amount of money to invest; it has 41.211 members, that succeed to raise over € 67 millions and realize the dream of 147 companies.

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<sup>20</sup> <http://www.crowdfundinghub.eu/current-state-of-crowdfunding-in-belgium/>



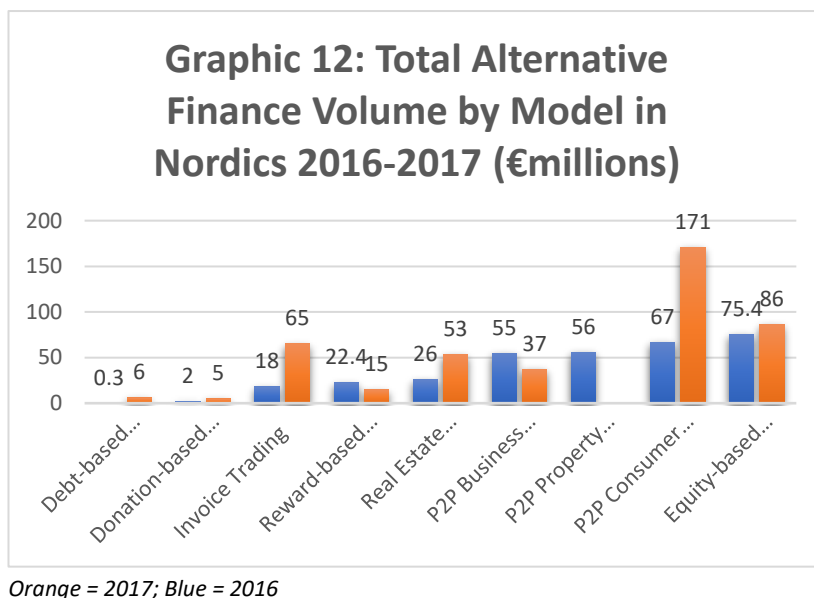
## 1.6 Nordics

The nordics market is composed by Denmark, Finland, Norway, Iceland and Sweden.

This market in 2016 grew by the 211%, that is bigger than the average four-year grow rate of 76%.

The total volumes of this market account for 220 million of euro so it represents the 15,6% of all European volumes (excluding UK). In the 2017 the situation is this:

Finland € 197 millions, Sweden € 196 million, Denmark € 43 million, Norway € 12 million and € Iceland 0,6 million.



<sup>7</sup>The most important method is the Equity-based crowdfunding that grew of the 493%, arriving to 75,4 million of euro accounting the 23% of regional alternative finance in 2016 (in 2017 € 86 million). This kind of crowdfunding grew because of Sweden (61%), Finland (38%) and Norway (1%, because of the presence of foreign platforms. Then there are the Real Estate crowdfunding model and the P2P Property Lending that represent the 25%

of regional volumes with a volume of € 82 million

(respectively € 26 and € 56 million); for this model, the leading countries are Denmark with 67% and Sweden with the 33% of regional alternative finance volumes (in 2017 the first € 53 million and the second didn't exist).

The P2P Consumer Lending model also grew of 83% with an amount of € 67 million (93% in Finland and 7% in Sweden), instead the P2P Business Lending grew of 97% with a total € 55 million of volumes (86% in Finland and 14% in Denmark).

In 2016, it existed only one model that it is present in all Nordics countries and it is the Reward-based crowdfunding with a growth of 82% every year, with an amount of € 22,4 million in 2016 (37% in Sweden, 24% in Denmark, 17% in Finland and 4% in Iceland).

The only one model that didn't grow in 2016 was the Donation-based crowdfunding (2 million of Euro) because of strict regulation.

Like other models there are the Invoice Trading, only in Denmark that grew by 56% with volumes of € 18 million; instead there is also the Debt-based securities, that come out in 2016 with less than € 1 million (0,3). In the end about the models, we can say that in the country where some models didn't exist means that were not activity reported, cause a not good regulation or don't exist.

It doesn't exist a common regulation in Nordic countries, so we need to analyze the situation for each country. The first country we analyze is Finland; in this country, the best models are the P2P Business/Consumer Lending and the Equity-based crowdfunding. Here there is a friendly regulation that has allowed development and rapid growth of crowdfunding, with the "Crowdfunding Act" (entered into force on 1st September 2016), where the government resolved a lot of obstacles, like for example "lower license fees" or "higher raising capital limit" and so on: the aim was to mitigate the rigorous interpretation made by the Finnish Financial Supervisory Authority, which fundamentally categorized all crowdfunding-based investment funds as the placement of financial instruments without a solid commitment base as defined in the "Markets in Financial Instruments Directive" (MIFID).

For this regulation Finland is the leader of the market; the only problem in this country is the donation-based crowdfunding, not so well regulated today.

About Sweden we can say that here the best models are the Equity-based and the Real Estate crowdfunding. There is a "regulatory adequacy", but there is not the specific regulation for each model. The authority permits to do their activities under the authorization and control of financial authorities; there is only the exception for the P2P Consumer Lending, after the failure of this models in 2015 (the government proceeds with extreme caution).

For Denmark, the best models are P2P Property Lending and the Invoice Trading. Here people and companies (almost the 100%) think that the regulation is accurate and satisfactory about P2P Business Lending and the Reward-based crowdfunding. The government in this years has the challenges about the P2P Consumer Lending, the donation and the Equity-based crowdfunding: for the last one there is the problem of new start-ups entering this market.

Then there is Norway, where the model of Reward-based crowdfunding is the largest. In this country, there was not a revision of the regulation for online alternative finance; we can see that the Equity-based crowdfunding is allowed but the P2P Lending is blocked.

The last one is Iceland, where as well as in Norway the largest model is the Reward-based crowdfunding. The market here is small and has a strict regulation; the reward model is prosperous, but the other models have a double problem: one is that there are restrictions for foreign investors and there is a strong dependence on the latter.

Now we consider the best platform in these four countries. The most important are Founded by me, in Sweden, and Invesdor, in Finland.

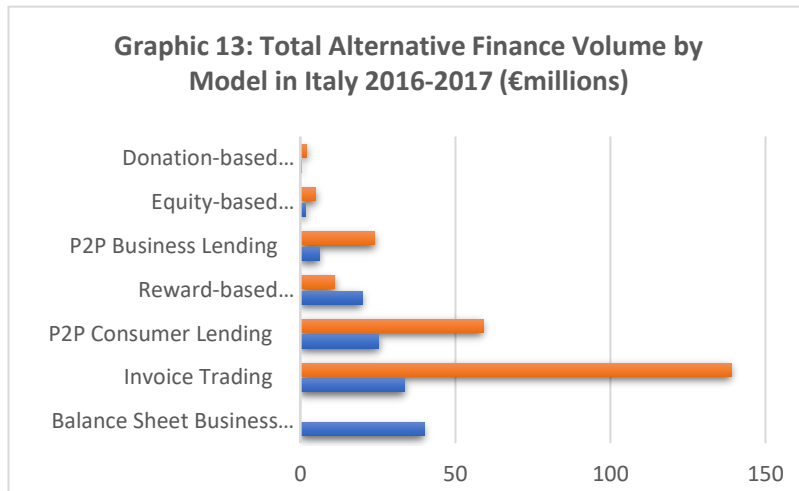
The first is an equity crowdfunding platform which raised over 1 million of euro and it has more than 250.000 members; they also receive a lot of governmental grants and awards by Tillväxtverket and Vinnova and it also works in a lot of sectors like Innovation, Service Provider, Technology, Sport and so on.

Invesdor is an Equity crowdfunding platform, that from the foundation raised over 64 millions euro; this platform in 2015 became the first equity crowdfunding platform with license MiFID in Europe. Work with a lot of different projects of different sectors like film, financial services, digital, technology and so on.

## 1.7 Italy

Italy is not included in the first 5 country of Europe, but we analyze it as well.

This country in 2016 is the sixth largest market in Europe, with a growth rate of 249% (from € 32 million to € 127 million. Italy has grown exponentially year by year: infact it grew also in 2017 and it raised over 241 million with a growth of 90%.



Orange = 2017; Blue = 2016

<sup>7</sup>About the model, in 2016, the largest is the Balance Sheet Business Lending with a volume of € 40 million and a market share of 31% (in 2017 it didn't exist). It is not strange that also the P2P Business Lending grew of 860% with a volume of € 6,1 million, instead the Invoice Trading grew about 756% with a volume of € 33,6 million (in 2017, it is the first with € 139 million).

At the third place after Balance Sheet and Invoice Trading, there is the P2P Consumer Lending with € 25,3 million in volume. The Reward-based crowdfunding model also grew from € 8,9 to € 20 million and in 2017 decreased to € 10,7 million.

In the end, there are also the Equity-based and the Donation-based crowdfunding respectively € 1,7 and € 0,4 million. For the first it happens that no so many platforms of this kind took part in the survey so the number of volumes of Equity-based crowdfunding platforms can be more in reality.

About the second, it decreased from € 2,3 million in 2015 to € 0,4 million in 2016 as well and in 2017 it increased and arrived to € 2,3 million.

The best platform in Italy is DeRev, that is a donation and reward-based platform, founded in 2005, one of the first in Europe. On this platform until now members participated with more than 3 million of euros in many sectors, Art and Culture, No-profit, Sport, Civil crowdfunding, Technology and start-up.

<sup>21</sup>Now we see the features of regulation in Italy:

- No regulation for donation and reward-based crowdfunding; it doesn't need also to be licensed and for the first there are also tax advantages;
- The Lending based model is regulated so well and the law says that platform need to be licensed by the Bank of Italy; for this kind of platform lenders can't choose the borrowers;
- The Equity crowdfunding is regulated by Consob and the law; they are considered as financial intermediaries and so they are monitored by the Consob that need to authorize the platform;

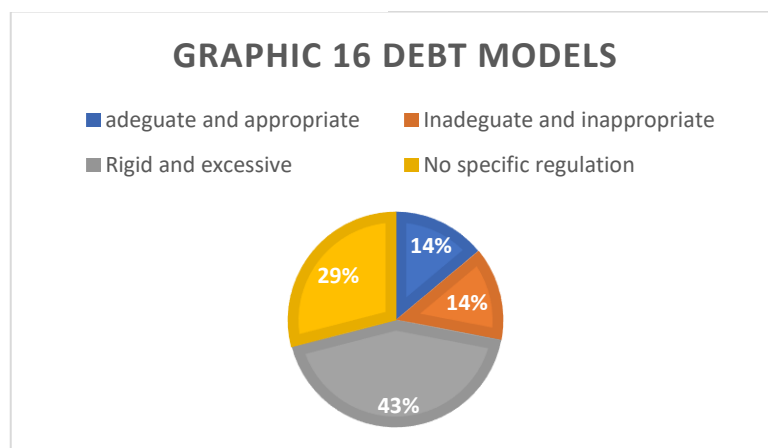
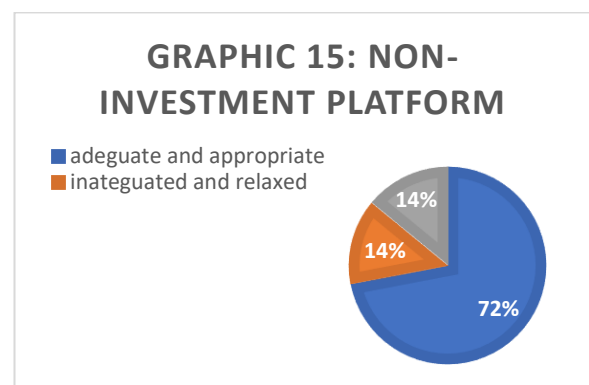
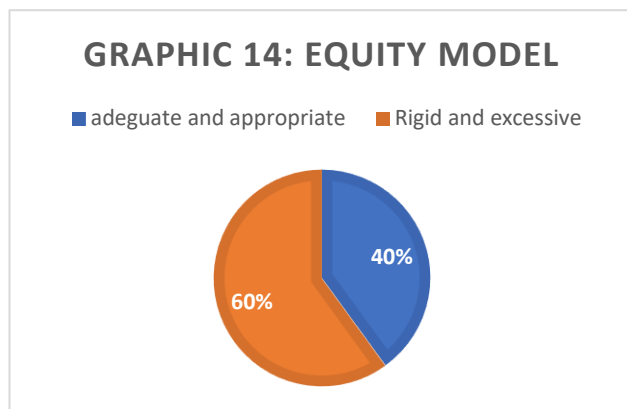
<sup>21</sup> <http://www.crowdfundinghub.eu/current-state-crowdfunding-italy/>

- All platforms need to respect the E.U. Markets in Financial Instruments Directive (MiFID), in which is written that platforms must ask the potential client to provide information regarding his/her knowledge and experience in the investment field.

A big problem in Italy are the start-ups that have a limited possibility to collect online funds.

Other limitations come from the Consob that, at the beginning of online offer, requires a subscription of 5% of the share capital. This two limitations go against the principles and the purpose of the European Commission about crowdfunding regulations. If the AIFMID was be applied to crowdfunding platforms, it will be impossible a good cost/benefit relation.

As concerned the consideration of platform about regulation we have this situation:



So, we saw the first 5 countries and Italy, so we finish to analyze the situation of online alternative finance in Europe and in the next chapter we go to talk about the Americas analysing 3 areas: United States of America, Canada and Latin Americas and Caribbean regions (more specifcly Brazil, Argentina, Mexico, Columbia and so on).

## 2.Americas Online Alternative Finance Market

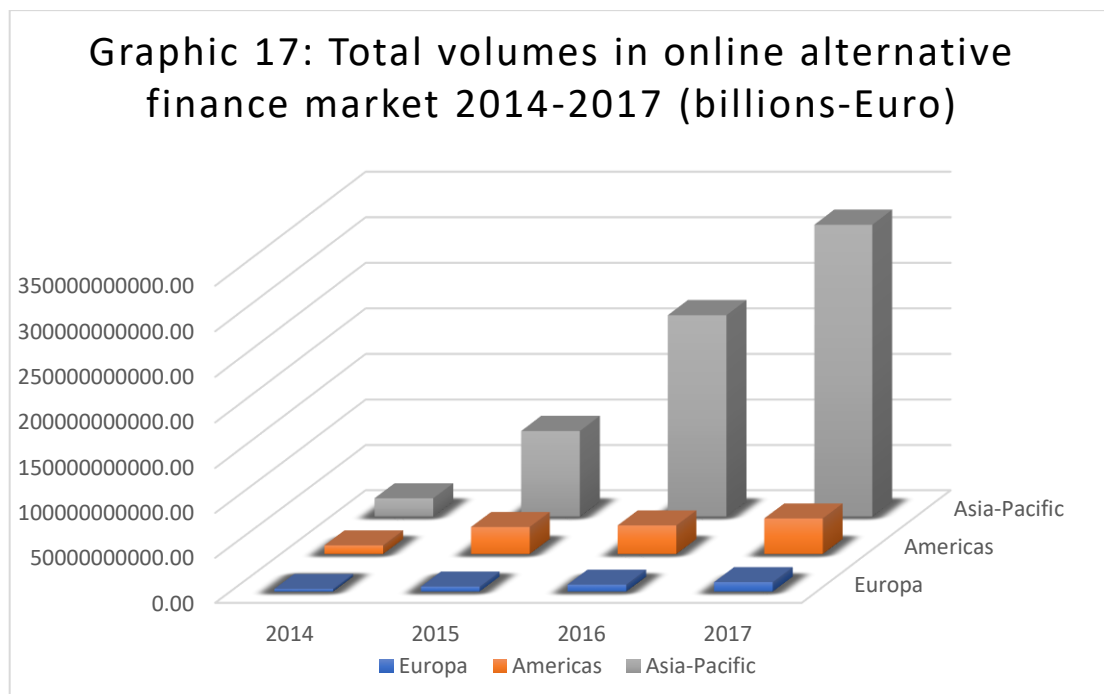
### 2.1 Americas

After talking about European alternative finance market, we talk about this market in the Americas.

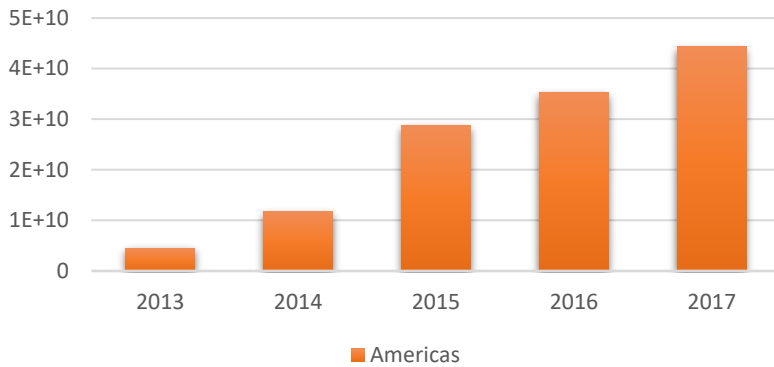
In the whole mainland (north, south, central), there is a continuous development of Alternative Finance Market and it becomes more mainstream for a lot of companies, like start-up, little firm and also for a lot of consumers.

This market, with the passing of time, become also subject of interest of industry, government and academy, that start to study and regulate this phenomenon in its growth.

The market of online alternative finance doesn't grow only in Americas, but also in Europe and Asia-Pacific; the European volumes have an increase of 48% and for the other two respectively 63% (the highest) and 26%. In 2017 the area that has the biggest volumes in this market is The Asia-Pacific region, with more than 320 billion of Euro, in respect to the almost € 10 billion of Europe and almost € 40 billion of Americas.



**Graphic 18: Total Americas volumes in online alternative finance 2013-2017 (billions-\$)**

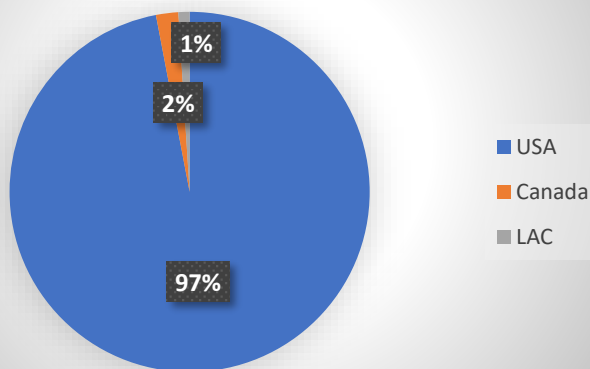


<sup>22</sup>American market, with time, become also subject of interest of industry, government and academy, that start to study and regulate this phenomenon in growing. In 2017, the total amount is \$ 44 billion, grown by 26% from the \$ 32,5 billion in 2016; this sector has an average annual growth of 89% and in the last 5 years (2013-2017) raised over \$ 124

billions (35% in 2017).

<sup>11</sup>More specifically, the 99% of volume in Asia-Pacific region come from China and in 4 years the annual growth rates arrive to 145%. In the Americas, with and United States have the 97% of the volumes, the annual growth rates experienced 89%; in particular in Latin America and Caribbean, the market in online alternative finance market grows of the 160% in respect to previous year, and in 4 years of 146%. In Europe, in respect to the other two, it is the smallest mainland but its annual growth rate was more exponentially, with a growth of 79% from 2013 to 2017.

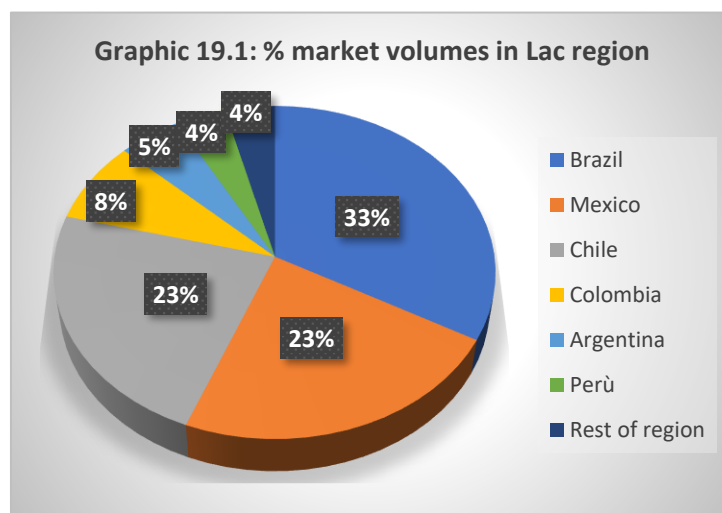
**Graphic 19: % market volumes in Americas**



As we said, 96% of the USA represent the 97% (like \$ 44 billion in 2017 and \$ 121,7 billion) of the market share in Americas (it is the second country for largest of market, after China), Canada represents the 2% and 1% for Lac region.

<sup>22</sup> "REACHING NEW HEIGHTS – The 3<sup>RD</sup> Americas Alternative Finance Industry Report" written by "University of Cambridge" of December 2018.

This area counts the countries in Latin America and Caribbean and about this 1% in order of highest volumes there are Brazil (33%), Mexico (23%), Chile (23%), Colombia (8%), Argentina (5%), Perú (4%) and rest of regions (4%).



Geographic Distribution of Alternative Finance Volume by Country, 2017



Figura 6

Figure 6

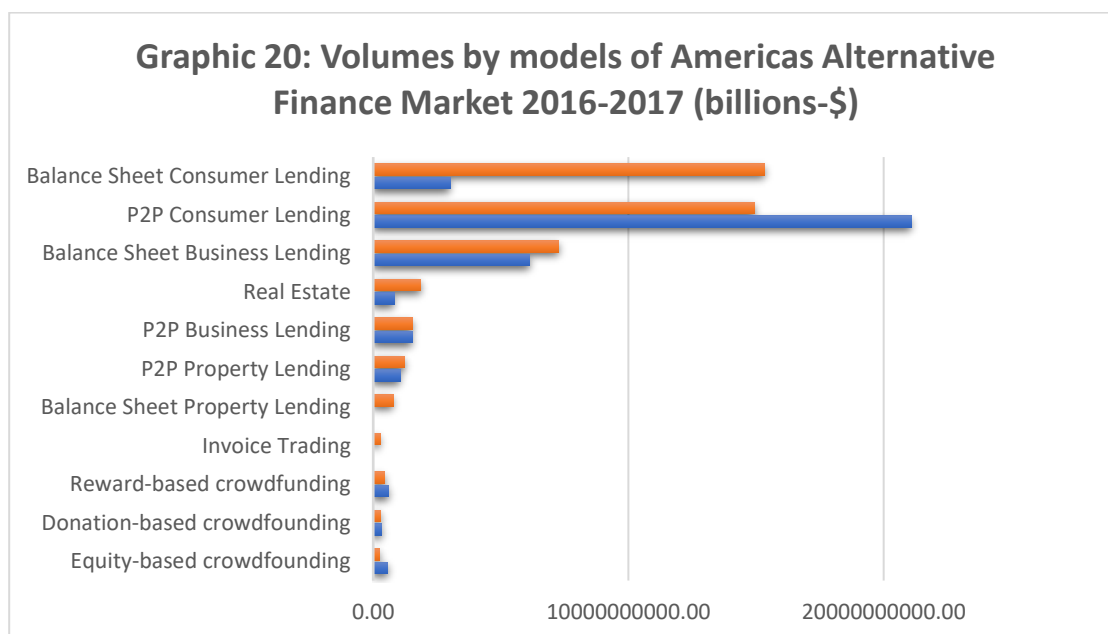
About other countries we can see the distribution of the best countries in Americas about the volumes in each country Canada with \$ 867,6 million; Brazil with \$ 216,4 million, that in 2017 surpassed Mexico and Chile with, respectively \$ 151,1 and \$ 150,7 million (in 2016 Brazil raised over \$ 64,4 million, Mexico \$ 108,3 million and Chile arrive to \$ 92,8 million). For other countries see the Figure 6.

Obviously, in different mainland and countries we have different crowdfunding models because in each there are different features which influence the choice of the type of online alternative finance.

The first model in Americas is the Balance Sheet Consumer Lending which grows from 2016 to 2017 of 409%, from \$ 3 to \$ 15,34 billion and it represents the 34,5% of the total market; the second is the P2P Consumer Lending (33,6% of total market), which decreases from \$ 21,09 in 2016 to \$ 14,94 billion in 2017. About the third, we find the Balance Sheet Business Lending that represents the 16,3% of the total market; it grew from \$ 6,12 in 2016 to \$ 7,26 billion in 2017.

About the other models, there are three other models that grow from 2016 to 2017: Real Estate from \$ 820 million to \$ 1,87 billion; P2P Business Lending from remain almost the same, around \$ 1,53/1,54 billion; and P2P Property Lending from \$ 1,05 to \$ 1,24 billion.

Then, as concerning the last models, we have 3 models that decrease in these two years, as the reward-based model from \$ 0,600 to \$ 0,440 billion, the Donation-based model from \$ 0,340 to \$ 0,290 billion and the Equity-based crowdfunding from \$ 0,570 to \$ 0,260 billion.



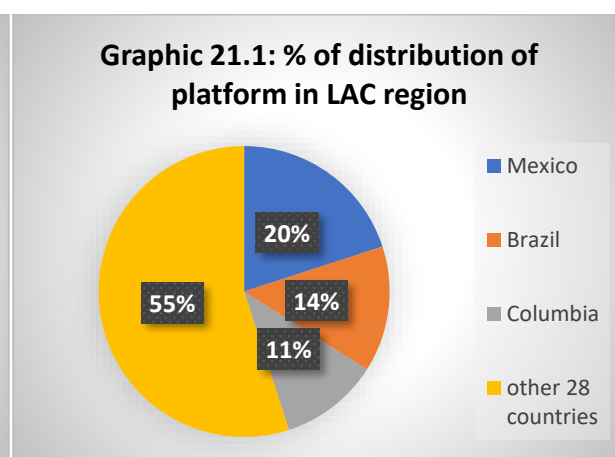
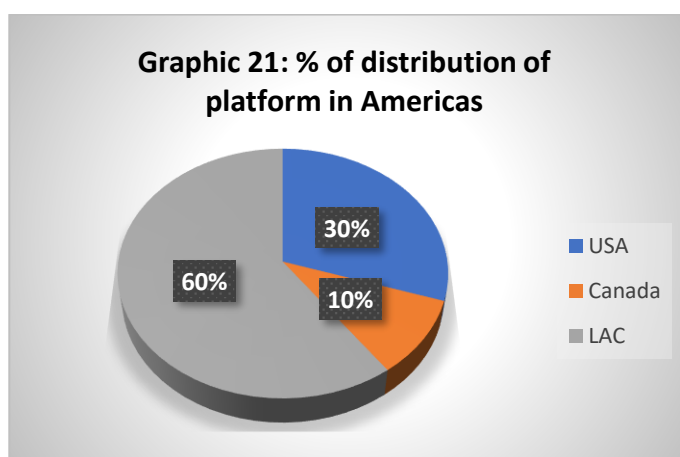
Orange=2017; Blue=2016

Now we go to analyze the distribution of numbers of platforms in each country and then we do a fast analysis of the best platform in Americas.

The most of these come from Usa, like the 30%, from Canada, the 10% and from LAC, the 60%.

About the first area we can say that the number of platforms in online alternative finance market decrease in 2017. 48 platforms pivoted away from <sup>22</sup>“orthodox” alternative finance models or were no longer active” (also if the first country for number of platforms); this amount like the 15%, so it is not dangerous but it is the only country that in 2017 doesn’t grow.

About Canada we can say that the number of platform grew but it is important to underline that almost the 45% of this platform operate in Usa. The last but not the least, LAC region is composed of Mexico, in which there are the 20% of the platform in LAC region, of Brazil, the 14%, of Columbia, the 11% and the rest (the 55%) is divided in other 28 countries, in which every area counts less than the 10%.





<sup>23</sup>The Usa is not only the first area for the number of platforms in Americas, but also for the most important platforms that exist in this mainland. Two of these are “**Kickstarter**” and “**Indiegogo**”; the first, the most used, born in 2009 and thanks to its business model arrives also in Europe (in Italy in 2015), infact it is the first platform in the world; the second born in 2008 in California and it is the second only to Kickstarter. Both are platforms that are a mix between donation and reward-based crowdfunding, but only IndieGogo, today, opens also to equity-based crowdfunding model.

In Canada, one of the most important platform is <sup>24</sup>“**FundRazr**”, founded by Daryl Hatton in 2008; born as an app in Facebook that permits people to do crowdfunding and then becomes a <sup>24</sup>“full online fundraising tool set”. To do an example of platform in Lac region we talk about <sup>25</sup>“**Catarse**”, one of the most important crowdfunding platforms in this area, founded in Brazil, as an answer fo Kickstarter in Usa and it is not only a clone, but this platform is an open source.

We analize better this platform when we do the analysis of each country.

Now we need to concentrate on the regulation of online alternative finance market in Americas. A study of Cambridge University, <sup>22</sup>“REACHING NEW HEIGHTS – 3<sup>RD</sup> Americas Alternative Finance Industry Report”, of December 2018, in which are included questions to know how people perceived the regulation in their jurisdiction; every country has a different perception of the regulation and the question is divided by tipe, loan-based and investment-based.

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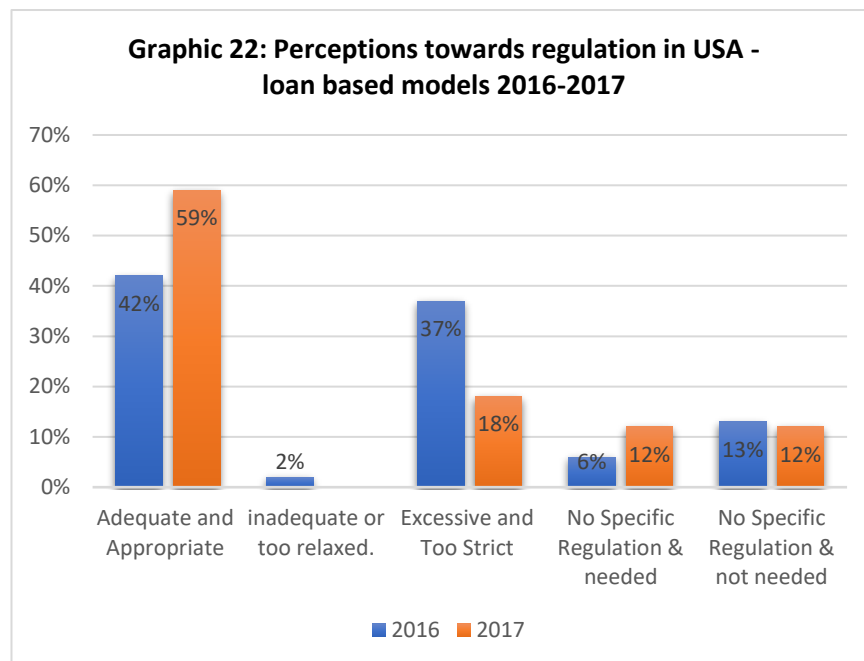
<sup>23</sup> . <https://www.startupmag.it/piattaforme-crowdfunding/>

<sup>24</sup> <https://en.wikipedia.org/wiki/FundRazr>

<sup>25</sup> <https://wiki.p2pfoundation.net/Catarse>

## 2.2 People perceptions

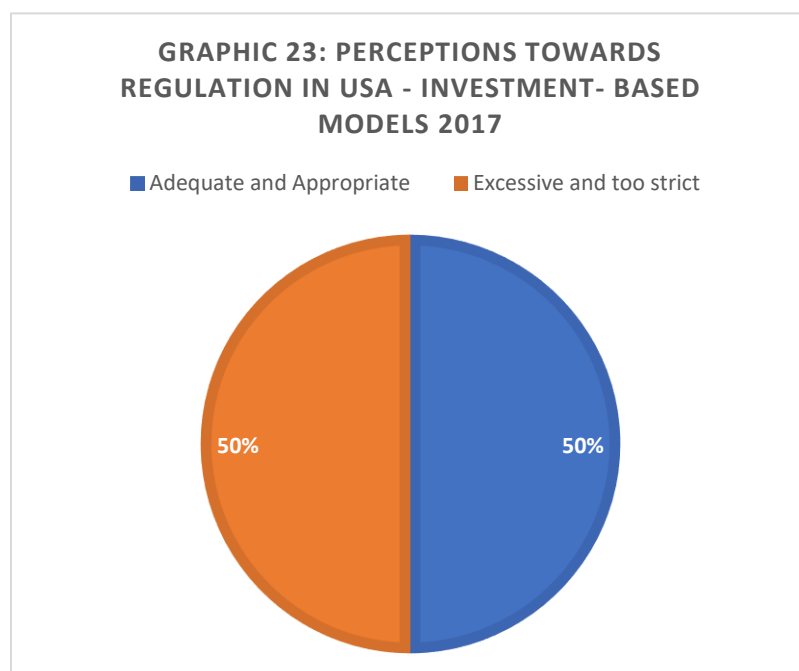
### 2.2.1 United States of Americas Perceptions



About loan-based, the 59% think that the regulation is **“adequate and appropriate”** (42% in 2016), the 18% think it is **“excessive & too strict”** and the rest of 24% is divided to 12% that think there is **“not a specific regulation & not needed”** and in another 12% that think there is **“not a specific regulation & needed”** (from 6% in 2016).

For investment-based platforms, in 2017 the perception of regulation is 50% of people think that the regulation is **“adequate and appropriate”** and the rest of the 50% think it is **“excessive and too strict”**.

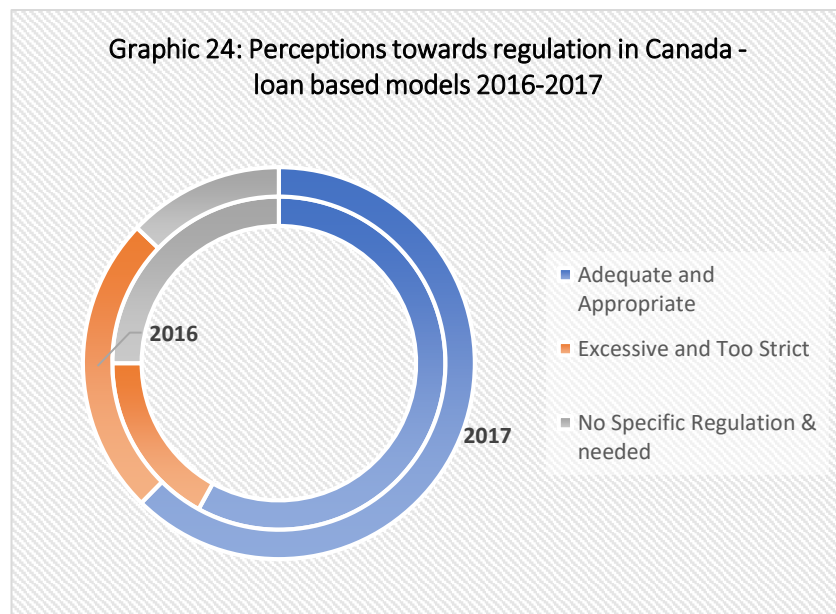
For both models (load and investment-based) unless the 50% of perception is **“adequate and appropriate”**.



## 2.2.2 Canada Perception

Also in Canada, there is a difference between the two kinds of models.

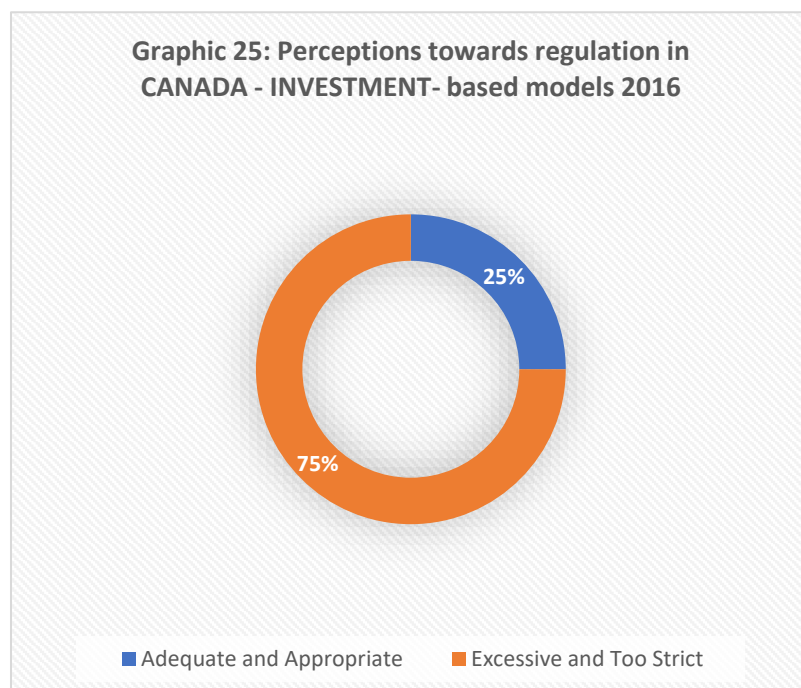
About the loan-based model, that is the situation:



People think the regulation is **“adequate and appropriate”** are 63% in 2017, from the 58% of the previous year; there are also people that think there is **“no specific regulation & needed”** are 25% in 2016, instead in 2017 they go down to 13%;

the amount of people that think is **“excessive and too strict”** are 25%, grown from the 17% of 2016.

About investment model, in 2016 the 25% think that the regulation is **“adequate and appropriate”**, instead the 75% think it is excessive and too strict.



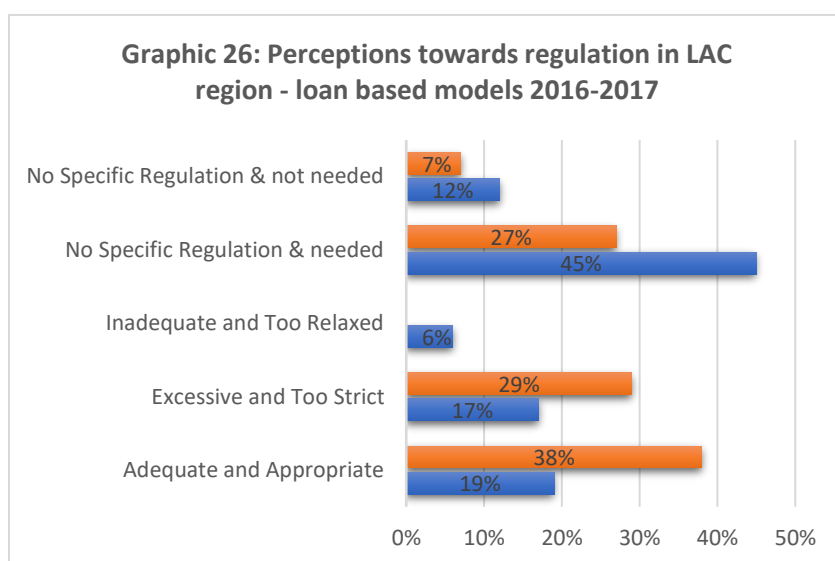
## 2.2.3 LAC Region Perceptions

In this area, the government of the different countries have issued or have intention to regulate the crowdfunding market.

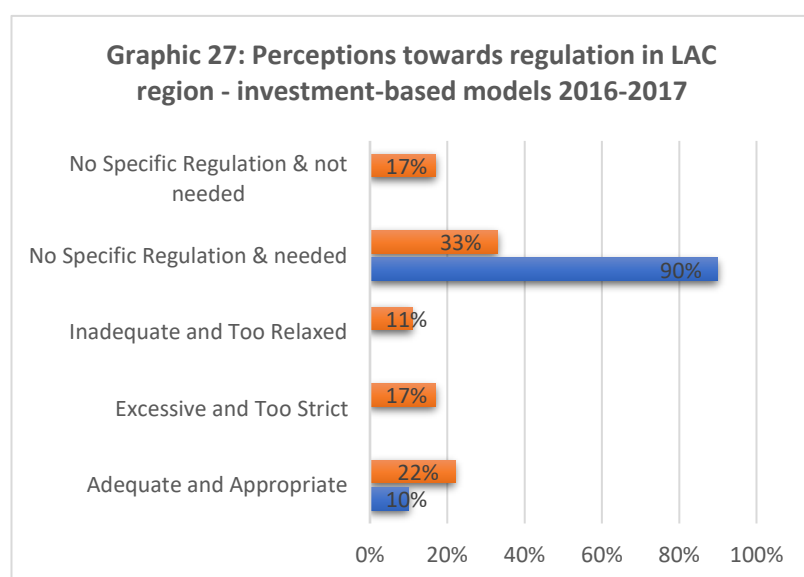
For example, the National Banking and Securities Commission (CNBV) and the Ministry of Finance and Public Credit of Mexico put the crowdfunding in the 4 types of businesses in Fintech law; also in Brazil, where it established a “Fintech Working Group” led by the Brazilian Association of Development (ABDE), the Commission of Transferable Securities (CVM) and the Inter-American Development Bank, to regulate and study new models; in Columbia the Financial Superintendency created “**Innovasfc**” for innovation and regulation; and also in Chile that it would regulate this kind of alternative finance.

Also, in this area there are different perception of the regulation based on the type of reference model.

About loan-based models, people who think that the regulation, in 2017, is “adequate and appropriate” are the 38%, from the 19% of 2016; “excessive and too strict” from 17% (2016) to 29%. “Inadequate and too relaxed” in 2016 is 6%, instead in 2017 disappeared. About no specific regulation, in 2017, the 7% “... & not needed” and 27% “... & needed” (in 2016 instead respectively 12% and 45%).



Orange=2017; Blue=2016

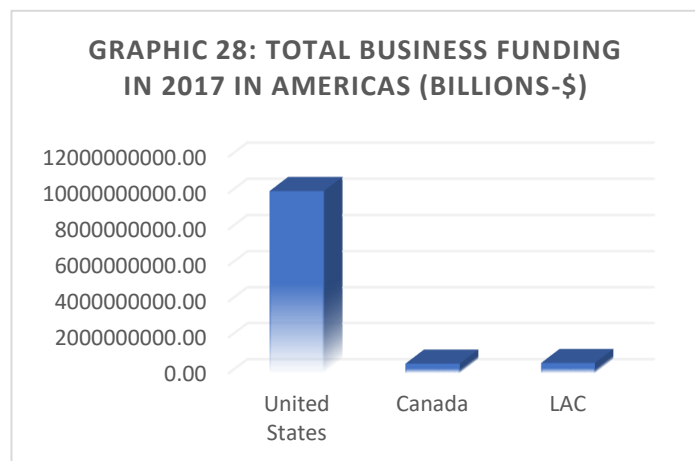


Orange=2017; Blue=2016

About investment models, the majority of people think, in 2016, that there is “no specific regulation & needed” and only the 10% think it is “adequate and appropriate”. Instead in 2017, “no specific regulation & needed” are 33%, “... & not needed 17%; “inadequate and too relaxed” 11%, “excessive and too strict 17% and in the end “adequate and appropriate” only the 22%.

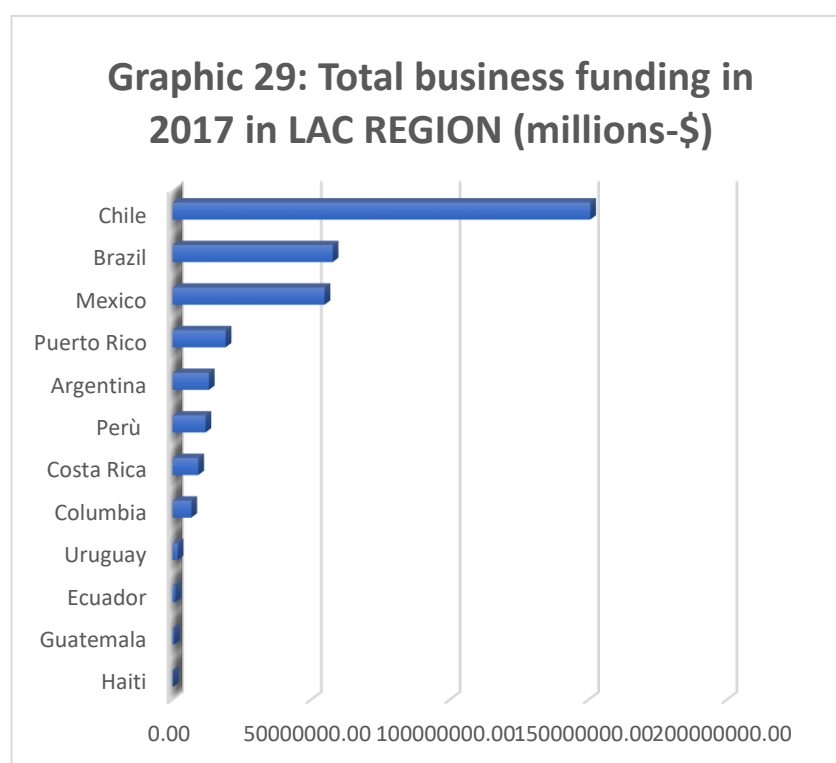
About the creation of the regulation and the support of government in each country we will talk about it when we analyze specifically the different countries.

So now we need to see the top 5 countries in the Americas, and so we go to take that country that have the highest volumes in this sector.



This mainland is divided in 3 areas: Usa that succeed in raising over \$ 10 billions; Canada is the second country for volumes and arrives to more than \$ 0,500 billions; and the Lac region raised more than \$ 0,500 billions, almost like Canada.

In LAC region, we said that the total amount volumes of this market are about \$ 500 million.

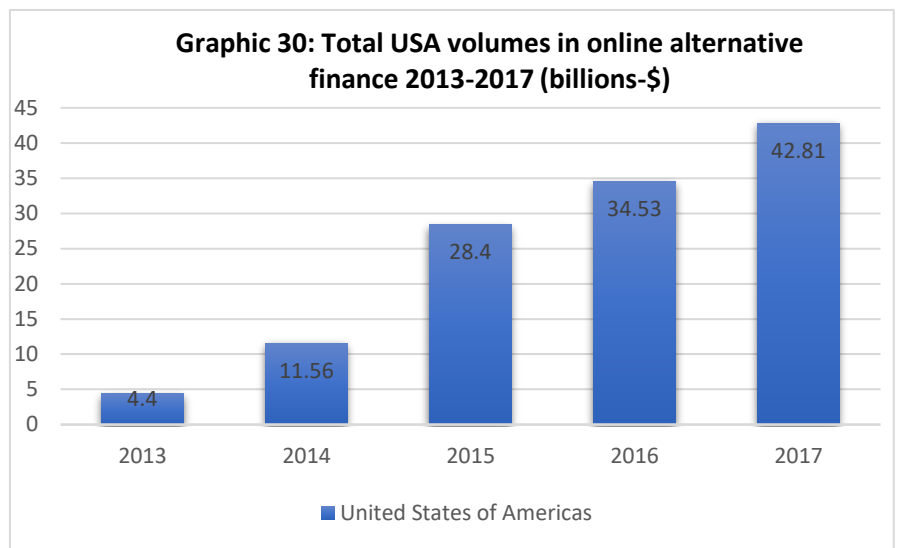


Of this, the best 3 countries are Chile, \$ 150 millions, Brazil and Mexico raised over \$ 50 millions. The other countries that arrive to more than \$ 10 million are Puerto Rico, Argentina and Perú. More than \$ 1 millions are also Uruguay, Colombia and Costa Rica. In the end with less than \$ 1 million raised, there are Ecuador, Guatemala and Haiti.

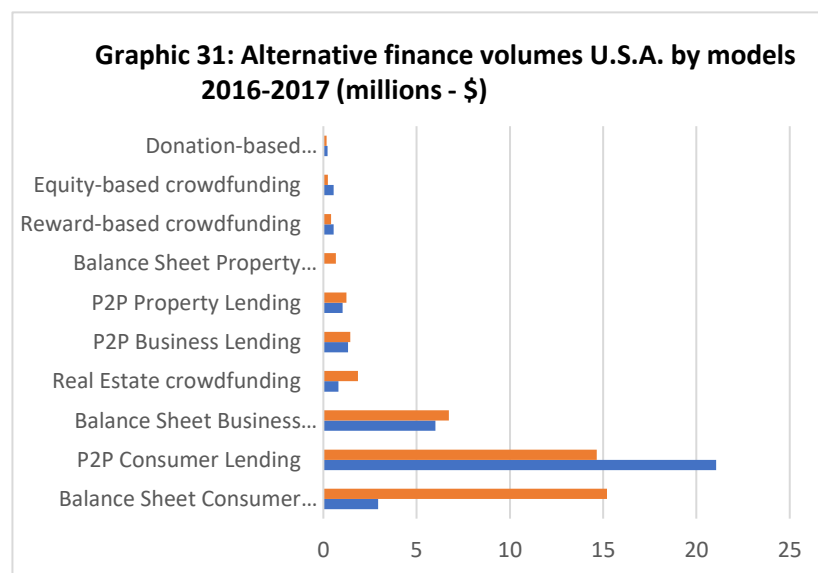
After showing all the volumes in this market, the top 5 countries are Usa, Canada, Chile, Brazil and Mexico.

## 2.3 United States of Americas

<sup>22</sup>About this country, we can see that from 2013 to 2017, every year, the volume of online alternative finance market volumes grows; for example, from 2016 to 2017 the volumes grow about the 24% and from 2015 to 2016 of 22%. In 2017 the total amount of volumes is more than \$ 42 billions, from the \$ 34 billion of 2016 and \$ 28 billion of 2015.



Now we go also to check how much models raised in 2017, compared to 2016.



At first, we have the Balance Sheet Consumer Lending that raised over \$ 15 millions, the largest in USA that represent the 35,5% of USA market; in 2016 was so much less, infact it grew in 1 year about 417% from \$ 2,94 million.

At the second place, there is the P2P Consumer Lending with more than 14 millions, but this is the model that decreased most, about 30%: we need to think that in 2016, this model was the

most used and it raised over \$ 21 millions.

**These two models represent the 70% of all USA market.**

As third, we have the Balance Sheet Business Lending (the 15,7%) with \$ 6,7 million, from the 6 million of 2016. About Real Estate model, it experienced triple digit growth (129%), from the \$ 0,81 million of 2016 to \$ 1,85 million of 2017.

Then, there are the P2P Business Lending and the P2P Property Lending, that both grow in 2017. The first arrive to \$ 1,45 million, from the \$ 1,33 million of 2016; about the second in 2016 raised over \$ 1 millions and in 2017 grow until arrive to \$ 1,23 million.

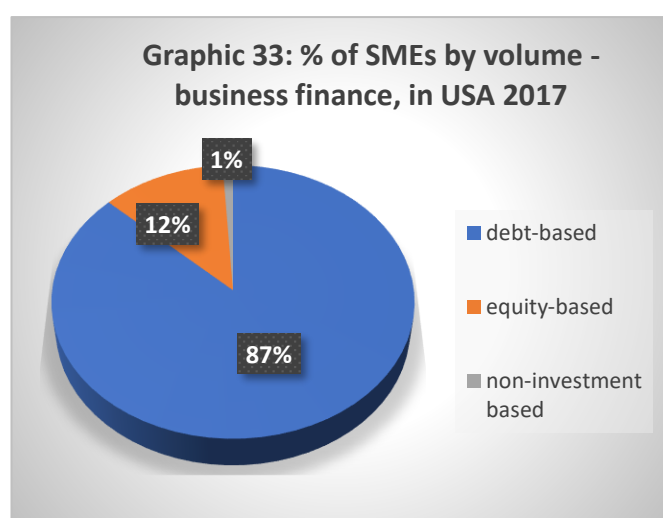
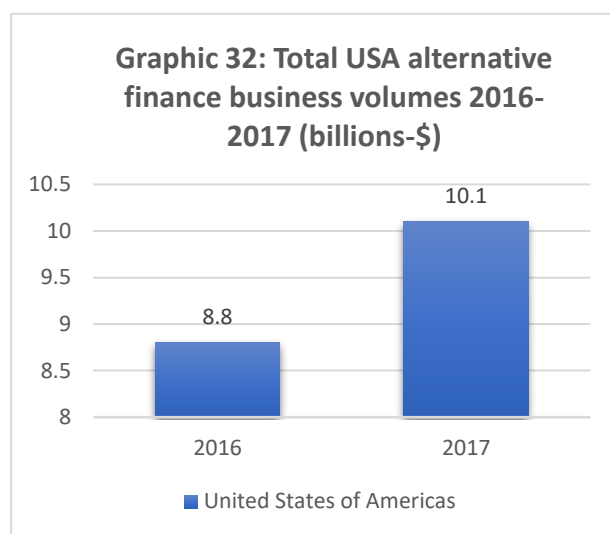
In 2017 the model that raise less than \$ 1 millions are: Balance Sheet Property Lending with \$ 0,67 million and didn't exist in 2016; Reward-based crowdfunding decreases from the \$ 0,55 in 2016 to 0,41 million in 2017; also, the Equity-based crowdfunding decreases, in 2017 are \$ 0,24 million instead the previous year

was \$ 0,55 million; in the end, there is the donation-based crowdfunding that in 2016 raised like \$ 0,22 million, instead in 2017 like 0,18 million of \$.

Instead in this moment, we go to analyze the online alternative finance market by Business.

About USA, in 2017 a total of 130.264 companies raised over \$ 10 billions, with a growth of 14,8% respect to the 2016, where the total amount of volumes was \$ 8,8 billion.

Also, if the business-based online alternative market volume represents the 24% of all USA market volume (instead the 48% from big banks and the other 47% from small banks), the number of firms decreased of 9% from the 2016 to 2017.



In

2017, \$ 8,7 billion was generated for USA SME with debt-based platforms; this represents the 86,5%, so to arrive at 100% the other parts of business fundind was the 12% from equity-based models and the 1,4% from non-investment model. Instead about the number of total SMEs, the marketplace is dominated by debt-based models and it represents the 95% of the total, then there are also the 4% by Equity-based model and the remaining 1% by non-investment model.

The USA is the second country in the world for volumes of online alternative finance market, after China; but this country is also great for the importance of its platform, that are famous and used in all the world. The best platforms in USA, as we said before are Kickstarter and Indiegogo, both famouse and used in a lot of different countries.

<sup>26</sup>Kickstarter born on 28<sup>th</sup> of April 2009, has more then \$ 16 millions of supporters (all over the world), it succeeds in raising over 4,4 billion \$ and it manages more than 165000 projects. It is the first platform in the world for crowdfunding and it works in a lot of sectors like Design, Technology, Music, Moda, Games and so on.



Figure 7

<sup>26</sup> <https://www.kickstarter.com>



Figure 8

<sup>27</sup>Indiegogo, instead, born in 2008, counts more than \$ 9 millions supporters, in more than 235 countries. Every month it manages about 19000 campaigns in a lot of different areas: sport, music, movies, arts and also community problems.

About regulation, until 2014, the SEC (Securities and Exchange Commission), responsible for monitoring the valuation of values, had some difficulty to create a specific law for online alternative finance market because it had a huge amount of data; also, this law that they need to create need to respect a series of “SEC Priority”, like economic efficiency, economic impact and so on.

The president Obama in April 2012, signed the JOBS law (Jumpstart Our Business Startups), to limitate the law’s restriction about the raising of capital for young and little firms.

<sup>28</sup>About this Law we have three provisions:

- Title II, if the investors had sufficient funds for the investment (also if they lose everything), they don’t need the authorization of the SEC; before an investor was not able to present titles to the public without sending all the documentation to the SEC.
- Title III, this provision requires an information document to be filled; this need to be send to the SEC that doesn’t check, but these papers are like a “private placement memorandum”.

Title IV, different to the Title III; the information document need to be send to the SEC for a review and a comment. The specific requirements are: 1) depending on the compensation model and its activity, you may need to become a Broker-Dealer registered with FINRA or a registered investment advisor; 2) Issuers and funding platforms need to respect the KYC (Know your consumer, and it is the process of a business verifying the identity of their clients and “assessing their suitability” and AML (Anti-money Laundering) schemes; 3) Best practices require that funding platforms doesn’t “touch” or manage funds, but case agents (independent and qualified) to keep funds waiting for release.

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<sup>27</sup> [https://entrepreneur.indiegogo.com/how-it-works/indiegogo-vs-kickstarter/?utm\\_campaign=igvsk&utm\\_content=howitworks&utm\\_medium=howitworks&utm\\_source=igg](https://entrepreneur.indiegogo.com/how-it-works/indiegogo-vs-kickstarter/?utm_campaign=igvsk&utm_content=howitworks&utm_medium=howitworks&utm_source=igg)

<sup>28</sup> [https://eurocrowd.org/wp-content/blogs.dir/sites/85/2017/10/ECN\\_Review\\_of\\_Crowdfunding\\_Regulation\\_2017.pdf](https://eurocrowd.org/wp-content/blogs.dir/sites/85/2017/10/ECN_Review_of_Crowdfunding_Regulation_2017.pdf)

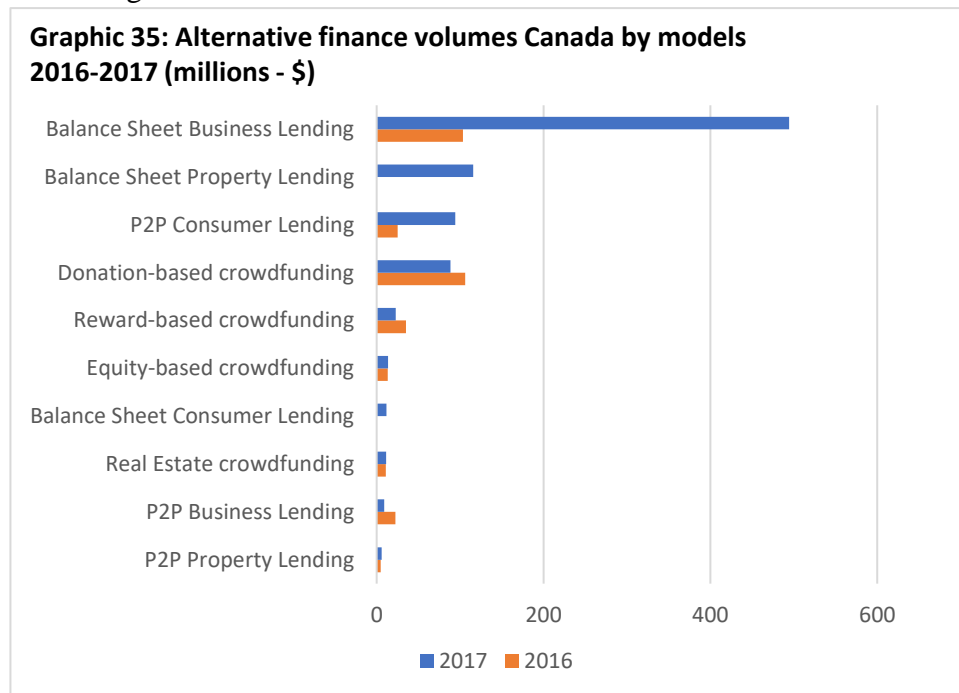
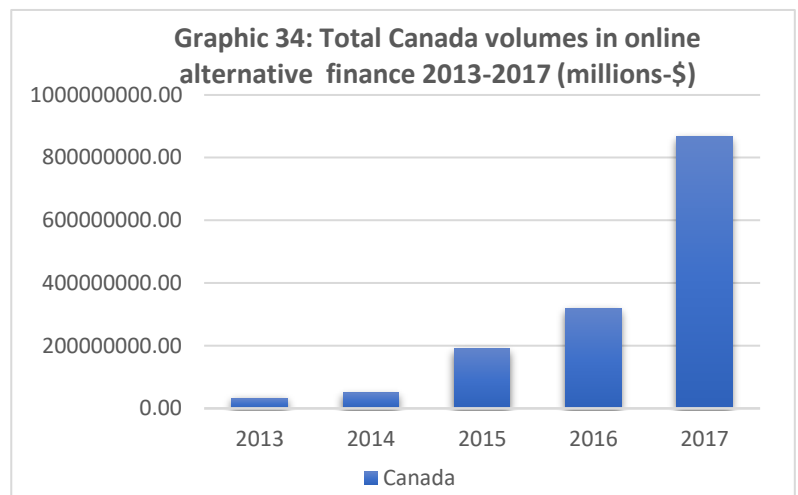


## 2.4 Canada

Also in this country, from 2013 to 2017, the total amount in online alternative finance market grew every year; it increased like the 114% every year and for example, from 2015 to 2017, the total amount changes respectively from almost \$ 190 million, to \$ 317 million and in the end, arrive to \$ 867,6 million in 2017. The area of Canada

contributed by the 2% of the total Americas total volumes and with U.S.A arrive to count the 99% of the the total amount of the Americas.

Now we go to see the amount of each model in Canada.



In general, almost all the models grew from 2016 to 2017, but there are also some cases in which the total volumes of models decreased in this 2 years.

The first model in Canada is the Balance Sheet Business Lending that grew from like \$ 103 million in 2016 to \$ 494 million. The second and the third models are the Balance Sheet Property Lending and

P2P Consumer Lending that in 2017 was respectively of \$ 115,67 million and \$ 94,12; the second model didn't exist in 2016, instead in this year the third raised only 25% (a huge increase in 1 year). Also, the Balance Sheet Consumer Lending model didn't exist in 2016, but in 2017 raised over \$ 11 millions. In Canada, there are some models that from 2016 to 2017 didn't change so much for the volumes like the Equity-based crowdfunding, the Real Estate crowdfunding and the P2P Property Lending, that in 2017 they arrive respectively to \$ 13,83 million (in 2016 \$ 13,11 million), \$ 11,5 million (in 2016 \$ 11 million) and in the end \$ 6 million (from \$ 5 million in 2016). The last 3 models to analyze are Donation-based crowdfunding, Reward-based crowdfunding and P2P Business Lending, that from 2016 to 2017 decreased in model's volumes: the first from \$ 105,92 million to \$ 88,59; the second, from \$ 35,27 million to \$ 22,94 million; and the last, from \$ 22,5 to \$ 9 million.

Different from U.S.A. there are not so many important platform, but we go to analyze a canadian platform that is important in the country and also outside it.

<sup>29</sup>The name of this platform is “FundRazr”, which was born in 2008, founded by Daryl Hatton; this platform collaborates with different important partner like Cambridge and Harvard Univeristy and succeeds in raising over \$ 135 millions until 2019.

They did a lot of important campaigns such as in 2011 a

campaign for Facebook’s Timeline Feature, instead, in 2012 an innovative project for Save the children that raised \$ 1 million. It

also wins some awards for “Social Innovation”, “Most promising Start-up”, “Business Innovation Technology” and so on.

Now we go to explain the regulation in Canada about the online alternative finance market.

In this country in different years in some regions, like Ontario and Quebec, the governments published different regulation.

<sup>30</sup>There are three important regulations:

1. Multilateral Instrument 45-108 (“MI 45-108”), divided in the Crowdfunding Prospectus Exemption and the Funding Portal Requirements. The first regulate the distribution in a crowdfunding offering of the securities to the investor and also about the information that the private issuers need to communicate; in the second the MI 45-108 wants to ensure that in the crowdfunding area the investors need to be protected.
2. Multilateral CSA Notice 45-316 (“MCSAN 45-316”), different from the MI 45-108, have the expiration date on May 2020 (the MI 45-108 don’t have). The Multilateral regulates the funding portals and also the issuers.
3. Proposed Multilateral Instrument 45-109 (“Proposed 45-109”), the funding portals need to be register under the securities law in Canada, so they are treats like dealers. Also, since this regulation addresses the raising of capital by business startups through crowdfunding or through other means, one may say that funding portals didn’t need under Proposed 45-109; this is the main different with MI 45-108 and MCSAN 45-316.

In different part of Canada each area decided to respect one or two of this 3 kinds of regulation; and there are also some parte where there is not a regulation.

The logo for FundRazr, featuring the word "FundRazr" in a bold, blue, sans-serif font. The "R" is stylized with a small gap between the "d" and the "z".

Figure 9

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<sup>29</sup> <https://fundrazr.com/pages/about>

<sup>30</sup> <https://www.pallettvalo.com/news-centre/newsletters/land-of-confusion-ndash-crowdfunding-regulations-in-canada/>

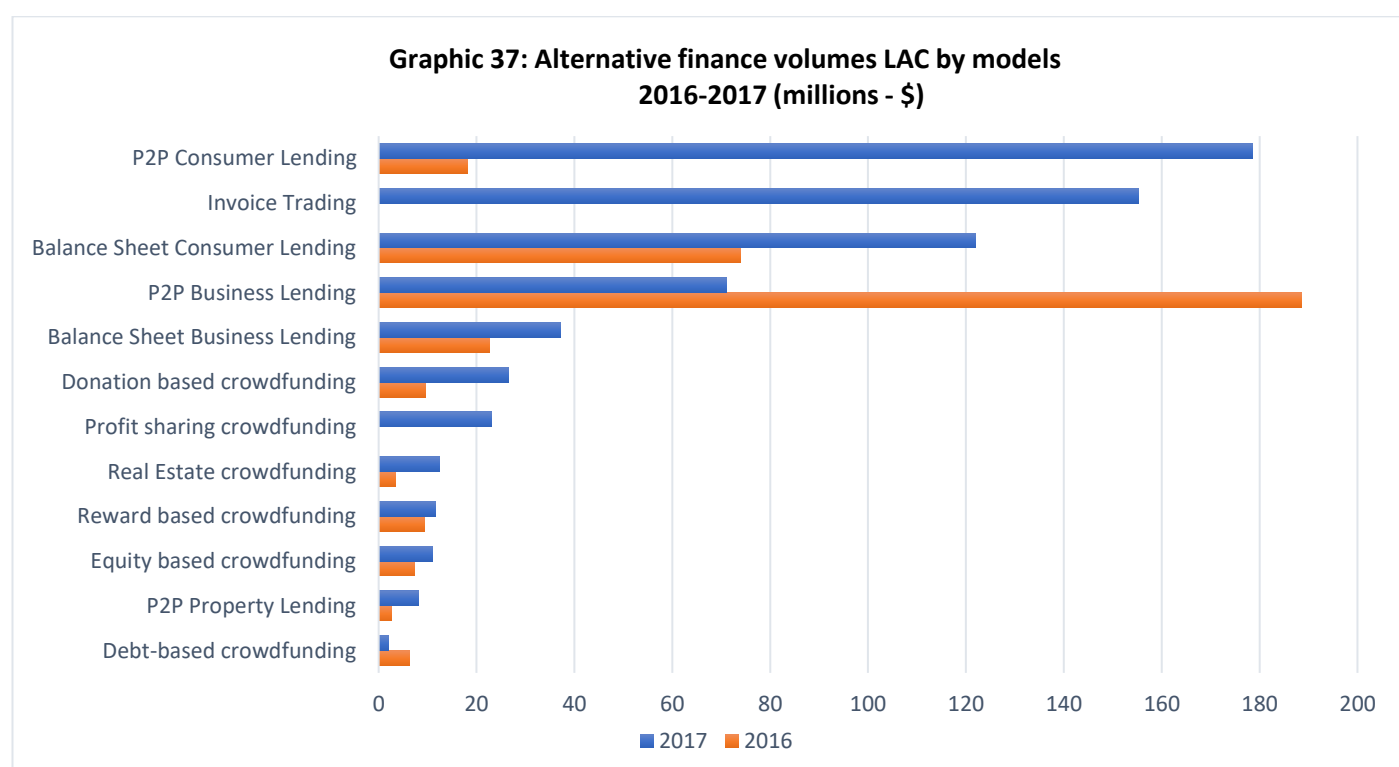
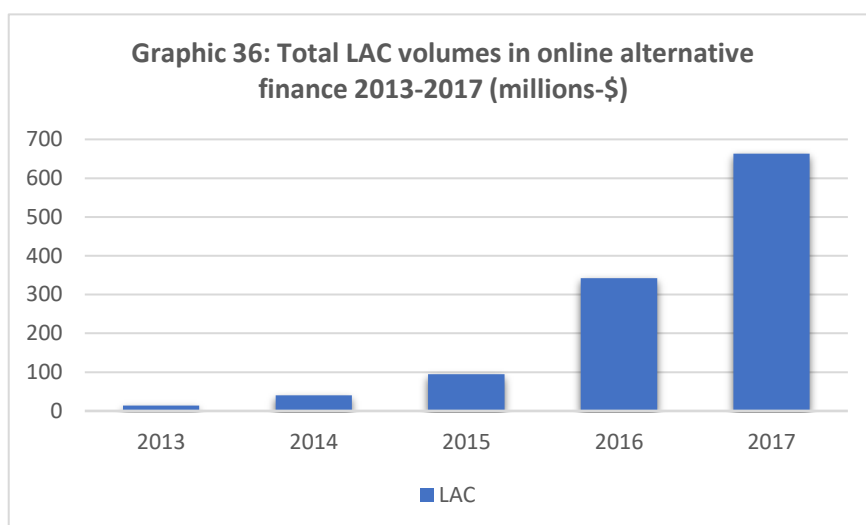
## 2.5 Latin Americas and the Caribbean (LAC) Online Alternative Finance Market

The Latin Americas and the Caribbean (LAC) represents the 1% of the total amount in online alternative finance market and succeed in 2017 in raising over \$ 663 millions. About the previous year, it grows of the 94% respect to the 2016 (\$ 342 million), instead in 2015, only some countries succed in raising a significant volume.

In this market, Brazil with \$ 24,15

million, Mexico with \$ 13,75 million, Chile with \$ 47,57 million and in the end Argentina with \$ 9,55

million. In 2013 and 2014 only Chile and Argentina: in 2013 Chile with \$ 11,80 million and Argentina with \$ 2,17 million; in 2014 the first with \$ 37,43 million and the second with \$ 2,76 million.



The first platform for volume raising, is the P2P Consumer Lending, that from 2016 to the 2017 grew from \$ 18,22 million to \$ 178,56 million.

The second and the third are respectively the Invoice Trading, with \$ 155,18 million in 2017 and it didn't exist in 2016, and the Balance Sheet Consumer Lending, that grew from \$ 73,91 million in 2016 to \$ 121,91 million in 2017.

The volumes of two models decreased from 2016 to 2017: the P2P Business Lending and the Debt-based crowdfunding that respectively had in 2016 \$ 158,88 million and \$ 6,03 million and in 2017 \$ 71,6 and \$ 2,08 million.

The other six models in 2017 raised: P2P Property Lending with \$ 8,07 million (in 2016 \$ 2,72 million); Equity based crowdfunding with \$ 11,08 million (in 2016 \$ 7,3 million); Reward based crowdfunding with \$ 11,59 million (in 2016 \$ 9,29 million); Real Estate crowdfunding with \$ 12,5 million (in 2016 \$ 3,4 million); Donation based crowdfunding with \$ 26,63 million (in 2016 \$ 9,67 million); and Balance Sheet Business Lending with \$ 37,12 million (in 2016 \$ 22,57 million).

Similar to the Invoice Trading, there is the Profit Sharing crowdfunding that didn't exist in 2016, but in 2017 it raised over \$ 22 millions.

There are not so many important platforms in the whole area.

<sup>31</sup>One of the most important is "Catarse", born on 17<sup>th</sup> January 2011 in Brazil and until the 2019 it has more than 608000 supporters, with more than 10000 projects which succeeded in raising over \$ 103 millions. This platform is also a space to a lot of different campaigns in different sectors, like Art, Journalism, Moda and Design, Cinema and Video and so on.

About the regulation, the LAC region is improving and they see the online alternative finance market like a way to increase the levels of financial inclusion. The regulation will guarantee 3 points: protections of financial consumers, guarantee transparency and competition and manage and reduce the risk the systematic risks of financial operations.

But there is not only one kind of law, but every place decided to adapt the regulations in their countries in a different way. Instead, in this last years, the country involved in the Pacific Alliance and they are trying to create some guiding principles for Fintech regulation in the sub-region. The reason of this, is to find a regulatory convergence to make easier the Fintech world in this Mainland.

There are two examples important in this region:

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<sup>31</sup> [https://www.catarse.me/?ref=ctrse\\_header](https://www.catarse.me/?ref=ctrse_header)

- In Brasil, the Brazilian Association of Development (ABDE) create a “Fintech Working Group” to reach two focuses, the study and development of new business models and new financial technologies and the creation of governance rules and design joint action proposals.
- In Columbia, the Financial Superintendency in Colombia (SFC) launched a new platform, Innovasfc” to improve and to develop the innovation of this market with 3 instrument: a supervision sandbox to test the innovation, a Hub Fintech to create discussion and meet up with the industry and a regtech mechanism for supervision.

After talking about the LAC region, we finish to speak about the Americas crowdfunding.

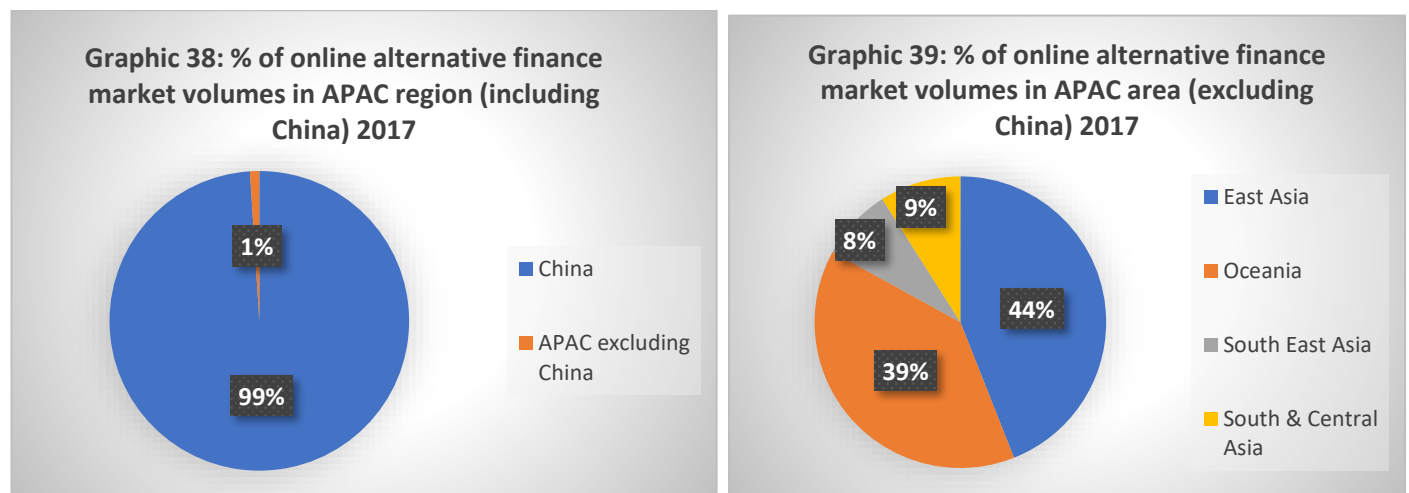
In the next chapter, instead, we will go to talk about the Online Alternative Finance Market, with volumes, models, regulations and platforms, in Asia Pacific Region (more specific about Cina, Australia and New Zealand).

### 3.Asia-Pacific Online Alternative Finance Market

#### 3.1 Asia-Pacific

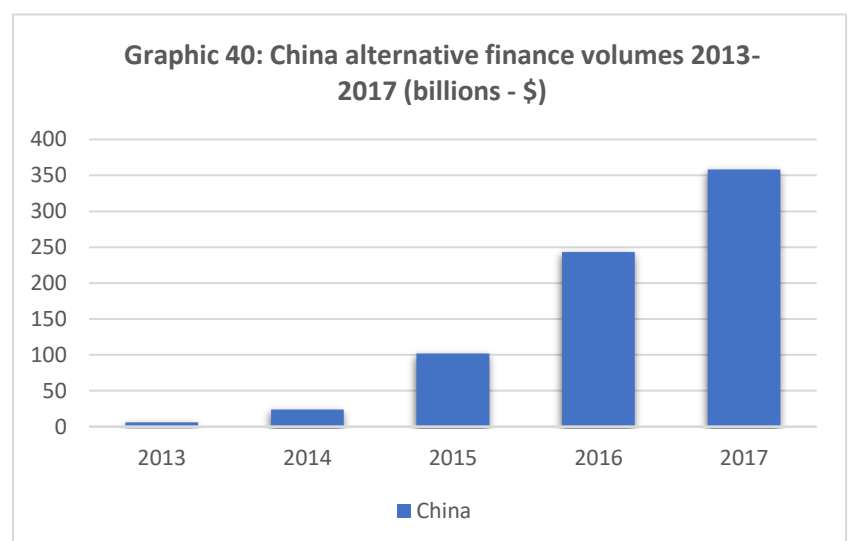
After talking about Europe and Americas, now we discuss about Online Alternative Finance Market in Asia-Pacific region.

In this mainland, called also APAC, China count the 99% of the total volumes, instead all the other areas count only the 1%. Of this part, the 39% is covered by Oceania, the 44% the East Asia, the 8% the Sud-East Asia and the 9% the South & Central Asia.



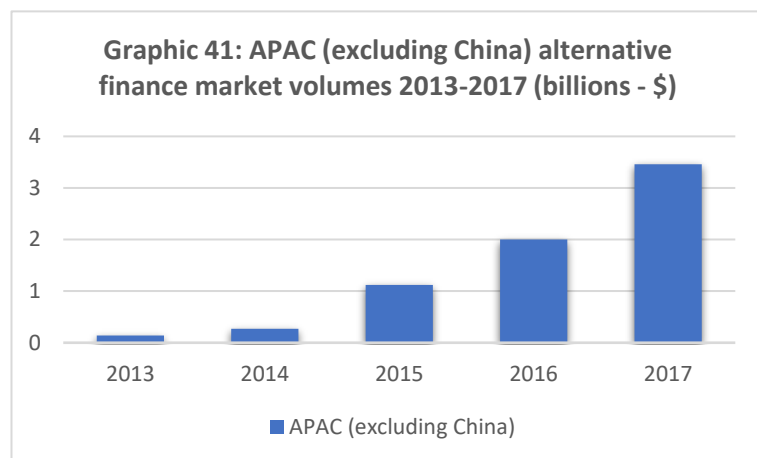
<sup>32</sup>About the total volume of Apac region, in 2017, succed in raising over \$ 361 billions, divide approximately in China with \$ 358 billion in China and like \$ 3 billion in the rest of Asia-Pacific area; in 2016 was \$ 245 billion, divide in \$ 243 billion from China and \$ 2 billion in the rest of this mainland.

More specifically, about China we can see that from 2013 grew until arrive to 2017. In 2013, it raised like \$ 6 million, in 2014 like \$ 24 billion, in 2015 like \$ 102 billion, in 2016 like \$ 243 billion and in 2017 arrived to \$ 358 billion; we can see that from 2015 to 2016 the volumes of China grew about the 138%, instead from 2016 to 2017 the growth rate was



<sup>32</sup> „The 3<sup>RD</sup> Asia Pacific Region Alternative Finance Industry Report” of “University of Cambridge”, November 2018

48%. This decreased of this rate happen because, in this country, of the reflection of the regulatory's consolidation in this industry.



The volume of APAC area excluding China is so much less in respect to Chinese area. Infact we can see that in 2013 and in 2014 it raised less than \$ 1 billion (2013 \$ 0,14 billions; 2014 \$ 0,27 billions), in 2015 it surpasses as \$ 1 billion (\$ 1,12 billion) and in 2016 and 2017 respectively \$ 2 and \$ 3,46 billion.

About this area we can also divide the volumes in Oceania, East Asia, South East Asia and South & Central Asia: in 2013 respectively \$ 29,70, \$ 97,68, \$ 10,97 and \$ 5,12 millions; in 2014 respectively \$ 126,27, \$ 136,25, \$ 26,48 and \$ 12,13 millions; in 2015 respectively \$ 665,38, \$ 424,28, \$ 46,65, \$ 40,06 millions; in 2016 respectively \$ 832,85, \$ 830,86, \$ 215,46 and \$ 124,46 millions; and in 2017 respectively \$ 1410,15, \$ 1590,29, \$ 324,81 and \$ 311,90 millions.

After talking about the volumes, we can see also that in different areas of this mainland there was a particular distribution of the number of platforms.

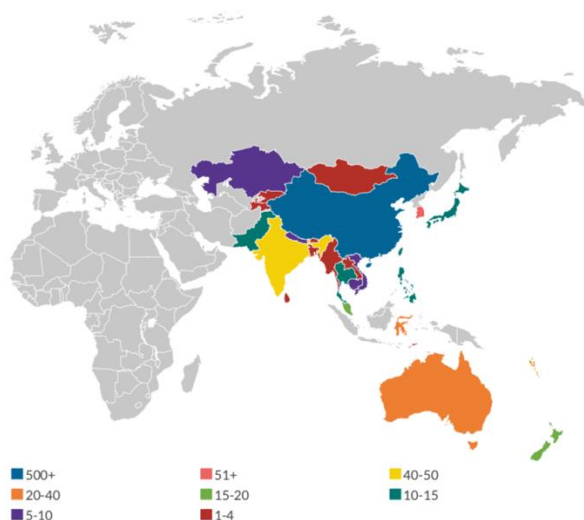


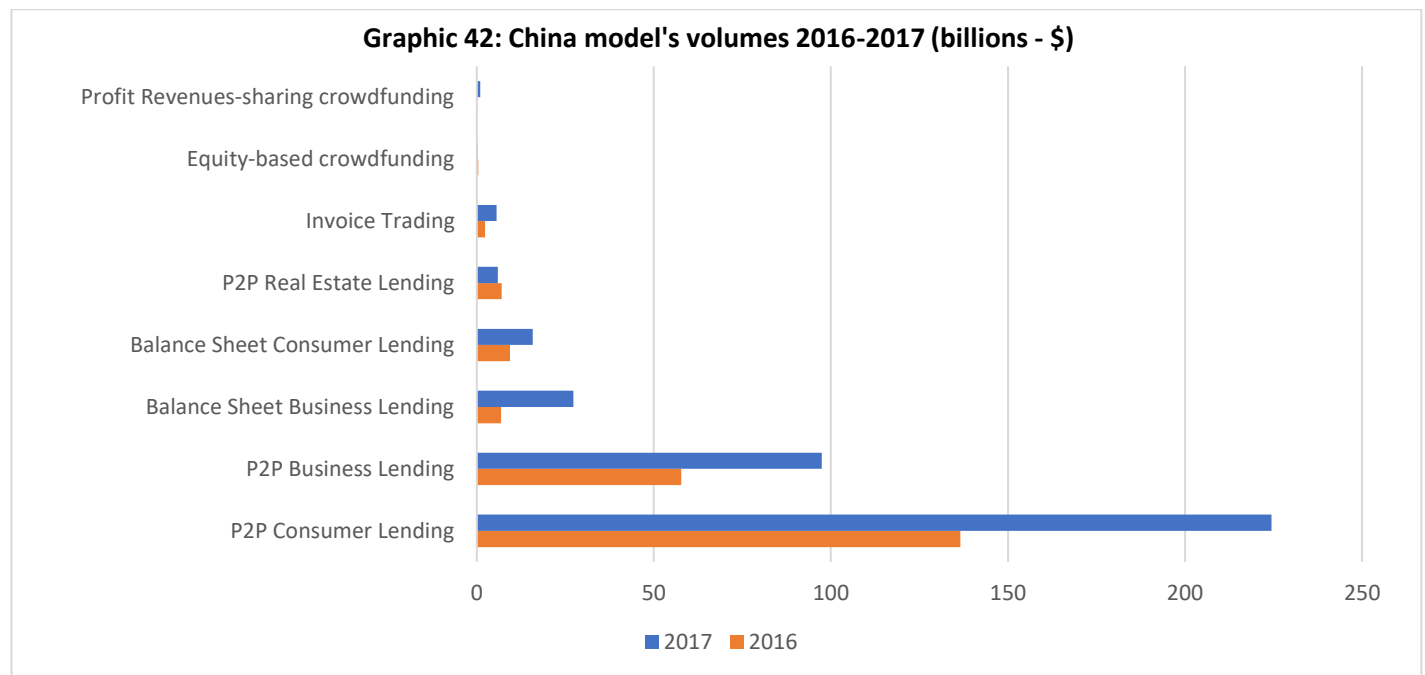
Figure 10: *"The 3<sup>RD</sup> Asia Pacific Region Alternative Finance Industry Report" of "University of Cambridge", November 2018*

About this mainland in general, we need to talk about the volumes of each model in this market in all the APAC area including China, but we will argue then when we will talk about the specific area, China and the rest of APAC region.

## 3.2 China

China is the second country in all the world, after U.S.A. Represent the 99% of total volume in online alternative finance market in APAC area and, like we said before in 2017 grew about the 48% from \$ 243 billion in 2016 to \$ 358 billion in 2017.

Now we go to analyze the volumes of each models of China.



About the volumes of the models, in 2017 we can see that the first is the P2P Consumer Lending that raised over \$ 224 billions; also in 2016 this model was the first in China with more than \$ 136 billions.

The second and the third are the P2P Business Lending and the Balance Sheet Business Lending, that in 2017 raised respectively \$ 97 and \$ 27 billion (instead in 2016 \$ 57 and \$ 6,87 billion).

Then there are some models that increased from 2016 to 2017: The Balance Sheet Consumer Lending that increase from \$ 9 billion in 2016 to \$ 15 billion in 2017; the Invoice Trading from \$ 2,28 billion in 2016 to \$ 5,61 billion in 2017; and the Profit Revenues-sharing crowdfunding from \$ 0,09 billion in 2016 to \$ 0,98 billion in 2017. There are also other two models instead that decreased in this 2 years: the P2P Real Estate Lending from like \$ 7 billion in 2016 to \$ 6 billion in 2017 and also the Equity-based crowdfunding that in 2016 raised like \$ 0,46 billion, instead in 2017 like \$ 0,22 billion (because of the strict or absent regulation). We said before that China, after U.S.A. is one of the most important market place in online alternative finance model. There are also some important platforms in this country and the most important are “DemoHour” and “Angel Crunch”.





Figure 11

<sup>33</sup>The first is a Kickstarter-like crowdfunding service which born in April 2011, founded by He Feng and You Zhang and it succed in raising over \$ 1,5 millions.

<sup>34</sup>The second born also in 2011, founded by Yuxiang Lan, and it is one of the largest equity crowdfunding platforms in China; it has more than 15 thousand fans and they are in the sector of IT, Internet and Technology.



Figure 12

About the regulation in China, we need to divide the regulamentation in two parts: first we talk about the situation of Equity-based crowdfunding and then about the Lending sector.

<sup>35</sup>Equity crowdfunding aims to enlarge and spread this market, but without good regulation it will not be able to express its full potential over time.

A study by Professor Lin Lin, "at the National University of Singapore", highlights a couple of relevant issues on this model in China:

- 1) It does not allow investors to meet in person with companies that collect information and funds; this causes reduced access to the information and the subjects will refer only to those online provided by the platform;
- 2) profits, using this model, derive from companies and not from investors; this leads to the creation of a large number of projects that cannot be managed and controlled best (uncertainty, platform legitimacy).

Furthermore, Lin argues that in addition to market mechanisms and contracts, China should use other tools such as the licensing scheme, which does not allow equity platforms without a license to operate with the addition of a security deposit, so to protect investors best.

Furthermore, China must also adapt to some American disclosure and due diligence directives (not present in the Chinese market), in order to improve the information known to investors and improve its service (to reduce the financial illiteracy of Chinese investors).

Finally, Lin suggests imposing also restrictions on the type of activity that the equity crowdfunding platform must perform.

Regarding the "Chinese Marketplace Lending Sector", "The China Banking Regulatory Commission" added to the system "1 + 3 (system aimed at managing, mitigating and monitoring risks) some measures for the

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<sup>33</sup> <http://www.demohour.com/>

<sup>34</sup> <http://angelcrunch.com/>

<sup>35</sup> Lin, Lin, Managing the Risks of Equity Crowdfunding: Lessons from China (January 30, 2017). (2017) 17(2) Journal of Corporate Law Studies 327-36. Available at SSRN: <https://ssrn.com/abstract=2908123>

Management of Marketplace Lending Information Intermediary Business Activities (measures to record information exchange and guidelines for the management of funds and deposits).

They have also tried to make local regulations that also take into account regional variations.

Finally, self-regulation leads to a reduction in information asymmetries, improvement of market standards and reduction of charges.

For example, the National Internet Finance Association (NIFA) has issued standards regarding information disclosure and risk management.

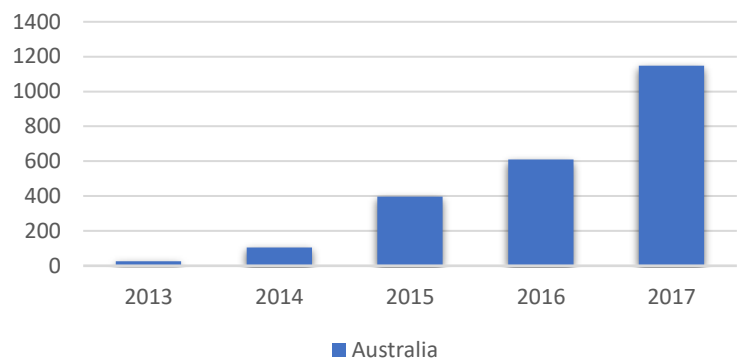
After talking about China now we go to analyze two other countries of the APAC region, Australia and New Zealand.

## 3.3 Australia and New Zealand

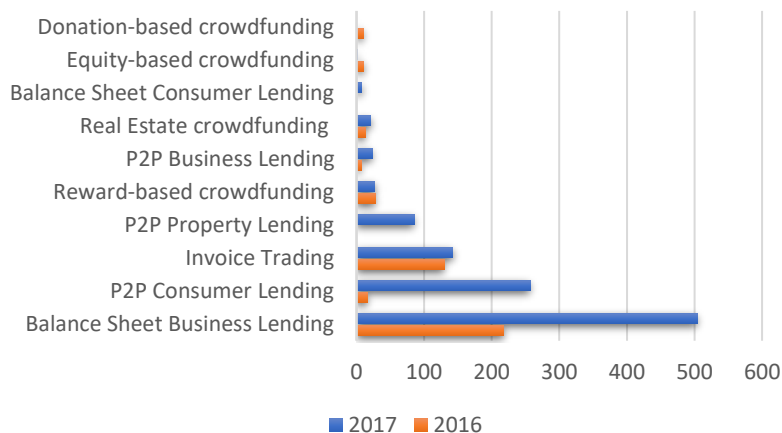
### 3.3.1 Australia

About Australian volumes in online alternative finance market, from 2013 to 2017, they grew so much every year, until they arrive in 2017 to raise over \$ 1 billion; it grew about the 88% respect to 2016 where the volumes arrived to \$ 600 millions. We can see that the growth was esponentially, passing from \$ 26 millions in 2013, to \$104 millions in 2014 and \$ 400 millions in 2015.

**Graphic 43: Total Alternative Finance Market 2013-2017 Australia (millions - \$)**



**Graphic 44: Australia Total Alternative Finance Market 2016-2017 by models (millions - \$)**



Instead about the volumes by the models, we now go to see the differences from 2016 to 2017. In 2017 the first model in Australia is the Balance Sheet Business Lending that raised over \$ 500 millions, instead in 2016 was \$ 217 millions. About the second and the third we have the P2P Consumer Lending with \$ 256 millions and the Invoice Trading with \$ 142,66 millions (in 2016 respectively \$ 15,84 and \$ 129,91 millions).

With the first 3, there are also other two models that grew from 2016 to 2017: the P2P Business Lending from \$ 6,93 to \$ 23,1 millions; and the Real Estate crowdfunding from \$ 13 to \$ 20,74 millions.

In these two years, there are also three models which decreased in 2017: The Reward-based crowdfunding that in 2016 was \$ 27,48 millions and in 2017 was \$ 26,66 millions; the Equity-based crowdfunding that in 2016 arrived to \$ 10,51 millions and in 2017 to \$ 2,04; and the Donation-based crowdfunding that in 2016 raised \$ 10 millions and in 2017 \$ 0,14 million.

In the end, there are two models that don't raise money in 2016: the P2P Property Lending which raised \$ 85 millions and the Balance Sheet Consumer Lending which arrived to \$ 7,67 millions.

In this country, we can also see one important platform, "My cause".



Figure 13

<sup>36</sup>This platform is the Australia's first online fundraising & crowdfunding platform for causes with the main target of charity; but it is also present in different sectors like school, event manager, corporate and so on. This platform born in 2007 and until 2019 succeeded in raising over \$ 100 millions, with more than 300.000 members that they support more than 68.000

campaigns.

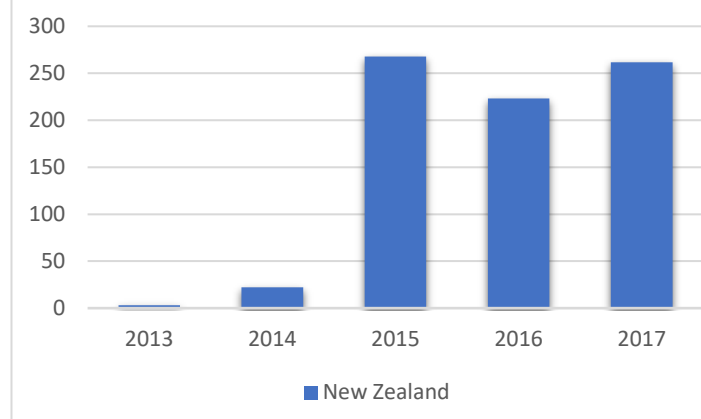
The Australian regulators are motivated to support and create a law for the online alternative finance market. The Australian Securities and Investment Commission (ASIC), published the Regulatory Guide 257 in 2016 which it is like a Sandbox that permit to firms to do their activities and receive information without a license. Then in 2017 the Australian government has passed the Corporations Amendment (Crowd-sourced Funding for Proprietary Companies) to also proprietary companies.

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<sup>36</sup> [https://www.mycase.com.au/about\\_us](https://www.mycase.com.au/about_us)

### 3.3.2 New Zealand

**Graphic 45: Total Alternative Finance Market  
2013-2017 New Zealand (millions - \$)**



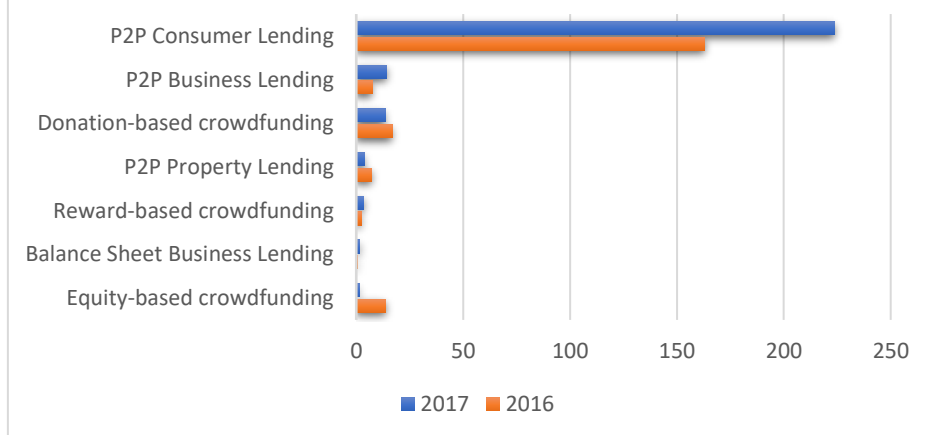
Instead, about New Zealand volumes in online alternative finance market, we can see that is one of the smallest country in APAC region but is the fifth for total of volumes in this market.

This country in 2017 succed in raising over \$ 260 millions with a growth rates of 17%, but we need to consider that from 2015 to 2016 there was a decreased of 17 and pass from \$ 267 million in 2015 to \$ 223 million in 2016. From 2013 to 2014

there was a grew of 633% instead from 2014 to 2015 of 1117%: so, in 2013 New Zealand succed in raising \$ 3 millions and in 2014 more than \$ 22 millions.

About the volumes of the different models of this market, we can see that in New Zealand the first is the P2P Consumer Lending that in 2017 raised over \$ 223 millions, from the \$ 163 million of 2016. The second and the third are P2P Business Lending and the Donation-based crowdfunding which in 2017 arrive respectively to \$ 14,21 and

**Graphic 46: New Zealand Total Alternative Finance Market  
2016-2017 by models (millions - \$)**



\$ 13,29 million (in 2016 \$ 7,5 and \$ 16,8 million). There are two models that from 2016 to 2017 increase (as well as the first 2 models): The Reward-based crowdfunding from \$ 2,29 to \$ 3,46 million; and the Balance Sheet Business Lending from \$ 0,65 to \$ 1,66 million.

In the end there are two models which, instead, decrease in these two years, the P2P Property Lending from \$ 7,2 to \$ 3,77 million and the Equity-based crowdfunding (the last) from \$ 13,85 to \$ 1,35 million.

<sup>37</sup> An example of platform in New Zealand, one of the most important platform is “Pledge Me”, born in New Zealand in 2011 like a Reward-based crowdfunding and then in 2017 it arrived also in Australia. As this platform didn’t only act like a reward, but it becomes also a platform for Equity and Lending models and it succeeded in 2015 in raising over \$ 7,5 millions with more then 900 campaigns.



Figure 14

About the regulamentation, the Financial Markets Authority (FMA), the main regulator in New Zealand, published in 2013 the Financial Markers Conduct Act 2013 (FMC Act) which was created to promote the innovation of this market. Then, in 2014, they emanated a Sandbox, but the FMA told that it was not necessary because of the flessibility of the regulator. In the end, in 2017, the FMA published also an Innovation Strategy Group (ISG) to control and manage Fintech and new innovation.

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<sup>37</sup> <https://www.pledgeme.co.nz/about>

### ***III. EMPIRICAL ANALYSIS***

# 1. Methods

## 1.1 Introduction

In this chapter, we will see different tests with statistic methods to assess if there are some statistically significant relations (correlation) between all the variable which have been found out for this research, based on crowdfunding studying.

It will also explain how we reach, collected and used the amount of data that we analyze then.

The methods that we will use are the statistical regression (linear and multiple linear) thanks to the software R, a programming language for the statistical analysis of data.

The target of this research is to find some significant relations between some economic/cultural variable (independent variables) and the total amount of alternative finance market (dependent variable): so, we go to check what independent variable have a statistic relation with our dependent variable.

To get this objective, the regression is the perfect instrument to do a specific test of this kind of relationship.



## 1.2 Data

For the discussion about this phenomenon, we find and organize a database (on excel) to reach some factors that maybe go to influence the crowdfunding.

The sources of these variables are various. The variables from column E to the BY were taken from reports on online alternative finance at the University of Cambridge (reports that we use before like references), which were divided into 3 areas, Europe, Asia, the Americas (Africa is not taken into consideration because it is still a phenomenon that is not present or of little relevance), within which a more specific analysis is made of the crowdfunding situation in each of the countries present (mostly in the countries where it is more present). From the CB column to the end the data were taken from two international data collection sites:

<sup>38</sup>Eurostat for European countries and <sup>39</sup>World Bank Group for countries outside Europe.

For a more precise analysis with regression, the missing data were not considered to be equal to 0 (as it could distort the final results), but they have been cleaned up and are considered as missing data (with the function of “Na.omit”, that delete the missing data, the N.A.).

The variables are very different from each other and range from one area to another, passing from demographic / cultural variables to economic / technical variables, for a 360 ° analysis.

## 1.3 Analysis tool

The analysis tool used to perform the regressions is <sup>40</sup>R (software). This is a programming language used for statistical analysis of data, written by Canadian statistician "Robert Gentleman" and New Zealand statistician "Ross Ihaka".

It is an “open source” software and it through the "lm" function, we were able to perform linear and multiple regression.

Now we go to see how work and what is the meaning of the regression and how we will work to understand better our empirical analysis.

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<sup>38</sup> <https://ec.europa.eu/eurostat>

<sup>39</sup> . <https://www.worldbank.org>

<sup>40</sup> [https://it.wikipedia.org/wiki/R\\_\(software\)](https://it.wikipedia.org/wiki/R_(software))

## 1.4 Regression Theory

<sup>41</sup>“In statistical modeling, regression analysis is a set of statistical processes for estimating the relationships among variable.” Regression analysis makes us understand how a dependent (or criterion) variable changes with the variation of one or more independent variables, which we will gradually verify.

<sup>42</sup>“In mathematical modeling, statistical modeling and experimental sciences, the values of dependent variables depend on the values of independent variables. The dependent variables represent the output or outcome whose variation is being studied. The independent variables, also known in a statistical context as Regressors, represent inputs or causes, that is, potential reasons for variation.”

Given a function  $y = f(x)$ , the variable  $x$  of the function is called “independent variable” while the variable  $y$  (that represent the value of the function) is called “dependent” because depend it depends on the variable/s  $x$ . In statistic, the denomination is not very precise because the choice of the variables  $x$  and  $y$  does not depend on mathematical reasons, but on the reality of the phenomenon and on the context of the experiment.

Returning to the experiment, first we need to estimate a function of the independent variables, which is called the regression function.

The subsequent analysis that results depends on the hypothesis taken into consideration, as they will be verified with a sufficient amount of data.

One must be able to read this statistical analysis as a superficial observation could lead to misleading considerations. However, this tool is used the same to be able to make predictions and be able to understand phenomena, its causes and what influences it.

Our hypothesis consists in verifying possible close relationships between the independent variables and the total volume of online alternative finance market.

During the regression analysis, we will process and test important assumptions in order to ensure that regression models are perfect in the end (no wrong assumptions because they could influence the final result).

We say before that we will do a double regression, linear and multiple linear.

<sup>43</sup>In statistics, linear regression is a linear approach to establish a possible relationship between a dependent variable,  $x$ , and one or more explanatory variables,  $y$ . In the case where we have only one explanatory variable it is called linear regression; instead if more than one, it is called multiple linear regression.

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<sup>41</sup> [https://en.wikipedia.org/wiki/Regression\\_analysis](https://en.wikipedia.org/wiki/Regression_analysis)

<sup>42</sup> [https://en.wikipedia.org/wiki/Dependent\\_and\\_independent\\_variables](https://en.wikipedia.org/wiki/Dependent_and_independent_variables)

<sup>43</sup> [https://en.wikipedia.org/wiki/Linear\\_regression](https://en.wikipedia.org/wiki/Linear_regression)

The simple regression model is more suitable when the values are distributed along a line in the scatter diagram.

$$Y = f(x) \rightarrow Y = b_0 + b_1X + e$$

dove

Y = dependent variable;

X = independent variable;

$b_0$  = intercepts, it is the average value of Y when  $X = 0$ ;

$b_1$  = Inclination, indicates how it varies Y in correspondence of a unitary variation of X (ie when  $X = 1$ );

In order to show better the relationships between the variables (X and Y), we will use a dispersion diagram in which on the abscissa we have the independent variables (or explanatory variables) and on the ordinates the values of the dependent variable Y.

It should also be remembered that in the analysis, carried out in the following paragraph, a significance level of 5% is established, a useful parameter to establish if there is a consistent relationship between the dependent variable and the independent variable (s).

Moreover, among the variables considered in the regressions we will take only the relations that have an  $R^2$  (level of goodness)  $\geq 0.15$  and of this kind we see the number of asterisks that come out from the regression analysis (3 asterisks mean a strong relationship, without asterisks inexistent or irrelevant relation) to see the significance level with the statistic “t-students” test.

## 2. Statistic analysis

### 2.1 Introduction

This section is dedicated to statistical analysis using regression models to observe whether or not there is a correlation between some significant variable: the regression models used are the linear and multiple linear models.

Like we said before  $R^2$  indicates the proportion of Y variability explained by the explanatory variable X, through the regression model. For example, if  $R^2 = 0.40$  means that 40% of the total variability of Y is explained by the regression model.

Results that have a higher coefficient of determination  $R^2$  ( $\geq 0.15$ ) are considered the best and will be explained and commented in this chapter.  $R^2$  is a parameter, which oscillates between 0 and 1, which makes us understand the adequacy of the regression model.

However, it is not enough just to have a high  $R^2$  to tell us if the model is adequate, but then we should proceed with a test of significance, to exclude the case from the real relationship between the variables, to be compared with a significance value equal to 5 %.

## 2.2 Results of linear regression

### 2.2.1 RAILWAYS, GOODS TRANSPORTED

The equation is:  $Y = +3.513 e^8 + 2.312 e^4 x_1$

All the other results are on this table:

Results:	Numbers	Level of significance
Multiple R-squared ( $R^2$ )	0.1614	
Adjusted R-squared	0.1476	
Residual standard error	$5.024 e^{10}$	
F-statistic	11.74	
P-value	0.001101	**
Intercept	$3.513 e^8$	
$x_1$	$2.312 e^4$	
Correlation	0.4017169	

Analyzing this case, we can see that there is a level of goodness in the regression of almost 20% (16.14%).

The inclination (or  $x_1$ ) is positive,  $2,312 e^4$ , so when the  $x_1$  increases by one unit, the Y increases by that.

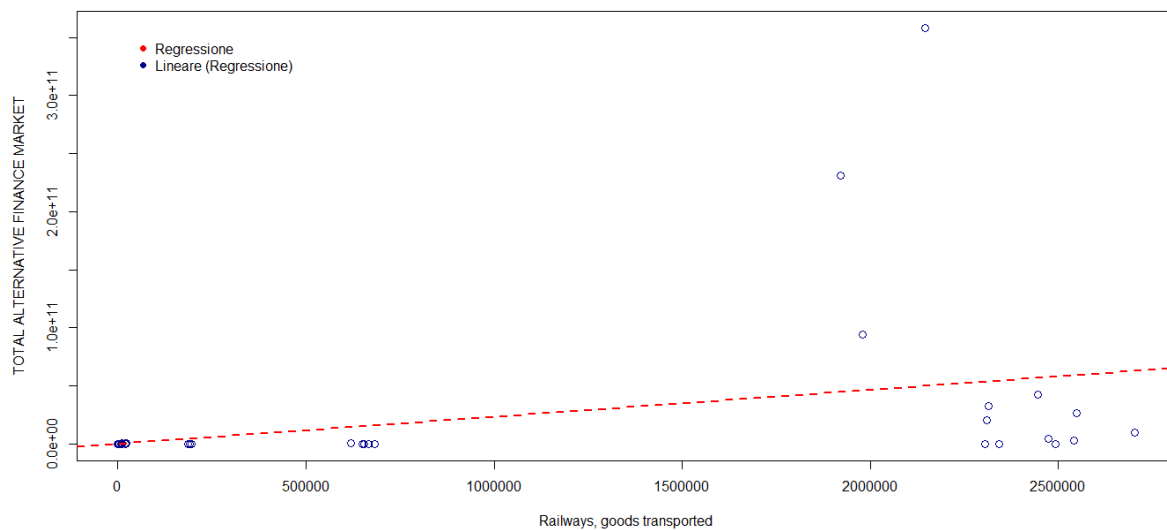
When it concerns the intercept, it has a positive value and means that if the value of  $x_1 = 0$ , y will be equal to  $3,513 e^8$ .

The good relationship between the two variables is also confirmed by a high correlation index (0.4017). As a final analysis, we observe that our p-value (0,001101) has a value lower than our significance level initially established of  $\alpha = 0.05$ ; this indicates that the hypothesis  $H_0$  (null hypothesis) is a hypothesis rejected with significance of 0.05.

Being a value much smaller than 0.05 and even smaller than 0.001 (significance level of 99%), the three \*\*\* means that the result of this regression has an 100% approximate significance, so, the result obtained by the regression is extremely significant.

To conclude, as the number of "Railways, good transported" increases, investments in the alternative finance market increase and viceversa.

The reliability of the result is provided by the p-value.



*Graphic 47*

I start with this first variable because it is interesting the relations between this variable and the total amount of volume in crowdfunding. Also, if this two variables seems far away from each other after the analysis regression (and with our data) we discover that there is a strong relationship.

Regarding this result, I noticed (thanks to data from World Bank Data<sup>44</sup>) that the major countries that have a greater number of goods transported by rail also appear to be countries with high investments in alternative finance markets: think of the first, third and fifth country, which are United States of Americas, China and Canada, countries with the highest crowdfunding investments in the world.

<sup>44</sup> <https://www.indexmundi.com/facts/indicators/IS.RRS.GOOD.MT.K6/rankings>

## 2.2.2 INTERNATIONAL TOURISM, NUMBER OF ARRIVALS

The equation is:  $Y = -2.381 e^9 + 2.913 e^2 x_1$

Results:	Numbers	Level of significance
Multiple R-squared ( $R^2$ )	0.1699	
Adjusted R-squared	0.151	
Residual standard error	$1.315 e^{10}$	
F-statistic	9.006	
P-value	0.004421	**
Intercept	$-2.381 e^9$	
$x_1$	$2.913 e^2$	
Correlation	0.4121907	

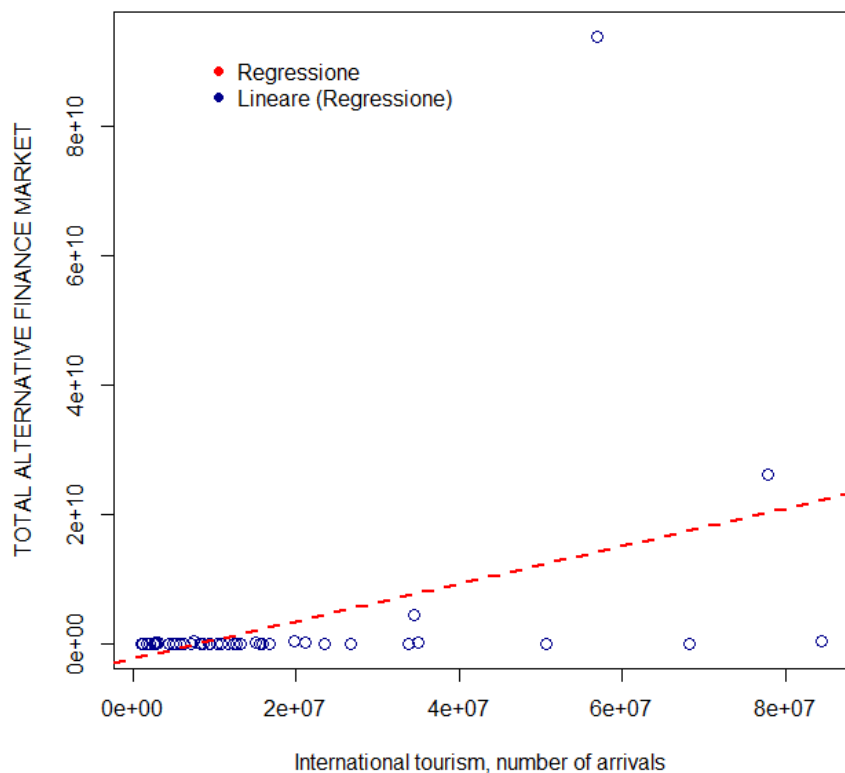
The coefficient of determination of this regression is 0,1699, so almost 17% of goodness.

Also in this line the intercept is negative, so when  $x = 0$  y it will take the value of  $-2,381 e^9$ .

Then we have a positive inclination and it shows us that when a unit of  $x_1$  changes, the Y will increase by  $2,913 e^2$ ; in fact, this affirmation is also reinforced by the correlation of the two variables that reach 0.4121, an index of middle-high correlation between the two parts.

Also in this case the value of the p-value is lower than the significance level 0.05, with a value of 0,004421. This means that the null hypothesis is rejected with significance of 5%. Moreover, with the value, that it is also much lower than the value of 0.01 (significance level of 99%) and with the \*\*\* of significance, means that the result of this regression has an 100% approximate significance, so, the result obtained by the regression is extremely significant.

To conclude, as the number of new businesses increases, investments in alternative finance markets will increase and viceversa.



Graphic 48

The result of this variable could be explained in 2 complementary ways.

I) The countries where there are very high numbers of arrivals have a high level of tourism; in addition, very often crowdfunding activities have an orientation and territorial attention (except for very important platforms such as Kickstarter or some American platforms) and not very extensive outside the country. Therefore, with high tourism, a greater number of people are present in the territory and therefore crowdfunding campaigns will have a greater use, justifying the increase in investments in alternative finance market.

As a further relationship between the variables, through a study by "UNWTO (World Tourism Organization) entitled" UNWTO Tourism Highlights "Edition of 2018"<sup>45</sup>, we can see a coincidence: the countries in which there is more tourism in the world, turn out to be those with more crowdfunding investments, such as France, United Kingdom, USA, Italy etc. (as seen in paragraph II, Geography of crowdfunding).

II) Another possible explanation may be that the countries in which there are more numbers of arrivals, are also the more developed ones, therefore prone to certain dynamics and new technologies of the market and therefore also more inclined to crowdfunding activities: one because they know crowdfunding and two because they know how to use it (Technology-Friendly).

<sup>45</sup> <https://www.travel365.it/file/untwo-tourism-highlights-2018.pdf>



### 2.2.3 GDP (Gross Domestic Product)

II GDP (Gross Domestic Product) represents the value of all the final goods and services produced in the territory of the reference country in a given period of time, at market prices.

It includes the economic activities carried out within the country: services produced by workers, companies and other operators are excluded; while those activities of foreign operators within the country are included. Therefore, the nationality of the operator does not matter but if this takes place within the country.

I decide to make the regression analysis with this variable because the activity of crowdfunding is included in the calculation of the GDP.

From this analysis, I aspect that there is a good feeling with this two variables.

The equation is:  $Y = -2.300 \text{ e}^9 + 4.082 \text{ e}^{-3} \times x1$

Results:	Numbers	Level of significance
Multiple R-squared ( $R^2$ )	0.1959	
Adjusted R-squared	0.1922	
Residual standard error	$2.661 \text{ e}^{10}$	
F-statistic	52.87	
P-value	$6.37 \text{ e}^{-12}$	***
Intercept	$-2.300 \text{ e}^9$	
x1	$4.082 \text{ e}^{-3}$	
Correlation	0.4426321	

Analyzing this case, we can see that there is a level of goodness in the regression of almost 20% (19.59%). The inclination (or x1) is positive,  $4.082 \text{ e}^{-3}$ , so when the x1 increases by one unit, the Y increases by  $4.082 \text{ e}^{-3}$ .

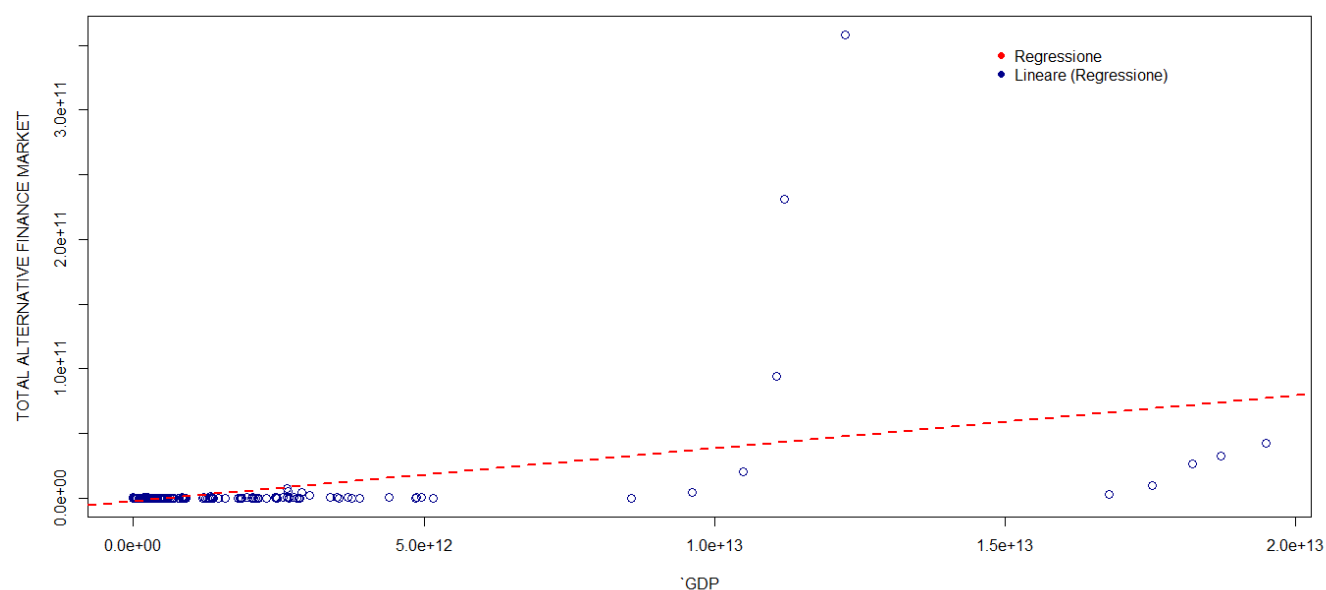
When it concerns the intercept, it has a negative value and means that if the value of  $x1 = 0$ , y will be equal to  $-2.300 \text{ e}^9$ .

The good relationship between the two variables is also confirmed by a high correlation index (0.44). As a final analysis, we observe that our p-value ( $6.37 \text{ e}^{-12}$ ) has a value lower than our significance level initially established of  $\alpha = 0.05$ ; this indicates that the hypothesis  $H_0$  (null hypothesis) is a hypothesis rejected with significance of 0.05.

Being a value much smaller than 0.05 and even smaller than 0.001 (significance level of 99%), the three \*\*\* means that the result of this regression has an 100% approximate significance, so, the result obtained by the regression is extremely significant.

To conclude, as GDP increases, investments in the alternative finance market increase and viceversa.

The reliability of the result is provided by the p-value.



Graphic 49

## 2.2.4 NEW BUSINESSES REGISTERED (NUMBER)

In this analysis, we look at a possible relationship between Y = investments in alternative finance market; and X = number of new business registered.

The equation is:  $Y = -1.224 \text{ e}^8 + 3.515 \text{ e}^3 \times x_1$

Results:	Numbers	Level of significance
Multiple R-squared ( $R^2$ )	0.503	
Adjusted R-squared	0.4996	
Residual standard error	$4.236 \text{ e}^8$	
F-statistic	146.7	
P-value	$< 2.2 \text{ e}^{-16}$	***
Intercept	$-1.224 \text{ e}^8$	
$x_1$	$3.515 \text{ e}^3$	
Correlation	0.7092172	

The coefficient of determination of this regression is found to be the second highest with a value of 0.503: the regression has a goodness level a little more than 50%.

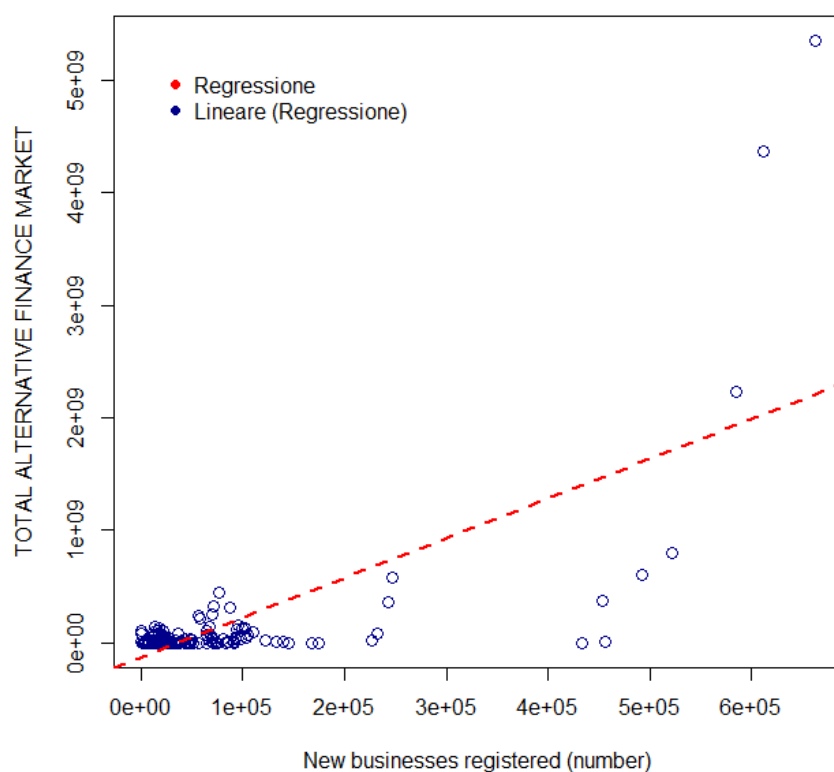
Also in this line the intercept is negative, so when  $x = 0$  y it will take the value of  $-1.224 \text{ e}^8$ .

Then we have a positive inclination and it shows us that when a unit of  $x_1$  changes, the Y will increase by  $3.515 \text{ e}^3$ ; in fact, this affirmation is also reinforced by the correlation of the two variables that reach 0.709, an index of high correlation between the two parts.

Also in this case the value of the p-value is lower than the significance level 0.05, with a value of  $< 2.2 \text{ e}^{-16}$ .

This means that the null hypothesis is rejected with significance of 5%. Moreover, with the value, that it is also much lower than the value of 0.01 (significance level of 99%) and with the \*\*\* of significance, means that the result of this regression has an 100% approximate significance, so, the result obtained by the regression is extremely significant.

To conclude, as the number of new businesses increases, investments in alternative finance markets will increase and viceversa.



*Graphic 50*

As mentioned before, as the number of registered businesses increases, increase also the crowdfunding investments also. The result obtained would be reflected in real life, as the number of crowdfunding businesses over the years is increasing much more than traditional activities. This is because traditional businesses do not have the same advantages over the former: disintermediation by banks or other intermediaries, ease of opening and finding funds for non-traditional companies.

Furthermore, crowdfunding activities are increasingly diversifying towards traditional sectors, managing to be much more efficient than traditional businesses<sup>46</sup>.

This phenomenon is receiving all this attention, because it is seen as a form of innovation that can rejuvenate and make more efficient the way of doing business (with the figure of the world-wide-web entrepreneur)<sup>47</sup>.

<sup>46</sup> [http://www.iban.it/frontend/iban/public/file/Crowdfunding\\_FinalReport\\_EN.pdf](http://www.iban.it/frontend/iban/public/file/Crowdfunding_FinalReport_EN.pdf)

<sup>47</sup> [http://www.mopi-italia.org/userfiles/Angelino%20Molinaro\\_individual%20paper.pdf](http://www.mopi-italia.org/userfiles/Angelino%20Molinaro_individual%20paper.pdf)

## 2.2.5 PATENT APPLICATION, RESIDENTS

Last but not least, we have the Patent Application of residents; this regression has the highest  $R^2$  of all the others. So, the  $x_1$  represent the “Patent Application/Residents” and the dependend variable, Y is the amount of investment in alternative finance market.

The equation is:  $Y = -6.081 \text{ e}^9 + 1.580 \text{ e}^5 x_1$

Results:	Numbers	Level of significance
Multiple R-squared ( $R^2$ )	0.6608	
Adjusted R-squared	0.6552	
Residual standard error	$3.195 \text{ e}^{10}$	
F-statistic	118.8	
P-value	$5.927 \text{ e}^{-16}$	***
Intercept	$-6.081 \text{ e}^9$	
$x_1$	$1.580 \text{ e}^5$	
Correlation	0.8128965	

We said that this regression has the highest value for the coefficient of determination, and it is equal to 0,6608 (66% level of goodness).

We can say that this variable of the regression’s analysis has the best results and the best connection with our dependent variable, the investment in alternative finance market (Y).

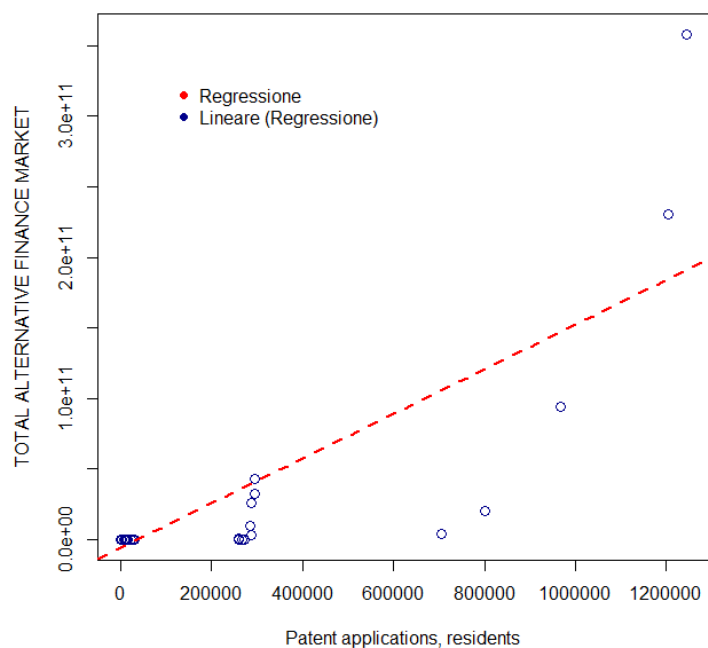
Also, our last regression has a negative intercept and means that when  $x_1 = 0$  the average value of Y is -  $6,081 \text{ e}^9$ .

Instead, the variable  $x_1$  is positive: as a unit value of  $x_1$  varies, the variable Y will increase by  $1.580 \text{ e}^5$ .

The trend of these two variables shows a strong correlation and we can deduce it from the high value of the correlation, 0.8128; being a value very close to 1 (the perfect correlation), it could be foreseen that if we go to modify the value of one of these two variables, the other variable will also be modified in a similar manner (Ex. if the variable  $x_1$  increases of one, the y will change with a value very close to 1).

In this case the null hypothesis is to be rejected with significance of 5%, in fact our p-value has a much lower value compared to 0.05 equal to  $5.927 \text{ e}^{-16}$ .

Being a value much smaller than 0.05 and even smaller than 0.001 (significance level of 99%), the three \*\*\* means that the result of this regression has an 100% approximate significance, so, the result obtained by the regression is extremely significant.



*Graphic 51*

To do a summit, as the patent applications increase also the investments in alternative finance market increase and viceversa.

This result is very interesting, as more and more crowdfunding activities are used today to finance projects for start-ups, which, as a rule, obtain a patent for carrying out a specific activity.

Furthermore, a study by "Christofer A. Cotropia" of 25 July 2018, entitled "Crowdfunding and Patents"<sup>48</sup>, 9184 crowdfunding campaigns are considered for an analysis on the relationship between patents and the world of crowdfunding. This research states that a crowdfunding activity, if provided with a patent, or after the latter's request for confirmation, has greater benefits than the activities that do not have the patent. To take an example, crowdfunding activities that will have patents or request them will be easier to attract investments, as they are considered more attractive and secure crowdfunding campaigns.

<sup>48</sup> <https://www.law.berkeley.edu/wp-content/uploads/2018/08/Christopher-Cotropia-Paper.pdf>

## 2.3 Results of multiple linear regression

In this regression (multiple linear), we don't put limit at the value of  $R^2$ : we didn't consider only the regression with an  $R^2$  more than 0,15; i decided to take these pairings of variables because they have a greater meaning and values than the others.

So, in this analysis I focused mainly on regressions that we have a concrete value in the reality of crowdfunding. Within each analysis, studies will also be included (where possible) of the results reported by the regressions. Also noteworthy is the absence of graphs of these two-variable analyzes; this is because, unlike the one-variable ones, they would not be two-dimensional but three-dimensional graphics and therefore a bit difficult to represent.

Like last things, now we talk also about Adjusted R-squared: this variable will say us the suitability of the variables to the model, because it penalizes the extra variables extraneous to the model; so, if the value is positive we will know that our data are suitable for the model.

### 2.3.1 “LABOR TAX AND CONTRIBUTIONS” AND “RANK: STARTING A BUSINESS”

In this regression,  $x_1$  = Labor tax and contributions;  $x_2$  = “Rank: Starting a business”; and  $Y$  = “Investments in alternative finance market”.

Results:	Numbers	Level of significance
Multiple R-squared ( $R^2$ )	0.04779	
Adjusted R-squared	0.03885	
Residual standard error	$2.923 \times 10^{-10}$	
F-statistic	5.345	
P-value	0.005434	
Intercept	$-7.602 \times 10^{-8}$	
$x_1$	$4.323 \times 10^{-10}$	**
$x_2$	$-8.783 \times 10^{-7}$	

This regression has a  $R^2$  like the 5% (0,04779) and also a positive Adjusted R-squared (0,03885) that it represents that the data we use for the regression is suitable for the model.

This regression has a negative intercept (like  $-7.602 \times 10^{-8}$ ) and so this means that if  $x_1$  and  $x_2$  are equal to 0, the value of  $Y$  will be  $-7.602 \times 10^{-8}$ .

For the variable, one is positive and one is negative. The first one, represent “Labor tax ...” and so means that (if  $x_2 = 0$ ) if the variable  $x_1$  has a unit increase also the variable  $Y$  will increase by one. The opposite for the second variable that if it has a unit increase, the variable  $Y$  will decrease by one.

Therefore, explained better, if the tax variable increases, investments in alternative finance market increase; while, again the latter, the investments decrease as the Starting a Business variable increases.

In the end, we see the P-value; 0,005 is a value lower than 0,05 (level of significance 95%) so, the null hypothesis is rejected; also, this number is lower than 0,01 (level of significance 99%) and it means that the result of this regression is extremely significant.

Between the two variables,  $x_1$  is more significant with the dependent variable,  $Y$ , respect  $x_2$ : so, it means that for the investment in alternative finance market is more relevant the taxes respect to the “Starting a business”, because they have a better correlation.

The  $x_1$ , Labor Tax and Contributions, “is the amount of taxes and mandatory contributions on labor paid by the business”<sup>49</sup>; instead, the  $x_2$ , Rank: Starting a Business, “measures the number of

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<sup>49</sup> <https://www.indexmundi.com/facts/indicators/IC.TAX.LABR.CP.ZS>



procedures, time, cost and paid-in minimum capital requirement for a small- to medium-size limited liability company to start up and formally operate in each economy's largest business city"<sup>50</sup>.

The result is also very significant in the economic world. Q: This is because it is very reasonable that, for  $x_1$ , as taxes and contributions increase, investments in alternative finance market increase: this happens because the activities through crowdfunding do not meet the same taxation that a traditional business must support. For a crowdfunding campaign, just create a project and place it on the platform to start collecting capital.

For the variable  $x_2$ , on the other hand, with the decrease of all the procedures, the minimum capital, time and costs, this cause a streamlining of the various investments in crowdfunding.

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<sup>50</sup> <https://www.doingbusiness.org/en/data/exploretopics/starting-a-business>

### 2.3.2 “START-UP PROCEDURES TO REGISTER A BUSINESS” AND “EDUCATIONAL ATTAINMENT, AT LEAST BACHELOR/MASTER/DOCTORAL’S (POPULATION 25+)”

In this regression, we have three cases: A for Bachelor; B for Master; and C for Doctoral.

About A,  $x_1$  = Start-up procedures to register a business;  $x_2$  = Educational attainment, at least Bachelor; and  $Y$  = investments in alternative finance market.

About B and C,  $x_1$  and  $Y$  remain the same, instead,  $x_1$  in B is “Educational attainment, at least Master” and in C is “Educational attainment, at least Doctoral”.

Respect to all the other variable (single or multiple), I decide to do the analysis of these 3 variables as one, to describe better the relationship between the investments in alternative finance market and the Education at different levels (Bachelor, Master and Doctoral).

	1° regression	2° regression	3° regression
Results:	(Bachelor)	(Master)	(Doctoral)
Multiple R-squared ( $R^2$ )	0.086	0.03126	0.004163
Adjusted R-squared	0.06195	- 0.02311	- 0.02204
Residual standard error	4.626 e <sup>9</sup>	4.832 e <sup>9</sup>	4.829 e <sup>9</sup>
F-statistic	3.575	0.1192	0.1588
P-value	0.03281	0.8878	0.8534
Intercept	-6.561 e <sup>9</sup>	1.961 e <sup>8</sup>	4.22 10 <sup>8</sup>
$x_1$	2.905 e <sup>8</sup>	3.442 e <sup>7</sup>	1.26 10 <sup>8</sup>
$x_2$	2.411 e <sup>8</sup>	5.652 e <sup>7</sup>	- 3.99 10 <sup>7</sup>
Level of significance	$x_1$ $x_2$ **		

For this case, we also divide the analysis for each case and in the end, i will explain the meaning of all these three variables.

#### CASE A (BACHELOR)

This regression has an  $R^2$  of almost 8% (0.086), and the adaptability of data and variables is also expressed by the Adjusted R-squared, which has a positive value (0,06195).

The intercept is negative, so when the variables  $x_1$  and  $x_2$  are equal to 0 the value of  $Y$  will be -6.561 e<sup>9</sup>.

As for the variables  $x_1$  and  $x_2$ , they are both positive. This indicates that both the start-up procedures to register a business and the educational attainment (Bachelor) vary, so investments in alternative finance market also vary (ex. if  $x_1$  and  $x_2$  increase,  $Y$  also increases).

The p-value has a lower level than our 0.05 (0.03281) so, the null hypothesis is rejected; since it is not less than 0.01 (99% significance level), the result will be significant, but not excessively significant.

Between  $x_1$  and  $x_2$ , the most correlated variable with the variable Y is  $x_2$ ; therefore, the educational attainment (Bachelor) in the regression has a greater weight as regards the changes in the investments in alternative finance market.

#### CASE B (MASTER)

The second regression has a smaller  $R^2$  than the regression A equal to 0.03126; in addition to the fact that the level of determination decreases, the value of the Adjusted R-squared is negative (-0,0231) and indicates that the data collected are not suitable for the type of analysis. This makes us understand that with the variable  $x_2$  of case B, the correlation between the variables in case A is diminished and almost completely disappeared.

Unlike the first regression, we have a positive intercept, so when the variables  $x_1$  and  $x_2$  are equal to 0 the value of Y will be equal to  $1.961 \cdot 10^8$ .

Also, the variables  $x_1$  and  $x_2$  are positive, so when the variables  $x_1$  and  $x_2$  change, the variable Y will also vary (ex. If  $x_1$  or  $x_2$  will decrease, Y will also decrease).

Here we have a P-value of 0.8878; it is a value much more than 0.05, so we accept the null hypothesis making the results of this regression not significant.

#### CASE C (DOCTORAL)

In the latter case,  $R^2$  continues to decrease until it reaches a value of 0.004163; therefore, passing from case A to case B,  $R^2$  decreases. Furthermore, the Adjusted R-squared remains negative (-0,02204) and indicates, as in case B, that the sampled data are not very suitable for the model being analyzed.

Also in the latter case, the intercept is positive, so in the case where  $x_1 = 0$  and  $x_2 = 0$ , the value of the Y variable will be  $4.22 \cdot 10^8$ .

Unlike the previous cases (A and B), one of the two variables are negative and the other positive: the variable  $x_1$  is positive, so if these variables increase (with  $x_2 = 0$ ), the Y will also increase, and the variable  $x_2$  it is negative therefore, as  $x_2$  decreases (with  $x_1 = 0$ ) the variable Y will increase and vice versa.

The P-value of this regression is 0.8534, very similar to the case B. The null hypothesis is therefore accepted ( $0.8534 > 0.05$ ) and from the analysis there is no significant result.

As for R2, also the P-value from case A decreases in cases B and C, passing from a significant result in case A, to two results that do not detect significance.

To summarize, we pass from a case A in which there is a significant result with a P-value lower than 0.05, to a case B and C where a value of the P-value is found much higher than the reference value, not finding any significance.

Thus, there is a comparison with a level of education (BACHELOR) and less and less when it concerns Master and Doctoral. Therefore, it can be deduced that investments in alternative finance market do not depend on the level of education of the subjects involved. In fact, if we go to increase the level of education (with Master and Doctoral) there is no evidence of an increase in investments in this type of activity.

The result of this multiple regression is consistent with a study<sup>51</sup> by the ISTAT concerning the figure of the “Startupper”, and it can be seen that the number of these decreases with the quality of the qualification that one possesses.

According to ISTAT, 78.2% have a bachelor's degree, while only 21% hold a research doctorate. As another significant datum from this analysis, it is noted as in all sectors, except for Research and Development Activities and above all for Commercial Activities, there is a greater percentage of members with a shorter course of study (Bachelor's or lower).

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<sup>51</sup> <https://www.istat.it/it/files/2018/02/Rapporto-Startup.pdf>

### 2.3.3 “TIME REQUIRED TO START A BUSINESS (DAYS)” AND “LABOR TAX AND CONTRIBUTIONS”

In this regression,  $x_1$  = “Time required to start a business”;  $x_2$  = labor tax and contributions; and  $Y$  = investments in alternative finance market.

Results:	Numbers	Level of significance
Multiple R-squared ( $R^2$ )	0.03259	
Adjusted R-squared	0.02351	
Residual standard error	$2.946 \text{ e}^{10}$	
F-statistic	3.588	
P-value	0.02934	
Intercept	$-5.738 \text{ e}^9$	
$x_1$	$5.909 \text{ e}^7$	
$x_2$	$3.732 \text{ e}^8$	*

The  $R^2$  of this regression is 3% (0.03259) and the adjusted R-squared positive (0,02351) shows the adaptability of the data collected to the reference model.

The intercept is negative, so when the two  $x$ 's are equal to 0, the value of  $Y$  will be  $5,738 \text{ e}^9$ .

The variables are both positive, so as one of the two variables increases, the  $Y$  will also increase. The time needed to open a business and the fees if they vary will do so with an analogous sign to that of investments in alternative finance market.

As regards the P-value, it has a value less than 0.05 (0.02934) so the null hypothesis is refused and the analysis gave a significant confirmation of correlations between the  $x$  and the  $Y$ . The acknowledgment is valid with a significance level of 95% and not 99% because the p-value is greater than 0.01: therefore, the feedback is significant, but not excessively.

Of the two variables, the most significant is the "Labor Tax and Contributions" variable, which therefore affects investments in alternative finance market more significantly than the "Time required to start a business" variable.

The variable  $x_2$ , analyzed before in regression 2.3.1, we have seen that with the variation of this variable it varies in a similar way and with the same sign of the investments in crowdfunding.

While, the variable  $x_1$ , Time required to start a business, "is the number of calendar days to complete the procedures to legally operate a business"<sup>52</sup>. So, when taxation and the number of

<sup>52</sup> <https://data.worldbank.org/indicator/IC.REG.DURS>

days to manage a company's legal procedures increases, crowdfunding investments increase both due (and viceversa) to non-tax difficulties and because a crowdfunding campaign requires less time, compared to to a traditional company.

#### 2.3.4 “TIME REQUIRED TO START A BUSINESS (DAYS)” AND “RANK: STARTING A BUSINESS”

In this regression,  $x_1$  = Time required to start a business”;  $x_2$  = Starting a business”; and  $Y$  = investments in alternative finance market.

Results:	Numbers	Level of significance
Multiple R-squared ( $R^2$ )	0.04508	
Adjusted R-squared	0.03612	
Residual standard error	$2.927 \cdot 10^9$	
F-statistic	5.028	
P-value	0.007352	
Intercept	$8.96 \cdot 10^9$	
$x_1$	$5.81 \cdot 10^8$	**
$x_2$	$-1.93 \cdot 10^8$	**

In the last analysis, we note an  $R^2$  with a value equal to 0.04508 (4%) together with an Adjusted R-squared positive (0,03612), that indicates the goodness of the data used, compared to the model.

In the latter case, the intercept is positive, so when  $x_1 = 0$  and  $x_2 = 0$ , the variable  $Y$  will be equal to  $8.96 \cdot 10^9$ .

The variable  $x_1$  has a positive value, while  $x_2$  has a negative value: this means that as the two  $x$ 's vary, the  $Y$  will vary with a sign analogous to the variable  $x_1$  and with a sign opposed to the variable  $x_2$ .

Finally, looking at the P-value, we can see that its value (0,007352) is lower than our reference value 0.05, but lower even at a significance level of 95%. For this, the null hypothesis is rejected and the result exposed by this analysis has an extremely significant value.

In this analysis, there is also a similar level of significance between the two variables, which influence the reference variable  $Y$ : neither is more significant than the others compared to investments in alternative finance market.

The variable  $x_1$ , analyzed in regression 2.3.3, brings an increase in investments in alternative finance market and vice versa to its increase.

The  $x_2$ , analyzed in regression 2.3.1, is inversely proportional to the crowdfunding investments.





# Conclusions

As mentioned in the introduction, the topic of our study was observed and documented during the course of this thesis; after having done it now we are able to draw conclusions and better understand the purpose of this study.

This study aims to analyze the emerging phenomenon of online alternative finance and crowdfunding. To this end, an analysis was conducted on three levels: initially, on the literature concerning this phenomenon, highlighting various definitions and classifications; subsequently, with a world-wide overview of the crowdfunding situation divided by continents and countries, where this phenomenon is more present; finally, with a statistical analysis (linear and multiple linear regressions) to try to find variables that on one hand could facilitate the interpretation of the world of crowdfunding and on the other could find possible significant relationships with variables of different types, with economic.

The data used for regression purposes were taken from Eurostat (for European countries) and World Bank (for the remaining countries).

From statistical analysis we were able to find significant results that highlight particular relationships with online alternative finance.

For example, we observed that there are some highly significant relationships: with regard to linear regressions we found, mainly, that both Gross Domestic Products (GDP), the number of patents (residents) and the number of registered businesses are directly proportional to online alternative finance; instead for multiple linear regressions, there was a non-correlation between this phenomenon and the level of education of people (Educational Certificate), while online alternative finance is directly proportional to the time taken to open a business and to the 'increase taxation for traditional businesses.

Furthermore, it must be kept in mind that the type of analysis was not conducted only with economic / financial variables, but also with socio-cultural / social variables.

Furthermore, being a worldwide phenomenon, the relationships found may vary depending on the country of origin and its culture, being able to be significant in one place rather than another; this analysis leads to results that may not be found in particular cases (exceptions).

A recommendation for further future research could be to go and perform a specific analysis of this phenomenon in various areas and in different areas; this in order to have a clearer view of the phenomenon that we face and its evolution on the market.



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## **Thesis summary**







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di ***IMPRESA E MANAGEMENT***

Cattedra ***PROGETTAZIONE ORGANIZZATIVA***

***GEOGRAPHY  
OF  
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# Introduction

This research aims to inform readers about the new world of crowdfunding. One of the news concerns the crowdfunding activity; the latter is a money collection initiative intended for a project, in any context, of someone. In practice, a project is presented and described on the various platforms, to which people can decide to join through a small investment (at will). This new way of subsidizing projects is innovative in that financial intermediaries, such as banks and insurance companies, are bypassed and therefore finding funds for their activities is easier and without limitations. It was this last discovery that led me to the realization of this study, because through this system projects can be implemented that would have been difficult before, if not impossible to achieve. Think of projects for sick people, who would not be able to raise sufficient funds to heal themselves without this instrument of mass involvement. Or you can think of many Start-up ideas from young entrepreneurs, who, having no funds to put their project into practice, succeeded thanks to the interest of the people for that activity and their participation.

Through this study, we will lead the reader to discover the current situation of the crowdfunding market. In chapter 1, an overview of this world will be given with specific attention to the various types, its history and its literature. Secondly, we will take a global picture of the phenomenon (in Chapter 2) and also, specifically, in the various countries.

Later in Chapter 3, we will focus on a more specific analysis of the phenomenon; the mission of this thesis is to go and find, through a statistical analysis, the elements (variables) that go to influence the investments in Online Alternative Finance Market. These variables, taken into consideration in the analysis, were collected from large databases: Eurostat, for the variables of European countries, and World Bank, for the remaining countries of the world.

After describing the situation in the world of crowdfunding, divided by continents, we will proceed through statistical regressions, which will highlight, possibly, possible relationships between crowdfunding investments and the variables taken into consideration. These regressions will be of two types: linear, when it will concern the analysis of a variable ( $x_1$ ) in relation to our Y (investments in online alternative finance market); and multiple linear, for the analysis of the relationship between two possible variables ( $x_1$  and  $x_2$ ) and our reference Y.

The tool used for the regression analysis is "R-Studio", a free software for statistical data analysis.

# I Literature review

<sup>53</sup>The term “crowdfunding” was coined by Michael Sullivan in 2006; he tried to create a platform (Fundavlog) that permitted to make online donations for videoblogs project.

<sup>54</sup>“Crowdfunding is a novel method for funding a variety of new ventures, allowing individuals founders of for-profit, cultural, or social projects to request funding from many individuals, often in return for future products or equity. Crowdfunding projects can range greatly in both goal and magnitude, from small artistic projects to entrepreneurs seeking hundreds of thousands of dollars in seed capital as an alternative to traditional venture capital investment”.

This phenomenon has different definitions:

Definitions of crowdfunding

Author(s) (date)	Definition
Ordanini (2009)	Crowdfunding is an initiative undertaken to raise money for a new project proposed by someone, by collecting small to medium-size investments from several other people (i.e., a crowd).
Lambert and Schwenbacher (2010), Belleflamme, Lambert and Schwenbacher (2013 and 2014)	An open call, essentially through the Internet, for the provision of financial resources either in form of donation or in exchange for some form of reward and/or voting rights in order to support initiatives for specific purposes.
Lehner (2013)	CF [crowdfunding] means tapping a large dispersed audience, dubbed as “the crowd,” for small sums of money to fund a project or a venture.
Mollick (2014)	Crowdfunding refers to the efforts by entrepreneurial individuals and groups – cultural, social, and for-profit – to fund their ventures by drawing on relatively small contributions from a relatively large number of individuals using the Internet, without standard financial intermediaries.
Colgren (2014)	Crowdfunding is the convergence of social media, Big Data, and cloud technologies to significantly revolutionize the means by which small and mid-sized entities (SMEs) and start-ups can access capital in a cost-effective manner.
Lehner (2014)	CF means tapping a large, dispersed audience dubbed as “the crowd,” for small pledges that can sum up to incredible amounts due to the sheer numbers of participants.
Ahlers, Cumming, Guenther and Schweizer (2015)	An umbrella term used to describe an increasingly widespread form of fundraising, typically via the Internet, whereby groups of people pool money, usually (very) small individual contributions, to support a particular goal.
Belleflamme, Omrani and Peitz (2015)	Crowdfunding can be seen as an open call to provide financial resources. Crowdfunding mostly takes place on crowdfunding platforms (CFPs), i.e., Internet-based platforms that link fundraisers to funders with the aim of funding a particular campaign by typically many funders.

Table 1: <https://pdfs.semanticscholar.org/3a2e/f7c64aafd0a0fed358375ddbc5b039a735a3.pdf>

To understand better this phenomenon, we describe its key element.

1. **Crowd**, need the contributions from a large and dispersed audience;
2. **Funding**, the contributions are in form of financial resources (i.e., money) and are usually small;
3. **Alternative finance**, on the one hand it establishes the interest of the crowd and on the other can be a threat to professional investment for its disintermediation nature;
4. **Models**, the crowd can receive a kind of reward, like voting rights, a share of equity and so on;
5. **Purpose**, fund has a specific purpose, for example cultural, social or for-profit purpose;
6. **Online**, the crowdfunding can be offline or online; but since the birth of online crowdfunding, like Kiva or Kickstarter, the researchers are interested in this new phenomenon.

<sup>53</sup> <https://pdfs.semanticscholar.org/3a2e/f7c64aafd0a0fed358375ddbc5b039a735a3.pdf>

<sup>54</sup> “The dynamics of crowdfunding: An exploratory study” of Ethan Mollick, Journal of Business Venturing, published by Elsevier Inc. 2013

<sup>55</sup>This new method of funding entrepreneurial ventures has some differences from venture capital funding. First, it is not oligopolistic, but democratic. Second, as opposed to tightly-knit venture capital community, crowdfunding is loosely organised. Third, unlike the close networks of Silicon Valley, in crowdfunding every communication is open, in online communities. Fourth, the current form of crowdfunding doesn't involve monitoring rights and equity. <sup>56</sup>This process of directly financing over the Internet is growing fast. Something so important about the crowdfunding is that it can resolve the geographic dispersion of investors. The online platforms can help to reduce the market frictions for the geographic distance, normally associated with financing early stage projects.

The interest things of this world is that there are a lot of kind of crowdfunding.

Alternative Finance Model	Definition
P2P Consumer Lending	Individuals or institutional funders provide a loan to a consumer borrower.
P2P Business Lending	Individuals or institutional funders provide a loan to a business borrower.
Invoice Trading	Individuals or institutional funders purchase invoices or receivable notes from a business at a discount.
Equity-based Crowdfunding	Individuals or institutional funders purchase equity issued by a company.
Reward-based Crowdfunding	Backers provide finance to individuals, projects or companies in exchange for non-monetary rewards or products.
Real Estate Crowdfunding	Individuals or institutional funders provide equity or subordinated-debt financing for real estate.
P2P Property Lending	Individuals or institutional funders provide a loan secured against a property to a consumer or business borrower.
Balance Sheet Business Lending	The platform entity provides a loan directly to a business borrower.
Donation-based Crowdfunding	Donors provide funding to individuals, projects or companies based on philanthropic or civic motivations with no expectation of monetary or material return.
Debt-based Securities	Individuals or institutional funders purchase debt-based securities, typically a bond or debenture at a fixed interest rate.
Balance Sheet Consumer Lending	The platform entity provides a loan directly to a consumer borrower.
Mini-Bonds	Individuals or institutions purchase securities from companies in the form of an unsecured retail bonds.
Profit Sharing	Individuals or institutions purchase securities from a company, such as shares or bonds, and share in the profits or royalties of the business.
Balance Sheet Property Lending	The platform entity provides a loan secured against a property directly to a consumer or business borrower.

Table 2: Expanding Horizons, The 3th European Alternative Finance – Industry Report” of “University of Cambridge (Judge Business School” with the support of “BBVA” and “CME Group Foundation.

<sup>55</sup> “Steps away by the crowd? Crowdfunding, Venture Capital and the Selection of Entrepreneurs”, of Ethan Mollick, The Warthon School of the University of Pennsylvania

<sup>56</sup> “Playing both sides of the market: success and reciprocity on crowdfunding platforms of “David Zvilichovsky, Yael Inbar and Ohad Barzilay”, Version of September 2015.

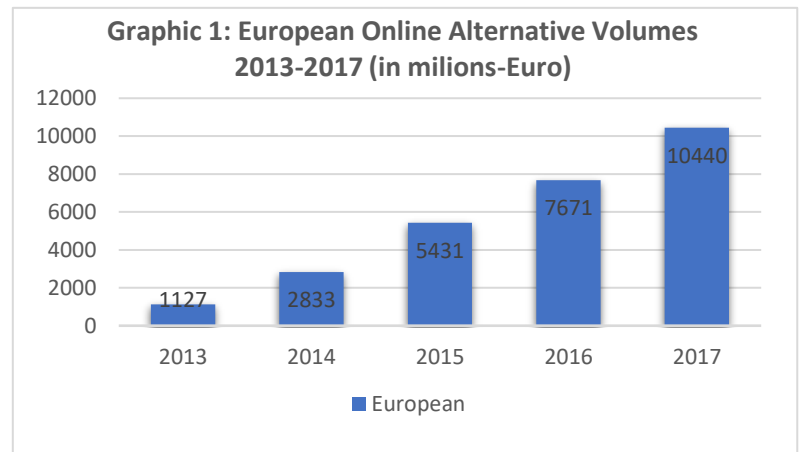
## II Geography of crowdfunding

### 2.1 Europe

We start this analysis from the situation of Europe and its most important country.

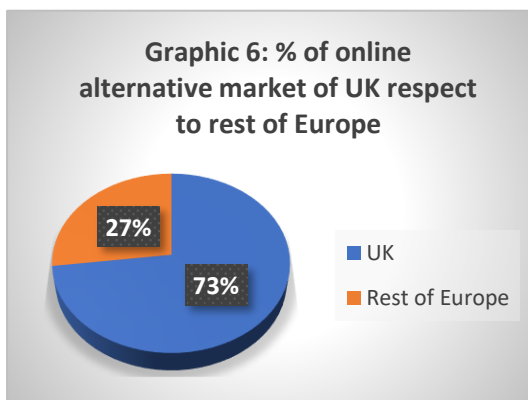
“In 2016 the online alternative finance market continued to grow across Europe”.

The market volume increased by the 41% annually from € 5.431 million in 2015 to € 7.671 million in 2016.



<sup>57</sup>“In 2016 the online alternative finance market continued to grow across Europe”.

The market volume increased by the 41% annually from € 5.431 million in 2015 to € 7.671 million in 2016. Instead in 2017 the online alternative finance market grew again and arrived to more than € 10 billions. Compared to America and Asia, Europe is smaller but has a more constant annual growth, 85% annually from 2013 to 2016. In the Americas, the United States have the 98% of the volume and they grow of 22%. In the Asia, China accounts for the 99% for the volume. United Kingdom is the best country in Europe when we talk about crowdfunding, then there are other 4 like we see in this Graphic. Italy is the exception, because is not in the best 5 countries, but we analyze the same its situation.



We said that the UK, in 2017, represents the 73% of all European volume. <sup>7</sup>In 2015 the volume market of UK arrives to £ 5.608 milion; France and Germany, the second and third arrive to respectively £ 444 and £ 322 milion. So, the UK represent a single market that it is bigger in volume than the summit of the other rest of the country. Think also that in 2017 the online alternative finance volumes raised over than £ 7 billions. For this we decide to talk separately about this country, and not before with the rest of

the country that they, for volume, can't compete with UK.

After doing a picture of this phenomenon in Europe in general, now we go to analyze specified the volumes, the model, the main platform and the regulation of the first 6 countries in Europe: United Kingdom; **France**, in 2017, remained the market leader in Europe alternative finance (after UK) with a grow of 40%. In 2016, it represented the 22% of all alternative finance volumes (444m of Euro), instead in 2017 grew also more and it raised over € 660 million; **Germany** remains the second country for volumes in Alternative Finance (excluding UK) with the 15,6% of the volumes of all European Alternative Finance market. In the 2017 the total amount in Germany arrives to € 595 million; **Benelux** (Netherlands, Belgium and Luxembourg) grew

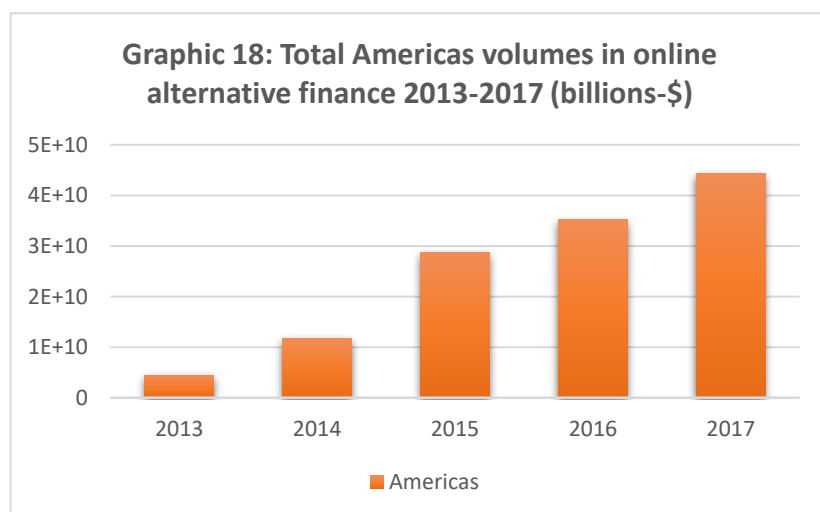
<sup>57</sup> Expanding Horizons, The 3th European Alternative Finance – Industry Report” of “University of Cambridge (Judge Business School” with the support of “BBVA” and “CME Group Foundation.

by the 67% in 2016 becoming the fourth largest market for alternative finance with a total volume of € 246 million (in 2017 it raised over 372 millions of euro: almost Netherlands arrived to € 280 million, Belgium to € 91 million and Luxembourg the rest); **Nordics** (Denmark, Sweden, Norway, Iceland and Finland) in 2016 grew by the 211%, that is bigger than the average four-year grow rate of 76%- the total volumes of this market account for 220 million of euro so it represents the 15,6% of all European volumes (excluding UK) - in the 2017 the situation is this, Finland € 197 millions, Sweden € 196 million, Denmark € 43 million, Norway € 12 million and € Iceland 0,6 million;

and **Italy** in 2016 is the sixth largest market in Europe, with a growth rate of 249% (from € 32 million to € 127 million. Italy has grown exponentially year by year: in fact, it grew also in 2017 and it raised over 241 million with a growth of 90%.

## 2.2 Americas

After talking about European alternative finance market, we talk about this market in the Americas. In the whole mainland (north, south, central), there is a continuous development of Alternative Finance Market and it becomes more mainstream for a lot of companies, like start-up, little firm and also for a lot of consumers.



<sup>58</sup>American market, with time, become also subject of interest of industry, government and academy, that start to study and regulate this phenomenon in growing. In 2017, the total amount is \$ 44 billion, grown by 26% from the \$ 32,5 billion in 2016; this sector has an average annual growth of 89% and in the last 5 years (2013-2017) raised over \$ 124 billions (35% in 2017).

About this mainland, we decide to analyze better only some country: **United States**, in 2017 the total amount of volumes is more than \$ 42 billions, from the \$ 34 billion of 2016 and \$ 28 billion of 2015; **Canada**, it increased like the 114% every year and for example, from 2015 to 2017, the total amount changes respectively from almost \$ 190 million, to \$ 317 million and in the end, arrive to \$ 867,6 million in 2017; and **Lac region** (Brazil, Mexico, Chile and Argentina), it represents the 1% of the total amount in online alternative finance market and ,in 2017, it succeed in raising over \$ 663 millions. About the previous year, it grows of the 94% respect to the 2016 (\$ 342 million).

<sup>58</sup> "REACHING NEW HEIGHTS – The 3<sup>RD</sup> Americas Alternative Finance Industry Report" written by "University of Cambridge" of December 2018.

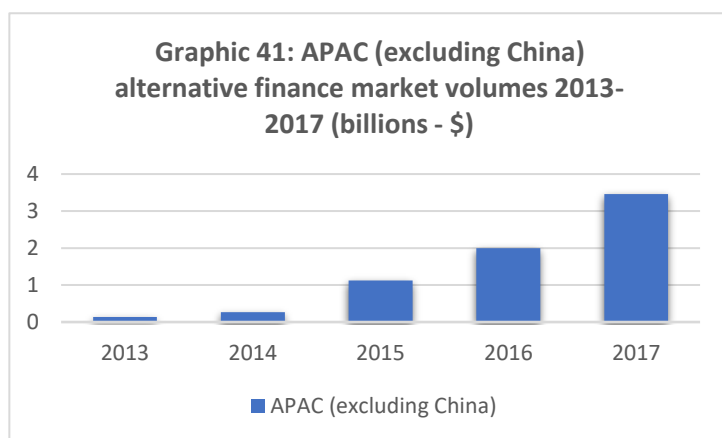
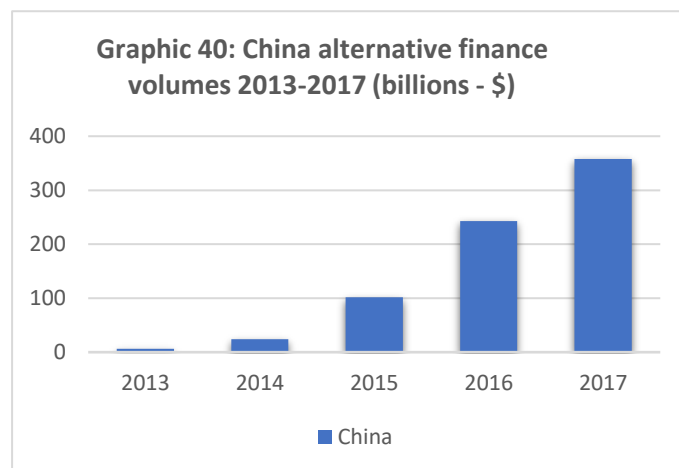
## 2.3 Asia-Pacific region

After talking about Europe and Americas, now we discuss about Online Alternative Finance Market in Asia-Pacific region. In this mainland, called also APAC, China count the 99% of the total volumes, instead all the other areas count only the 1%. Of this part, the 39% is covered by Oceania, the 44% the East Asia, the 8% the Sud-East Asia and the 9% the South & Central Asia.

<sup>59</sup>About the total volume of Apac region, in 2017, it succeeded in raising over \$ 361 billions, divide approximately in China with \$ 358 billion in China and like \$ 3 billion in the rest of Asia-Pacific area; in 2016 was \$ 245 billion, divide in \$ 243 billion from China and \$ 2 billion in the rest of this mainland.

More specifically, about China we can see that from 2013 grew until arrive to 2017. In 2013, it raised like \$ 6 million, in 2014 like \$ 24 billion, in 2015 like \$ 102 billion, in 2016 like \$ 243 billion and in 2017 arrived to \$ 358 billion; we can see that from 2015 to 2016 the volumes of China grew about the 138%, instead from 2016 to 2017 the growth rate was 48%.

This decreased of this rate happen because, in this country, of the reflection of the regulatory's consolidation in this industry.



The volume of APAC area excluding China is so much less in respect to Chinese area. Infact, we can see that in 2013 and in 2014 it raised less than \$ 1 billion (2013 \$ 0,14 billions; 2014 \$ 0,27 billions), in 2015 it surpasses as \$ 1 billion (\$ 1,12 billion) and in 2016 and 2017 respectively \$ 2 and \$ 3,46 billion. So, about this mainland, we analyze **China** is the second country in all the world, after

U.S.A. Represent the 99% of total volume in online alternative finance market in APAC area and, like we said before in 2017 grew about the 48% from \$ 243 billion in 2016 to \$ 358 billion in 2017; **Australia** grew about the 88% respect to 2016 where the volumes arrived to \$ 600 millions. We can see that the growth was esponentially, passing from \$ 26 millions in 2013, to \$104 millions in 2014 and \$ 400 millions in 2015; and **New Zealand**, in 2017, succeed in raising over \$ 260 millions with a growth rates of 17%, but we need to consider that from 2015 to 2016 there was a decreased of 17 and pass from \$ 267 million in 2015 to \$ 223 million in 2016. From 2013 to 2014 there was a grew of 633% instead from 2014 to 2015 of 1117%: so, in 2013 New Zealand succeed in raising \$ 3 millions and in 2014 more than \$ 22 millions.

<sup>59</sup> "The 3<sup>RD</sup> Asia Pacific Region Alternative Finance Industry Report" of "University of Cambridge", November 2018



### ***III Empirical Analysis***

In this chapter, we will see different tests with statistic methods to assess if there are some statistically significant relations (correlation) between all the variable which have been found out for this research, based on crowdfunding studying.

#### **3.1 Data**

The sources of these variables are various. The variables from column E to the BY were taken from reports on online alternative finance at the University of Cambridge (reports that we use before like references), which were divided into 3 areas, Europe, Asia, the Americas (Africa is not taken into consideration because it is still a phenomenon that is not present or of little relevance), within which a more specific analysis is made of the crowdfunding situation in each of the countries present, mostly in the countries where it is more present. From the CB column to the end the data were taken from two international data collection sites:

<sup>60</sup>Eurostat for European countries and <sup>61</sup>World Bank Group for countries outside Europe.

The analysis tool used to perform the regressions is <sup>62</sup>R (software).

#### **3.2 Regression Theory**

<sup>63</sup>“In statistical modeling, regression analysis is a set of statistical processes for estimating the relationships among variable.” Regression analysis makes us understand how a dependent (or criterion) variable changes with the variation of one or more independent variables, which we will gradually verify.

<sup>64</sup>“In mathematical modeling, statistical modeling and experimental sciences, the values of dependent variables depend on the values of independent variables. The dependent variables represent the output or outcome whose variation is being studied. The independent variables, also known in a statistical context as Regressors, represent inputs or causes, that is, potential reasons for variation.”

Our hypothesis consists in verifying possible close relationships between the independent variables and the total volume of online alternative finance market.

During the regression analysis, we will process and test important assumptions in order to ensure that regression models are perfect in the end (no wrong assumptions because they could influence the final result).

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<sup>60</sup> <https://ec.europa.eu/eurostat>

<sup>61</sup> . <https://www.worldbank.org>

<sup>62</sup> [https://it.wikipedia.org/wiki/R\\_\(software\)](https://it.wikipedia.org/wiki/R_(software))

<sup>63</sup> [https://en.wikipedia.org/wiki/Regression\\_analysis](https://en.wikipedia.org/wiki/Regression_analysis)

<sup>64</sup> [https://en.wikipedia.org/wiki/Dependent\\_and\\_independent\\_variables](https://en.wikipedia.org/wiki/Dependent_and_independent_variables)

We say before that we will do a double regression, linear and multiple linear.

In order to show better the relationships between the variables (X and Y), we will use a dispersion diagram in which on the abscissa we have the independent variables (or explanatory variables) and on the ordinates the values of the dependent variable Y.

It should also be remembered that in the analysis, carried out in the following paragraph, a significance level of 5% is established, a useful parameter to establish if there is a consistent relationship between the dependent variable and the independent variable (s).

Moreover, among the variables considered in the regressions we will take only the relations that have an  $R^2$  (level of goodness)  $\geq 0.15$  and of this kind we see the number of asterisks that come out from the regression analysis (3 asterisks mean a strong relationship, without asterisks inexistent or irrelevant relation) to see the significance level with the statistic “t-students” test.

### 3.3 Results analysis

#### 3.3.1 Linear Regression

We find 5 correlations between the investments in online alternative finance (Y) and our independent variables ( $x_1$ ).

About the first one, we discover that as the number of "Railways, good transported" increases, investments in the alternative finance market increase and viceversa; this relationship has an  $R^2 = 0.1614$  (16%), a p-value = 0.001101,  $x_1 = 2.312 \text{ e}^4$  and a correlation of 0.4017169 (40%).

About the second, as the number of new businesses increases, investments in alternative finance markets will increase and viceversa; in fact, this regression has an  $R^2 = 0.1699$ , a p-value = 0.004421, an  $x_1 = 2.913 \text{ e}^2$  and a correlation of 0.4121907 (41%).

About the third, as GDP increases, investments in the alternative finance market increase and viceversa; this because this relationship has a  $R^2 = 0.1959$ , a p-value =  $6.37 \text{ e}^{-12}$ , an  $x_1 = 4.082 \text{ e}^{-3}$  and a correlation of 0.4426321 (44%).

About the fourth, as the number of new businesses increases, investments in alternative finance markets will increase and viceversa; this regression has a  $R^2 = 0.503$  and a p-value =  $< 2.2 \text{ e}^{-16}$   
An  $x_1 = 3.515 \text{ e}^3$  and a correlation of 0.7092172 (70%).

About the last, as the patent applications increase also the investments in alternative finance market increase and viceversa; this relationship has a  $R^2 = 0.6608$ , a p-value =  $5.927 \text{ e}^{-16}$ , an  $x_1 = 1.580 \text{ e}^5$  and a correlation of 0.8128965 (81%).

### 3.3.2 Multiple linear regression

Here we find 4 significant relationship between the investments in online alternative finance (Y) and two independent variables at the same time (x1 and x2).

About the first, the result is also very significant in the economic world. This because it is very reasonable that, for x1, as taxes and contributions increase, investments in alternative finance market increase: this happens because the activities through crowdfunding do not meet the same taxation that a traditional business must support. For a crowdfunding campaign, just create a project and place it on the platform to start collecting capital. For the variable x2, on the other hand, with the decrease of all the procedures, the minimum capital, time and costs, this cause a streamlining of the various investments in crowdfunding. This regression has a  $R^2 = 0.04779$ , a p-value = 0.005434, an  $x1 = 4.323 \text{ e}^{10}$  and  $x2 = -8.783 \text{ e}^7$ .

About the second, there is a comparison with a level of education (BACHELOR) and less and less when it concerns Master and Doctoral. Therefore, it can be deduced that investments in alternative finance market do not depend on the level of education of the subjects involved. In fact, if we go to increase the level of education (with Master and Doctoral) there is no evidence of an increase in investments in this type of activity.

	1° regression	2° regression	3° regression
Results:	(Bachelor)	(Master)	(Doctoral)
Multiple R-squared ( $R^2$ )	0.086	0.03126	0.004163
P-value	0.03281	0.8878	0.8534
Intercept	$-6.561 \text{ e}^9$	$1.961 \text{ e}^8$	$4.22 \text{ 10}^8$
x1	$2.905 \text{ e}^8$	$3.442 \text{ e}^7$	$1.26 \text{ 10}^8$
x2	$2.411 \text{ e}^8$	$5.652 \text{ e}^7$	$-3.99 \text{ 10}^7$

About the third, when taxation and the number of days to manage a company's legal procedures increases, crowdfunding investments increase both due (and viceversa) to non-tax difficulties and because a crowdfunding campaign requires less time, compared to a traditional company.

This regression has an  $R^2 = 0.03259$ , a p-value = 0.02934,  $x1 = 5.909 \text{ e}^7$  and  $x2 = 3.732 \text{ e}^8$ .

About the last, as the two x's vary, the Y will vary with a sign analogous to the variable x1 and with a sign opposed to the variable x2. This regression relationship has a  $R^2 = 0.04508$ , a p-value = 0.007352, an  $x1 = 5.81 \text{ 10}^8$  and an  $x2 = -1.93 \text{ 10}^8$ .

# Conclusion

As mentioned in the introduction, the topic of our study was observed and documented during the course of this thesis; after having done it now we are able to draw conclusions and better understand the purpose of this study.

This study aims to analyze the emerging phenomenon of online alternative finance and crowdfunding. To this end, an analysis was conducted on three levels: initially on the literature concerning this phenomenon, highlighting various definitions and classifications; subsequently, with a world-wide overview of the crowdfunding situation divided by continents and countries, where this phenomenon is more present; finally, with a statistical analysis (linear and multiple linear regressions) to try to find variables that on one hand could facilitate the interpretation of the world of crowdfunding and on the other could find possible significant relationships with variables of different types, with economic.

The data used for regression purposes were taken from Eurostat (for European countries) and World Bank (for the remaining countries).

From statistical analysis we were able to find significant results that highlight particular particular relationships with online alternative finance. For example, we observed that there are some highly significant relationships: with regard to linear regressions we found, mainly, that both Gross Domestic Products (GDP), the number of patents (residents) and the number of registered businesses are directly proportional to online alternative finance; instead for multiple linear regressions, there was a non-correlation between this phenomenon and the level of education of people (Educational Certificate), while online alternative finance is directly proportional to the time taken to open a business and to the 'increase taxation for traditional businesses.

Furthermore, it must be kept in mind that the type of analysis was not conducted only with economic / financial variables, but also with socio-cultural / social variables.

Furthermore, being a worldwide phenomenon, the relationships found may vary depending on the country of origin and its culture, being able to be significant in one place rather than another; this analysis leads to results that may not be found in particular cases (exceptions).

A recommendation for further future research could be to go and perform a specific analysis of this phenomenon in various areas and in different areas; this in order to have a clearer view of the phenomenon that we face and its evolution on the market.

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