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Practices and methodologies on evaluation applicable to investments in the United States Real Estate market: general guidelines and possible arrangements for the Italian market.

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1.The Real Estate Business

In terms of economic sectors, the real estate industry can be considered the largest single industry in the world. Inbounded in this sector, there are several activities and functions including:

- **Creation and improvement**: usually, from raw and wild lands (i.e. "greenfield") real properties are thought and improved by developers, a key figure on this stage. In this phase, other actors are also involved such as market analysts, space planners, designers, construction contractors and architects. These characters are hired once the landowners or the mortgage lenders evaluate positively the possibility to invest in a certain business project and once legal authorities approve the development project.
- **Maintenance and Management**: Every real estate property, both land and developed property, has to be maintained and managed. Regarding maintenance, we refer to all the professionals with different skills and background that grant the efficiency and/or the habitability of a property. In detail, we are including systems technicians (water and electricity), engineers and every other category helpful for the maintenance. When we speak about management we are including both asset managers and property managers. Their goal is the same, but with one difference: the former oversees a portfolio of several or many properties, making the properties performing well under a financial point of view. The latter have the same purpose but generally deal with just one property with a deeper focus on it.
- **Demolition**: often the crucial role of demolition experts is undervalued but it must be considered as a fundamental part of the lifecycle of a property, especially if this is no longer economically valuable. It seems to be appropriate to underline a real-life example described by Li Yin and Robert Mark

Silverman, who analyzed the situation of the city Buffalo, where the rate of abandoned house was becoming a real social issue since 2003. "Proximity to vacant and abandoned properties had the greatest negative impact on the possibility of an adjacent property being abandoned[1]", which means that abandoned properties were functioning as a contagion for consequent abandonment in the surrounding areas. As we can easily understand, proximity of such properties was impacting on the surrounding properties sales prices. This example was just a way to explain that the business related to demolition is not only important as a business itself, but it is also a way that must be considered trying to preserve the value owned by the communities.

- **Investment**: Real Estate investors risk their own capital buying, selling and holding real properties. Their position is very different from property owners, whose primary goal is to buy and maintain a place where to live because investors behave as entrepreneurs, exploiting every opportunity for profit, following the regulation about usage and taxation imposed by governments.

Real Estate – Definition and bounds

The best definition of real estate, simply put, is "land and things attached to it[2]" and even if the sentence sounds like naïve, underlying this concept we find that loads of skills and knowledge in plenty of fields are required. People simply could benefit about knowing how to manage real estate for their own business (like a decision involving a property they would like to buy), adding a property while managing their portfolio or other activities. Moreover, people simply could share their skills in the

[1] Yin, L, Silverman, R. (2015), *Housing Abandonment and Demolition: Exploring the Use of Micro-Level and Multi-Year Models*, ISPRS International Journal of Geo-Information, Buffalo.
[2] Floyd, C.F, Allen, M.T. (2002), *Real Estate Principles*, Dearbon Trade U.S 7th edition, Chicago.

market as real estate professionals: developers, brokers, appraisers, property managers and so on. Coming back to the core topic of this paragraph, the definition of real estate is strongly linked with the definition of property. Are these two words the same thing? No, they are not. Even if the term *property* can be used in several contexts, it is general and takes into account everything that can be owned: a house, a chair, a watch. Because of this, according to the law, we should distinguish between:

- Real property: "includes all types of land and land buildings and every estate or interest in the real property, whether legal or equitable. In addition, mobile homes, floating homes an any leasehold or property interest are also considered to be real property. Real property is also defined to include an option to acquire real property[3]";
- Personal property: "the things you own that you can take with you, such as money, vehicles, or furniture[4]".

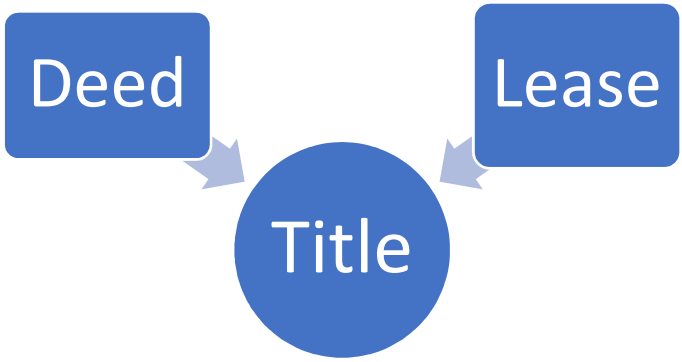
Basically, we can use real property referring to real estate and, on the other hand, personal property if we are dealing with movable goods. We are stressing the correct definition of these two classes because, when ownership is transferred, the requirements are way different, because the personal properties are traded, bought and sold informally and a bill of sale is the only document that somehow tracks the transaction making it closed. On the other hand, the transfer of a real property requires at least a written agreement signed by the parties involved.

"When ownership rights to real property, often called **title**, are transferred, the document used to convey the rights from one party to another is called a **deed.** When tenant acquires property rights to leased property, the document used to

[3] Van Brederode, R. F.W. (2011), *Immovable Property Under VAT: A comparative Global Analysis*, Wolter Kluwer, Alphen aan den Rijn.

[4] Cambridge Dictionary, 2018.

convey the rights from the property owner to the tenant is called **lease**. Leases merely convey the rights of use and possession under the agreed-on-terms, not ownership rights.[5]"



Wherever an item is judged real or personal property, several times parties could be uncertain because of the nature of the item itself. More precisely, we are considering that category known as **fixtures.** Once again it is crucial to consult what is stated by law. Fixture are all the items that once were personal property but has been affixed to land or a building and are part of the real estate[6]**"** at the moment of the sale. Heating plants, elevators, kitchen cabinets and lights can be good example of fixtures. Secondly, according again to the law, "if an item is a fixture it automatically transfers with the property unless excepted by either party to the contract.[7]" If the parties involved in the contract are not able to find an agreement about what is considered fixture and what is not, we have the chance to apply the Total Circumstances Test, often applied by the courts to determinate if a fixture is a real property or a personal one. This test is also known as IRMA, the acronym of:

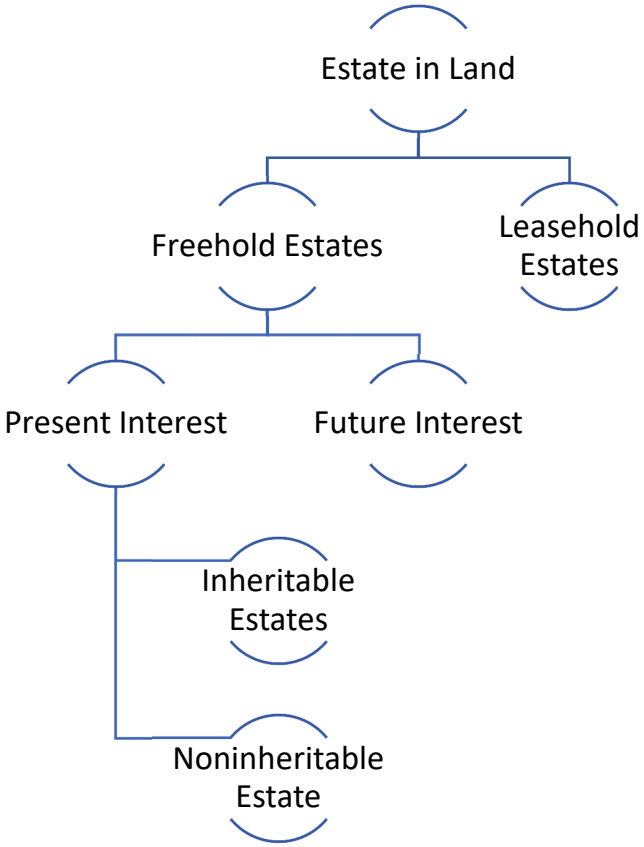
[5] Floyd, C.F, Allen, M.T. (2002), *Real Estate Principles*, Dearbon Trade U.S 7th edition, Chicago. (pp. 14)
[6] Galaty F.W., Allaway W. J., (1993) *Modern Real Estate Practice in North Carolina*, Fillmore.
[7] Ibidem.

At the first stage of the analysis we must understand the final purpose of the person who installed the item. This is strongly linked with the second point, because we must be aware of the relationship between parties: it is more likely that a tenant has not a permanent purpose, or at least less permanent than the owner of the property. Secondly, an expert chosen by the judge will quantify the damages in case of removal and stating if that item could be used in other property (personal property) or if it has been built according to the specific needs of the house where it has been placed. Although the test is consistent and supported by the law, the only certain way to avoid any kind of argue is to specify carefully what is/will be considered part of the property and what is not. Thanks to this written contract buyers and sellers know exactly what they are exchanging and pricing.

Estate in Land

Underlying the idea of real property, it sounds obvious that the ownership (or the tenancy) gives a series of rights that must be understood in order to act legally and exploit, as much as we can, our investments or contract: this list and limitations of rights referring to the property is known as *estates in land*.

Because of the complexity and the numerosity of the cases we will consider, let's graphically represent our collections of rights:



The first distinction is between freehold estates and leasehold estates, basically the right granted to the owner of the property and the rights granted to the tenant: use and possess the property, but without owning it. First we investigate the case of tenancy: "a leasehold estate is a more limited interest in property than a freehold estate. The holder of a leasehold estate – the tenant- does not own the property but merely leases or rents the property. This gives the tenant the right to exclusive possession of the property for a span of time.[8]" According to the type of tenancy, there are four main categories to consider:

- **Tenancy for a stated period** occurs when the agreement between landlord and tenant states that the property will be rented for an established period of time: it could be 1 month, 6 moths, 1 year or any mutually acceptable time. In

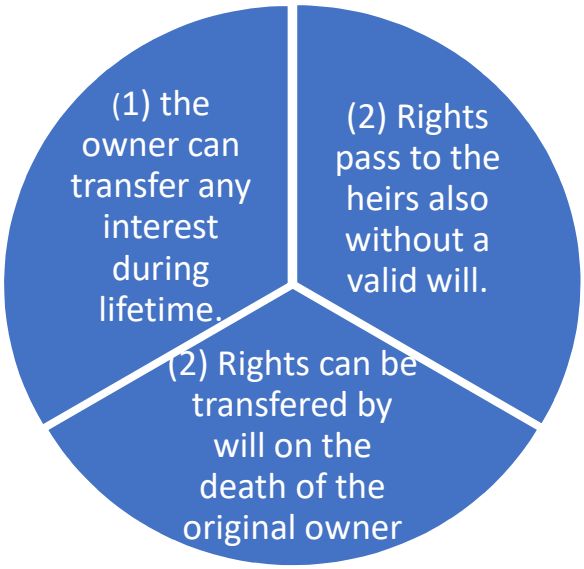
[8]Tonnon A., (2005) *Washington Real Estate Law*, Rockwell P.

certain countries, tenancy lasting less than one year do not require any written contract.

- **Tenancy from period to period** occurs when the parties agree to continue the agreement for a non-specified period of time. The original contract may include an expiration date for the right, but it is not imposed by the law. Generally, it is asked between thirty and sixty days of notification if one party wants to terminate the contract, but it depends on state laws. Once the parties decide to renew the contract, it will be for the stated period of the first agreement.
- **Tenancy at will**, according to the title, lasts since the tenant and the landlord desire. In the contract there is no expiration date and if nobodies act to end the agreement, that relationship could also last forever. In case of conclusion, tenancy at will is treated and follows the same process of the tenancy from period to period: depending on the state, the communication of termination has to be notified in thirty or sixty days to the counterparty.
- **Tenancy at sufferance** is the last scenario: even if it cannot be considered as a proper type of contract, in the real world it takes place quite often. The tenant in this case has no rights to occupy the property of the landlord, maybe because the contract already expired without the intention of re-leasing or simply because there was no agreement between the parties, but the tenant has no intention of moving out and leaving the property. What could happen in this kind of situation? Usually there are two possible applicable ways: unfriendly and friendly. The former considers the eviction carried out by the homeowner, with the help of the authority, in order to take back his property. The latter regards the chance to find a peaceful solution, when parties could find an agreement by negotiating or renegotiating a tenancy contract.

The other branch of the graph is composed by what is called freehold estates, "estate of indeterminate duration. If ownership rights are granted for a period of time capable of being accurately fixed and determined at the time of granting, the estate in not a freehold estate. Thus, freehold estates last indefinitely, either for the lifetime of an individual (or continuously and?? the property is passed from one generation to the next[9][10]". At this point it is necessary to introduce another variable to distinguish which rights take place in the moment of the sale and, on the other hand, which bundle of right can be claimed in a specified period in the future. Basically, dealing with the present interest of a property, we can have:

- **Fee simple absolute estate**, or simply fee simple, is "the greatest estate in land, wherein the owner has the right to use it, exclusively possess it, commit waste upon it, dispose of it by deed or will, ad take its fruits. A fee simple represent absolute ownership of land, and therefore the owner may do whatever he chooses with the land. If an owner of a fee simple dies intestate, the land will descend to the heirs[11]". Moreover, legally stated this bundle of rights is alienable (1), descendible (2) and devisable (3).

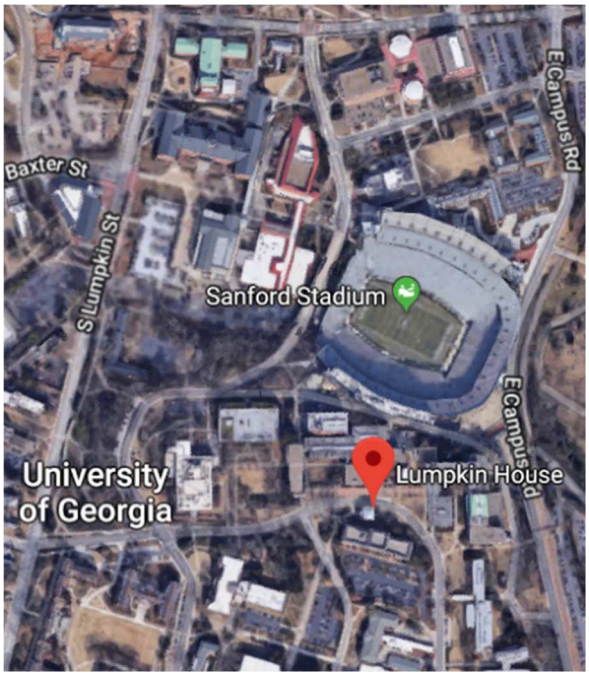


[9] Slossberg L. T. (2014), *The Essentials of Real Estate Law,* Cengage Learning

[10] It is exactly what is graphically represented at the beginning of the paragraph

[11] https://legal-dictionary.thefreedictionary.com/Fee+simple+absolute

- **Qualified estates** are not an absolute and untouchable bundle of rights because the owner could lose the rights in any moment the future. A real and self-explaining example could help: University of Georgia was founded around the early 1900s and it was based in the same campus as it is based now, known as North Campus. In 1907 Lumpkin's family donated a large portion of land to give the chance to the University to build the Stadium but there was one condition: University of Georgia was asked to maintain and preserve a Lumpkin's building placed in that tract of land: if the University fails and let the building fall in ruin, the land will be reverted to the Lumpink's heirs.
- **Life estate** is not as easy to categorize as the previous ones because it can vary according to the different cases where it can be applied. In general, it is a noninheritable estate and grants the ownership of certain rights and normally ends with the death of the named recipient. Thus, the life estate could be very complex depending on the number of subjects involved into it: the life estate, for example, could be held from somebody different than the person whose death terminates the estate. This case is known as estate *pur autre vie*. Throughout an example it is easy to understand the reason why this estate is in between the branches of present interest and future interest. If "Owen transfers Blackacre to B when A dies, A has a present interest, held in a life estate, implied from the words of limitation "when A dies". When A dies, B has a future interest, a



1 Maps - Universoty of Georgia - Campus

remainder following the life estate[12]". Within the same contract it is possible to notice that there are subjects suffering a present changing in their rights and other subject that will be involved in the future. In more precise terms, this process is also known as Reversion.

Restrictions on Ownership

Up to now, this first chapter investigates the rights given by ownership or tenancy of a property, with the focus on what the owner or the tenant can do according to the contract. Also, it is crucial to understand the limitations that subjects can suffer, both related to the contract they signed and ther restrictions imposed by third parties. The following paragraphs will deal with the two main bodies of restrictions:

- Private Restrictions on Ownership;
- Public Restrictions on Ownership.

These restrictions, collectively known as encumbrances, run with the land and they can have a relevant impact on the value of the land.

Private Restrictions on Ownership

The most common form of private restrictions includes:

- Liens
- Easements
- Adverse Possession.

[12] Burke D. B., Snoe J. A. (2008), *Property: Examples & Explanations*, Wolter Kluwer, Alphen aan den Rijn.

Liens, definition and effects on the property

"A charge against property that provides security for a debt or obligation of the property owner is a lien". This is the most common and clear definition of what we are going to analyze, but the underlying concept is always the same for every type of lien: the owner can have debt or an obligation and the property is used as a security asset. If the owner will not be able to repay what was asked within the given time, the creditor can claim the rights he has on the property thanks to the lien. Basically, the liens create, as a matter of fact, a true restriction of ownership that will run with the land as long as the debt is repaid and the lien is cancelled out. The lien does not turn into ownership but it must be considered as one of the strongest encumbrances. It can be categorized in several ways according to the reason why it was created, but the most important distinction is between specific and general liens.

Into what is considered a specific lien are inbounded the all the cases in which the lien is opened to protect the creditor, most of the times dealing with the repayment of a mortgage or the repayment of specific machineries (known as mechanics' liens):

- **Mortgages**: it is a voluntary lien on a property given to the lender by the real estate owner as security for a purchased loan. In the real life, only few people have the chance to pay real estate property without borrowing a certain amount of money, and the mortgage is the most common way to cover this lack of liquidity. In return for the loan, buyers normally mortgage the property. Even if the lien crates a restriction on ownership, it is the easiest

way to obtain cash, especially for large amount of money, through a long-term financing. If the loan is not repaid in time according to what was scheduled or if other requirements are not met, the mortgagee can start the foreclosure procedure. Basically, the property securitizing the mortgage will be first taken and sold to the highest price during a public auction. The borrower will be the first subject authorized to take advantage of the liquidity for the exact amount of money that was expected to receive. If any amount of money is left, the original borrower will claim for them.

- **Mechanics' Lien** has been thought for a specific reason because it protects those who provide any kind of labor force and/or material during the improvement process of a real estate. Once the owner of a property decides to implement any sort of change in his property, several professionals and experts are involved: engineers, architects, appraisers, carpenters, are just some figures that can be involved into the process, and of course they have to be paid. This issue unfortunately became quite popular in the US during the 2007-2008 crises: property owners where developing their real estate assets and selling them into the market even if the development costs were still pending on what they were selling.

On the other hand, in the real estate market it is possible to find what are called General Liens. Starting from the base, conceptually general and specific liens have one key aspect in common: they do not represent property ownership, but they are again a restriction referred to a property. General liens are usually the outcome of a lawsuit. Dealing with judgments liens, the winner of a lawsuit who was asking to be paid has the right to claim an interest in the losers' properties trying to collect the pending debt. Most of the times this lien is referring to real estate because, on average, it is the most valuable assets in the borrower's portfolio. Liens are widely used by public institutions especially when the property owner is not paying

personal or federal tax and the process is as simple as what we just described: after the lawsuit the assets of the debtor will be taken as long as the financial position with the Exchequer is balanced.

To sum up what it has been said "a general lien in one placed against any and all real and personal property owned by a particular debtor. An example is an inheritance tax lien against all property owned by the heir. A specific lien attaches to a single item of a real or personal property and does not affect other property owned by the debtor. A conventional mortgage lien is an example, where the property is the only one asset attached by the lien[13]". In the real life, there is also another important issue: it is not rare to deal with properties with multiple liens. In this case, the law provides a rank based on the hierarchy of the lien based both by hierarchy and date of recording:

Superior Liens

- Real Estate Tax liens
- Federal Estate Tax liens
- State Inheritance Tax liens
- Special Assessment Tax lien

Junior Liens

- Federal Income Tax liens
- Judgment liens
- Mortgage liens
- Mechanic's lien

Every lien ranked into the first category, called superior, take precedence over all the liens ranked into the category called junior, without taking into account the recorded date. This is given by the fact that Public Institutions generally have the

[13] Mattling, S., Cusic D. (2015), Principles of Real Estate Practice, Performance Programs Company

priority upon the private sector. For liens belonging to the same class, the earlier recorded lien has e higher priority. There is one exception regarding the mechanic's lien because it is always subordinate to a superior lien but, speaking about recording date rule, it will be considered recorded once the work started and not when it is properly recorded. This is caused by the fact that in many times these jobs can last for years and the financial distress can arise only after months or years.

The following example shows how lien priority must be managed according to the US law: a houseowner took out a second mortgage in 2001 for 24.000 $ and his first mortgage, started I 1997, has a balance of 149.000$. Considering unpaid real estate taxes for 900$ for the current year and a mechanic's lien opened in 1999 for 2.000 $, let's rank our liens knowing that the house has been sold for 183.000$.

The borrower is going to repay, in chronological order:

1. 900 $ for the taxation;
2. 149.000$ for the lien referred to the first mortgage;
3. 2.000$ for the mechanic's lien;
4. 24.000 for the lien related to the second mortgage.

The spread between the overall income and the outcomes, 7.100$, is the final balance that the borrower will hold. It is interesting to point out the risky position referred to the second mortgage: because of the timing, it will be repaid at the end of the process once all the creditors are repaid. Because of this reason, in practice it is almost impossible to obtain a second mortgage with the same bank (for example), and generally in case of needs the banks are willing to renegotiate the first mortgage better than granting a new one.

1.3.1 Easement

An easement is a right on a real property that gives to the subject the right to use or exploit in a specified manner the property of another landowner. These rights can be applied to the property's subsurface, airspace or surface, but this must be specified in the contract. The subject that receives certain rights thanks to the easement is called benefited party, the second figure giving the rights to the benefited party is called burdened party.

Before considering the two types of easement, it is necessary to point out three milestones that can be found in every agreement containing an easement:

- It must involve the actual landowner of the property over which the agreement will run. Nobody can enjoy an easement owned by a third party;
- It must be referred to a specified area and there is no chance to extend the easement to other surrounding property without involving respective landowners;
- Generally, the contract is written in an affirmative way, meaning that the easement gives the benefitted party the chance to obtain certain benefit, but there is the possibility to find easement prohibiting and limiting what can be done in certain property. The most common example is what is generally called airspace negative easement that prohibits the owner of the land to build any property in that area according to preserve the views of pre-existing houses.

Traditionally there are two types of easement: the <u>easement appurtenant</u> and the <u>easement in gross</u>. The former gives the agreed rights of usage a part (portion) of an adjoining property, which means that this easement is applicable only in the

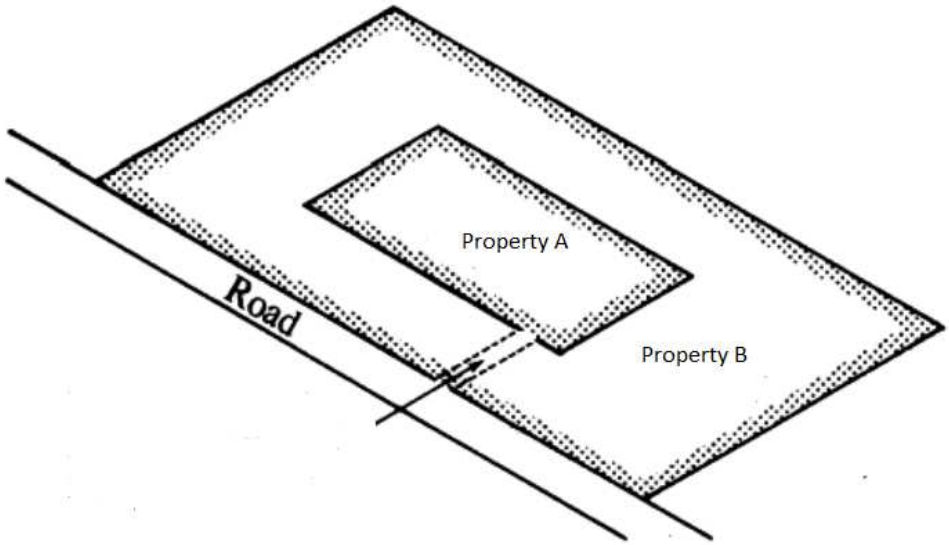
scenario where the parties involved in the agreement are neighbor or, at least, the parties are owning contiguous properties. As already discussed, in this kind of agreement the party called dominant estate is the one obtaining any benefit from the easement. On the other hand, the servient estate is the counterparty that actually at the beginning was owning the property and is still owning it, but with one or more restrictions dictate by the easement.

It is possible to find easement where there is no difference between dominant and servient estate. This case is not rare especially when two adjacent houses' owners decide to share the pathway. Nobody can be the owner of the street because it is built in between the properties. Each of them legally is asked to grant to the other easement appurtenant but practically speaking the counterparties are simply sharing the driveway.

The second type of easement, called easement in gross, implies the presence of the servient estate but not the dominant one. The definition provided by a lot of book is not clear at all, but it basically means that this agreement is useful in certain cases where companies must get across a lot of properties to spread their network, cables or pipelines. This companies are just interested in obtaining the authorization to cross certain areas.

2 Typical Shared Entrance - Google Maps

After digging into every type of easement, it is reasonable to ask ourselves how they are established and what can happen from the creation to the termination (if it exists) of the deed. Once again, there are several possibilities:



- The majority of the easements are created by either express reservation or express grant. Looking at the above picture, we suppose we are owning both property A and B, but we decide to sell property A keeping the ownership on property B. There are no doubts that the only way to reach property A for the new buyer is to cross our property. Symmetrically, imagine that we are owning the property A and B and we decide to sell property B, keeping property A. It is again clear that we will need to go through property B to have the access to the main road. Depending to who is buying, who is selling and giving who is granting the dominant estate, the easement is called express grant or express reservation: in this two-scenario analysis, for example, if the original owner is keeping property A, the easement placed in the deed will be an express reservation, meaning that we are selling the property but we will always have the right to drive through property B. Dealing with the express grant, the owner in the deed points out that he is selling property A and the buyer will have the chance to get across property B.

- "An easement by implication, sometimes called an easement by necessity, can be wither an implied grant or an implied reservation. This type of easement can arise only when a property is divided into more than one lot, and the grantor neglects to grant or reserve an easement on one lot for the benefit of the other. There are two requirements for an easement to be created by implication:
    - It must be reasonably necessary for the enjoyment of the property;
    - There must have been apparent prior use[14]"

  The second point basically asks to investigate if before the sale of the parcels the owner was needing, for example, to get across certain areas.

- An easement by prescription can arise when someone, not the owner of the property, uses that land "openly, hostilely and continuously" for a certain number of years. First of all, openly, hostilely and continuously is just a well-specified way of saying meaning that the subject, in order to ask for an easement by prescription, is asked to behave like the real owner, treating the land exactly like his or her property. Easement in gross does not exist if the landowner has given permission for the usage of the land. To be recognized as continuous, the occupant is supposed to use the property without any interruption (the frequency in most of the times related to what he or she is doing in the land) usually between five to twenty years, according to what kind of right is asked.

Normally, once an easement is created it is thought to be permanent, and because of this it is said that it "runs with the land", during and after every sale transaction. Even

[14] K.J. Haput, (2015), *Washington Real Estate*, Rockwell P. (pp.70)

if the nature of the agreement is permanent, under certain circumstances it can be limited or terminated by agreement, merger or abandonment:

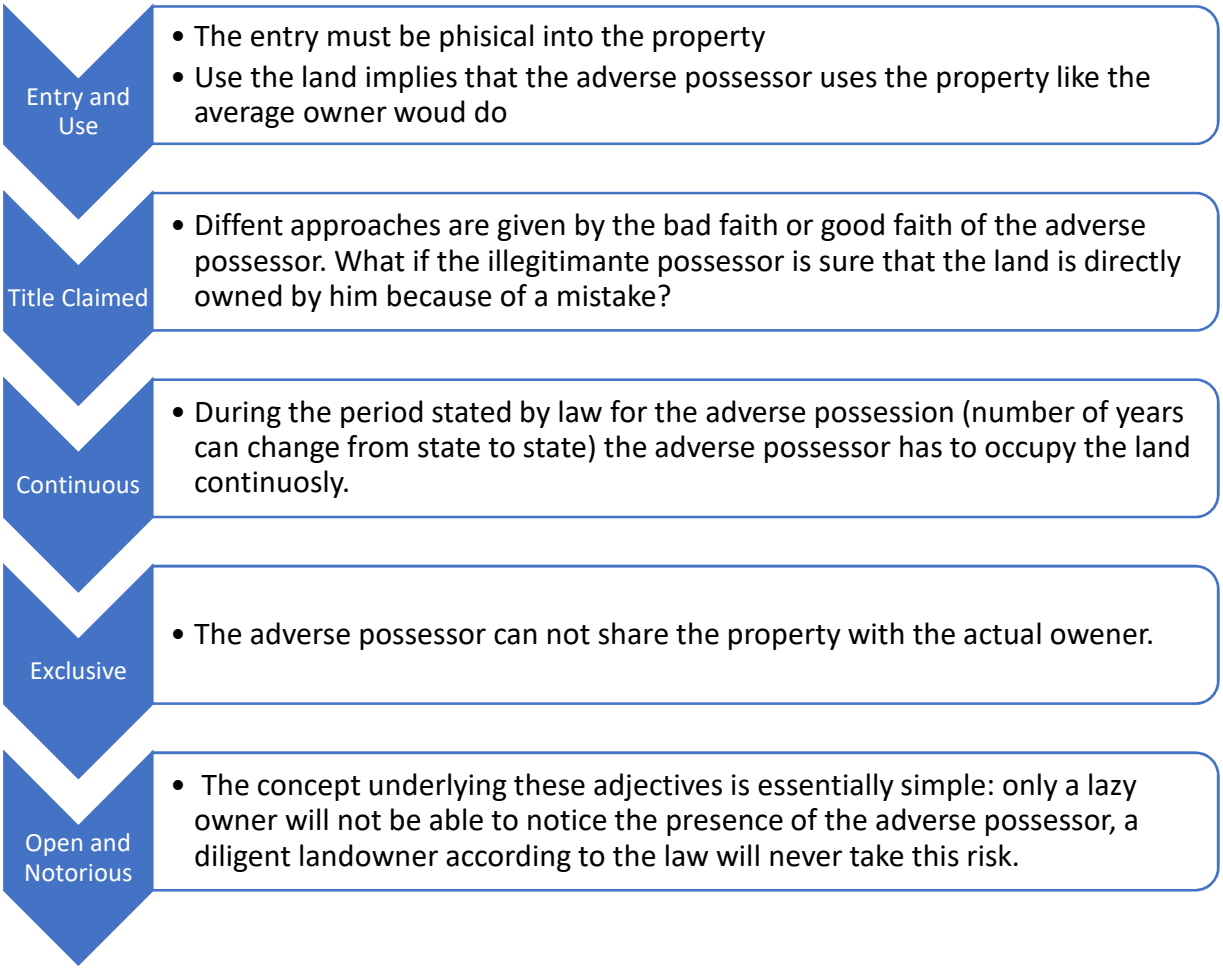
- Agreement implies that both parties (or more than two if the easement was signed by more people) agree to give up their rights granted by the contract. It is required that the termination is written and signed by all the parties involved. Of course, according to the nature of the easement it can be easier or more difficult to convince the parties to agree but we just have to keep in mind that these rights are valuable and often these transactions imply a cash settlement.
- Merger two properties usually is the last bullet a counterparty can shoot in order to terminate a previous easement. If it is not possible to reach an agreement, it can happen that a party tries to directly buy the next-door property with the idea of reselling it in the future without any right inbounded into the property.
- Abandonment is "a third method of terminating an easement. If the benefited party does not exercise his or her rights to use the servient estate over an extended period of time, the easement may be terminated. The length of time an easement may remain in effect without being used varies from state to state[15]". It can be required to the holder of the rights to perform some action to prove he or she is exploiting what granted by the easement.

1.3.2 Adverse Possession

Even if this legal circumstance is not widely spread, the most upsetting way to gain title on a property is the adverse possession. Usually the owner of a property does not want other people to trespass what he owns but this body of

[15] Floyd, C.F, Allen, M.T. (2002), *Real Estate Principles*, Dearbon Trade U.S 7th edition, Chicago.

law somehow gives property rights to trespassers if this subject follows 5 elements listed in the adverse possession law:



Public Restrictions on Ownership

After reading the previous pagers about the private restrictions on ownership, we figured out that owners do not have an absolute right on the properties they bought. These limitations do not involve only private citizens as above mentioned in the last paragraph, but additional boundaries are related to what is defined as Public Restrictions on Ownership. “Governments use these controls and limits to provide social benefits to the citizens of the community. However, each property owner

loses a degree of his or her individual rights in the process[16]". These limitations can be clustered as follow:

- Power of Taxation;
- Power of Escheat;
- Power of Eminent Domain;

1.4.1 Power of Taxation

The first public restriction having a considerable impact on property owners is the power of taxation. Through this right, local governments can raise money for every kind of need: to improve education, to increase protections investing on police or fireguards, to implement and renew the public transportation. It is clear that there are loads of costs for the public administration, what Is not known is that (on average, in the US) around 75% of local governments' revenues are granted by property taxation. It is not only the largest voice of income, but this type of taxation also has desirable characteristics because they are stable given the fact that they are paid according to the market value of all the properties and, thanks to this stability, they are extremely easy to forecast. Secondly, property owners cannot evade because in the public registers every property is easily checkable.

Property tax is defined as an *ad valorem* tax, meaning that what will be paid is directly related to the value of the property we are investigating, and it will not be based on the income generated from the same property. Depending on the country, taxation can be expressed in millage rates or percentage rates, but as long as we are able to compare these numbers, switching from one rate to another is not causing

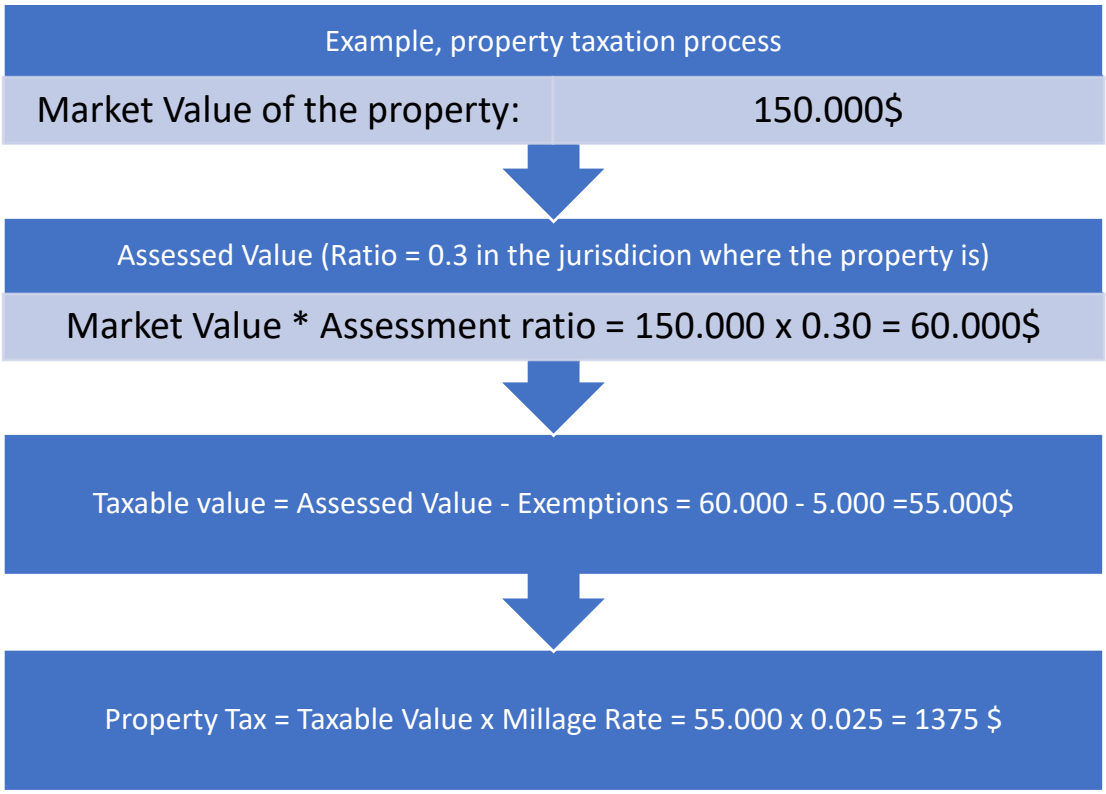
[16] Georgia Real Estate Commission: https://www.grec.state.ga.us/infobase/table%20of%20contents%20pdf/Chapter%2017.pdf

any problem. Before showing a concrete example understanding how the value is calculated, there are several key-words that must be understood:

- Market value is the intrinsic value of the property and the most probable price if the asset would be traded. At that price buyers would be ready to buy and sellers would be ready to sell, according to the equilibrium of demand and supply. In here we are assuming that the market is efficient and both parties are acting like a *homo economicus.*
- Assessed value is the part, the percentage or the portion of market value suffering the taxation and subject to it. Quite often market value and assessed value are exactly the same, but not always. In some jurisdictions, for example, certain categories of property owners are helped to provide tax relief (like disabled people, veterans, farmers).
- Taxable value is the difference between the market value and the summation of all the exceptions just mentioned and it will be multiplied by the millage rate (or percentage rate) provided by government's law.

$$\text{Tax value} = \text{Market Value} - \text{Exemption(s)}$$

To understand how taxes must be calculated, let's consider a real estate built in the Orange County with market value 150.000 $. The federal law in that county imposes a rate of 0.025 (25/1000). The house is owned and occupied by a family composed by 3 people: mother, father and one son. They are working as farmers and this specific class of employment gives them the right to have a discount for the taxes referred to their house.

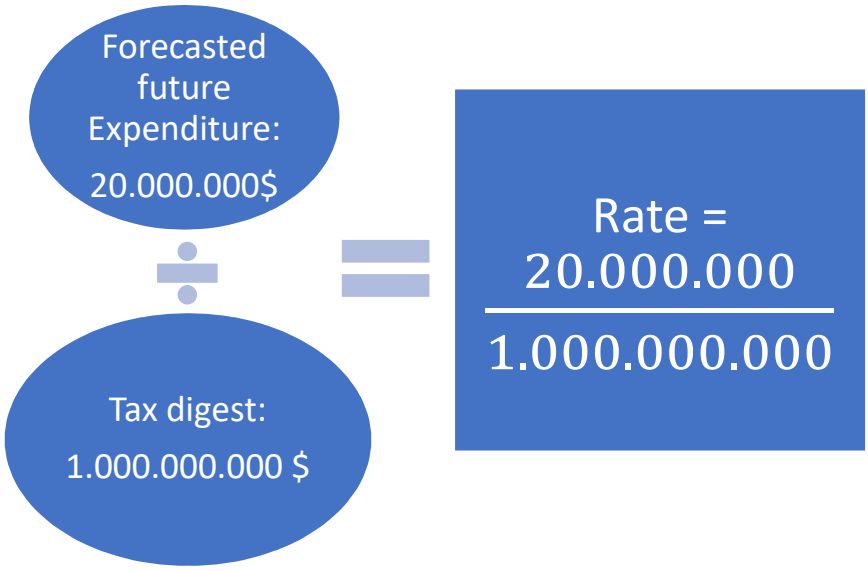


Every property owner must pay according to the value of the asset he or she owns, but the most interesting part of the entire process is the calculation of the rate that governments periodically have to revise. How does it work? What's the process behind their choice? The only way to answer this question is to step-back and restart thinking about taxation from the government's perspective.

At the first stage of the research, professionals are required to estimate the overall value of all the property within the county's jurisdictions. This first analysis, called assessment, is as difficult as crucial and most of the times it requires a lot of time and a lot of work. "The advent of computer systems and software with large data storage and sophisticated analytical capability made possible utilization of sales information, property characteristics and statistical techniques to estimate the value of individual properties. This capability is the basis of the modern Computer Aided Mass Appraisal system (CAMA) employed nearly universally by assessors nationwide[17]" in the US. After all the properties have been identified and priced,

[17] https://www.deltacounty.com/DocumentCenter/View/896/Mass-Appraisal-Explained?bidId=

usually exemptions are listed and discussed. In many jurisdictions we find a reduction of the tax burden, also called homestead exemptions, for low-income owner, widows, widower and disabled people. Simultaneously, the city (or regional) council develops the budget for the following year (or years, it depends on the country). Dealing with the US, this budget is revised every twelve months by every county. Knowing the taxable value of all the property in the area of competence and the forecasted future expenses, it is easy to find the rate that will be required to the taxpayers.



In real life taxation does not suffer drastic changing and during the years it tends to be pretty stable. In case of adjustments, people are asked to vote at local level to approve rate's change. Only after the approval of the electors, the county commission will be allowed to raise the tax rate.

1.4.2 Power of Escheat

The second public limitation on ownership has its roots into the medieval feudal system and was taking place when the kings were giving his lands to his barons but, if they would have died without sons, the kings had the right to claim back the same

land. Nowadays of course there is no gender discrimination between male and female heirs, but the underlying idea Is pretty much the same. If the landowner dies without living relatives or without writing a valid will, the government where the landowner was living will become the new legal owner of the entire patrimony. There are mainly three reasons why power of escheatment is conceptually right and fair:

- Governments do not want unowned property because abandoned properties have severe impact on the neighborhood where they have been built: they can be occupied, destroyed, basically ruing the overall environment of the community living in the area;
- If a property is unowned it does not generate any sort of income tax-related, causing a loss of budget for the following years.
- The chance to sell the property will generate a positive unexpected cash inflow giving the chance to reinvest this money in activities useful for the community.

1.4.5 Eminent Domain

As we have figured out until now, the government has the power of regulating the use of private property through several different laws. The underlying ratio of these laws is to preserve, or increase if possible, the general welfare, more precisely the safety of the citizen, the public health and morals. "Another governmental power that can be used to control land use is the power of eminent domain[18]" Under this power the government can acquire properties for public use even if the original property owner does not want to sell his real estate. For his property the seller will

[18] K.J. Haput, (2015), *Washington Real Estate*, Rockwell P.

be paid according to the market value of the property or, mentioning what is stated by the Fifth Amendment, the "*just compensation*".

In the eminent domain procedure, usually called condemnation proceeding, before overtaking any property the federal government, or the subject intitled by the government, is asked to prove that the expropriation is needed to improve the public welfare and brings benefits to the society. The crucial issue is to define what public use means understanding the limit dividing public benefit and private speculation. Is it acceptable and fair that within the process private stakeholders take advantage of a governmental move? At the beginning of the US political history the answer was negative, and the power of eminent domain was embraced only if the government was needing, for example, a piece of land for specific reason, the only stakeholder in the project. Nowadays the same definition of public use changed, becoming quite broad. To support what we just said about the new interpretation of this power, it is sufficient to say that the eminent can be applied as follow: a private land is taken through condemnation and resold to private developers for urban renewal. This is happening all over the US for the past few years. From one side the urban development and renewal is fundamental for the society but on the other hand private investors are gaining money exploiting the public power. The same concept has been extended to all the quasi-public organization: thank to the new interpretation of the Amendment, utility companies and rail-roads have the chance to enlarge their businesses. Unfortunately, doubts about the applicability of the law is not the only issue in this field, because the main concern is caused by the definition of adequate compensation. Recalling the definition of fair market value, it "is generally considered to be the amount a buyer and seller are likely agree to if that property was sold on a particular day[19]" without being forced to do it. Once again, the appraisers experienced in eminent domain are

[19] https://legaldictionary.net/eminent-domain/

able to evaluate the property but often problems arise. Being more specific, there are at least four circumstances where the valuation must be revised:

- **Compensation for Improvements**: original owners are entitled to receive higher compensations if they are able to prove that the improvements they made have a positive impact on the land value.
- **Compensation for Business Losses**: original owner in the US are not entitled to pretend higher compensation if the condemnation procedure has a negative impact on their businesses. This aspect is taken into account only in California.
- **Compensation for Partial Property Seizure**: most of the times the eminent domain does not involve an entire property or land, but only a strip of it. This is the case for example when a street is built. The compensation must consider both the part taken away but also it should discount the loss in value referable to the remaining property. This drop of the price, known as *severance damage,* should consider the loss of usefulness of the remaining property;
- **Compensation for Rented Property** takes place when "a property seized under eminent domain is rented or leased and it may be required that both the property owner and the tenant be compensated. The valuation of compensation for rented property in such case may differ depending on whether the lease or rental agreement contained a condemnation clause[20]". If the governmental decision causes severe losses to tenant's business, he has the right to close out the contract without being asked to honor the previous agreement.

[20] https://legaldictionary.net/eminent-domain/

In any case, if the property owner states that the payment is unfair can ask for the *inverse condemnation*, and the federal court will revise the entire process.

2. Real Estate Appraisal

What is the property worth? This is the key question in every field of business, and the answer is not always that easy, especially dealing with real estate. Buyers want to be able to pick up the best asset, receiving as high as possible cashflows *ceteris paribus*. Sellers, on the other hand, want to know the value of their properties according to the market. There are also third parties that most of the times are not recalled: mortgage landers, for example, are interested in pricing all the assets when clients pledge them as security for their debts. Last but not the least, taxes are basically calculated starting from the value of each property, so it seems to be reasonable to consider Governments as interested in this topic as buyers and sellers. A deep understanding in the most used valuation techniques is the principal cornerstone considering the real estate business: this task, known also as appraising process, will be developed in this chapter.

The Sales Comparison Approach

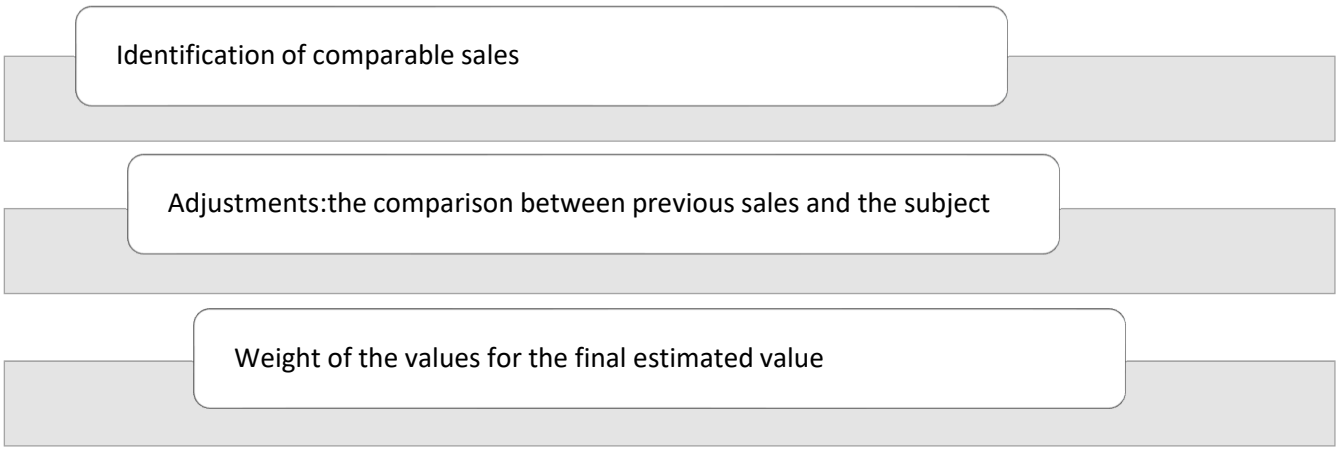
The first way to evaluate a property, also known as market data approach, is the most used and successful method of evaluation. It is basically based on the substitution principle. Under the specification we previously pointed out, we can assume that a buyer, for a purchase, will pay an amount of money coherent with the characteristic of the property, being sure that other comparable property will not cost him less money. Roughly speaking, every investor choosing between two comparable properties, is going to pick up the chipper one.

This method is so valuable also because every specific amenity of every property is taken into account, even if we must point out its weakest point: every property is

unique. Because of this, it is not always easy to price the property mainly for two reasons:

- It can happen that there are no comparables, especially if we are dealing with special-purpose properties like ports, airports, dams;
- The transactions do not occur that often, and if the market is not active we can face a luck of information and a related lack of reliability of the prices.

The valuation process is composed by three main milestones:



Our comparison approach compares the sales prices of previously sold properties that are similar to our subject, making value adjustments considering the differences that up to the surface. After identifying all the potential causes of the changing in price, appraisers must measure the reliability as the comparable assets and the ratio behind their choice.

2.1.1 Identification of comparables.

The first stage of the Sales Comparison Approach, as briefly introduced in the previous part of the chapter, consists in the identification of possible comparable properties. To be qualify as comparable, properties must fit the following requirements:

1. Approximate the subject size and shape;
2. Provide the same utility possibly being designed in the same way as the subject;
3. Being placed and built in the same area, because the location is the key aspect of overall valuation;
4. Have been sold recently. According to the rule of thumb of every appraisal, the purchase should have taken place within six months. If it is not possible, we can enlarge this period of time, being aware of possible discrepancy. The time-scale criterion is crucial because economy cycles and average growth through years can turn into extreme appreciations/depreciations.
5. The transactions took place in an arm's-length condition, which means that both buyer and seller are negotiating the deal without any sort or external pressure or obligation, in a fair market valuation of the property. It is quite easy to envisage that a transaction within a family, between father and son, for example, do not underline the standard. Often this problem is not only pointed out by infra-family deals, but it can take place in other scenarios where the buyer can somehow leverage on the seller.

2.1.2 Adjustments: the comparison between previous sales and subject

Appraisers' job is to adjust the value of the subject according to the sale prices of the comparables. These prices are known, because the transactions already took place, while the future price of the subject is still unknown. Following the logic, only comparables are influencing subject's value, not vice versa. Value deductions and additions are downer and upper movements that will cause the final price of the property under evaluation.

In the case in which the comparables are better in certain characteristics than the subject, we will have a deduction in respect of the sale price of the property already sold. On the other hand, if the subject has better characteristics of the comparable, its sale price will benefit (and grow) according to its peculiarities. The final goal of all these movements in the price is to neutralize the differences of the two properties.

Maybe an example could be helpful in the comprehension of this changing in value given by physical components: let's assume we are the appraiser for an important company and we are confront two properties. The comparable has a big garden that we price 5.000€. In order to equalize the difference, we will deduct 5.000€ from the sale price of the property we were using as a reference. One important point must be underlined here: the deducted amount of money is not the cost of that specific big garden, but it is the contribution of that garden to the market value of our comparable.

2.1.3 Weight the values for the final estimated value

During the processes of pricing a property, at least six comparables must be considered because a larger sample can provide more reliable information. Through adding and subtracting to the sale price of the comparable all the adjustments, we should be able to find the correct value of the subject. But it is important to recall that every variation is subjective and it is crucial to process a weighted analysis, considering each value of each comparable. Because of this, the last step can be considered the most important one: the appraiser must understand which comparables is the one better describing the subject and which ones are not useful and not indicative. It could sound easy but there is no formula that can help us at this stage but, as a rule, "the fewer the total number of the adjustments, the smaller

the adjustments amounts, and the less the total adjustments amount, the more reliable the comparable[21]".

What does this mean? The sentence is based on two key concepts:

1. Single adjustments amount represents the monetary variation between the comparable and the subject referred to a specific aspect. If the adjustment is large, the comparable asset is not a good proxy for the value of the subject. On general terms, every variation that excess the 15% of the sale price of the comparable drives any appraisal at dropping that asset, no longer considering it as a good yardstick;
2. The Number of adjustments is the parameter that describe the overall fitting between comparable and subject. As we can assume, if we manage just a few adjustments it means that the properties we are comparing are very similar, increasing the probability that the values are similar.
3. The total amount of adjustment is the difference between the final estimated value of the subject and a comparable and it can be expressed as a dollar value or a percentage. "A distinction is drawn between net adjustment and gross adjustment. Net adjustment is the net sum of positive and negative adjustments. This is the figure that is added to (or subtracted from) the sales price of the comparable, to result in the final indicator of the value for the subject property. Gross adjustment is the total dollar amount of the adjustments for the comparable, without regard to whether the adjustments are positive or negative.[22]" Usually the gross adjustment is the measure that provide appraisers a measure of reliability of the comparable.

[21] Sawyer, N.M. (2008), Massachusetts Real Estate, South-Western Educational Pub
[22] Schram Jr, J.F. (2006), *Real Estate Appraisal (2nd edition),* , Rockwell Publishing Company.

2.1.4 Real example and theoretical tips

The following illustration of a real case could help who is reading in getting confident about this type of evaluation.

The main characteristics of the subject are listed in the following table:

The property is composed by 8 rooms- 3 bedrooms, two baths, kitchen, living room, family room;
2.000 square feet of garden
2-car garage
Other specification: the construction is frame with aluminum siding and landscaping is good

As we said before, the first step for an appraiser is finding the biggest number of comparables as much similar as possible to the subject.

Comparable A

Sold one month ago for 100.000€
Conventionally financed at current rates
Located in subject's neighborhood without relevant differences or disadvantages
Built in the same ages as the subject
The size of the lot is smaller than the subject: 7 rooms-two bedrooms, one bath
1.900 square feet of garden
2-car garage
Other specifications: way of construction and overall condition analogous to the subject. The landscaping is very similar too.

Comparable B

Sold one month ago for 120.000€
Conventionally financed at current rates
Located in subject's neighborhood without relevant differences or disadvantages
The building is six years newer than the subject
The size of the lot is smaller than the subject: 10 rooms- four bedrooms, three baths
2.300 square feet of garden
2-car garage
Other specifications: the view is better than the subject and comparable's design is way more appealing.

Comparable C

Conventionally financed at current rates
Sold within the previous month for 115.000€
Located in subject's neighborhood without relevant differences or disadvantages but it is five years older
The size of the lot is larger than the subject: 8 rooms- three bedrooms, two baths
2.000 square feet of garden
2-car garage
Other specifications: way of construction and overall condition analogous to the subject. The landscaping is very similar too

Comparable D

Conventionally financed at current rates
Sold within the previous month for 109.000€
Located in a neighborhood more valuable and desirable
The size of the lot is smaller than the subject: 7 rooms- two bedrooms, one and half baths
1.900 square feet of garden
2-car garage
Other specifications: Comparable's design is less appealing and the frame is poorly maintained.The landscaping is very similar too

After collecting the data of a proper number of comparables, the following step is to plot our information in a table trying to align every peculiarity of the properties given, at the same time, an economical valuation through all the adjustments.

Adjustments final table

	Subject	**A**	**B**	**C**	**D**
Sale Price		€ 100.000,00	€ 120.000,00	€ 115.000,00	€ 109.000,00
Financing Terms		standard	standard	standard	standard
Sale Date	NOW	1 month	1 month	1 month	1 month
Location		no difference	no difference	no difference	-€ 2.000,00
Age		no difference	-€ 1.200,00	€ 1.000,00	no difference
Lot size		€ 1.000,00	€ 1.000,00	-€ 1.000,00	no difference
Site/View		no difference	-€ 1.000,00	no difference	no difference
Design/Appeal		€ 1.000,00	-€ 1.200,00	no difference	€ 500,00

Construction quality	Good	no difference	-€ 3.000,00	no difference	€ 1.000,00
Conditions	Good	no difference	-€ 5.000,00	no difference	€ 2.000,00
N° of rooms	8				
N° of bedrooms	3	€ 500,00	-€ 500,00	no difference	€ 500,00
N° of baths	2	€ 1.000,00	-€ 1.500,00	no difference	€ 500,00
Garden	2.000	€ 1.000,00	-€ 5.000,00	no difference	€ 1.000,00
Garage	2-car	no difference	no difference	no difference	no difference
Other factors					
Landscaping	Good	no difference	no difference	no difference	no difference
Net Adjustments		€ 4.500,00	-€ 17.400,00	€ -	€ 3.500,00
Gross Adjustments		€ 4.500,00	€ 18.400,00	€ 2.000,00	€ 7.500,00
Indicated Value		**€ 104.500,00**	**€ 102.600,00**	**€ 115.000,00**	**€ 112.500,00**

Table 1 – SCA

Thanks to the summarization in the table above, every information is now easy to compare. Before commenting the final result, it is crucial to understand deeply the meaning of every line, because there are several considerations that bust be done in order to obtain correct values in our cells. Analyzing table's rows one by one we have:

- **Sale Price:** that is the price of sale of every comparables. It must be expressed in one currency;
- **Financing Terms:** Mortgage pending on the comparables;
- **Sale Date:** the settlement date for every sale should be reported, followed by the contract date, if this information is available. If not, "Unk" must be reported. Adjustments are required if the market conditions change significantly from the date of the comp's contract to the moment of the comparison. In any case is asked to the appraiser a detailed explanation of her considerations.

- **Location**: according to Appraisal Institute (AI), association actively involved into the interpretation of new rule in this field, "home's proximity to a bad neighbor can reduce the property's value by 5-10 percent[23]", which means that the subject can lose value because of reasons external obsolescence. Problems like "overgrown lawns, clutter, multiple cars parked off the driveway, fallen tree branches, loud music or poorly maintained home exteriors[24]". Conditions can rapidly change within a few blocks and appraisers hare required to have a deep knowledge of the market under a geographical point of view, as long as the location is influencing subject's final estimations that much. Every homebuyer is concerned about the surrounding community, safety, real estate prices, access to public transportation and commute time. Generally, in the process of comparison between two properties, a rating is given to the location where "the location's impact can be Neutral (N), Beneficial (B) or Adverse (A)[25]".
- **Age**: even if it seems to be impossible, there are example in the past regarding properties with unknown time of building. In these cases, the age must be estimated but reported with a *tilde* sign. This category is narrow and precisely based on the age of the property: often unexperienced misled it with the *Condition* field, adjusting two times the same characteristics.
- **Conditions**: fortunately, the Federal National Mortgage Association, better known as Fannie Mae, define six classes of rating extremely useful for properties' arrangements:
    - **"C1:** The improvements have been recently constructed or the property have not previously been occupied. The entire structure and

[23] https://www.forsytheappraisals.com/2015/may/258-how-neighbors-affect-a-home-valuation
[24] ibidem
[25] Genworth Financial Insurance (2013), *Appraisal Analysis: Focus on Sales Comparison*

all components are new and the dwelling features no physical depreciation;

- **C2**: The improvements feature no deferred maintenance, little or no physical depreciation, and require no repairs. Virtually all building components are new or have been recently repaired, refinished or rehabilitated. All outdated components and finishes have been updated and/or replaced with components that meet current standard. Dwellings in this category either are almost new or have been renovated and are similar in condition to new constructions;
- **C3**: The improvements are well maintained and feature limited physical depreciation due to normal wear and tear. Some components, but not every major building component, may be updated or recently rehabilitated. The structure has been well maintained;
- **C4**: The improvements feature some minor deferred maintenance and physical deterioration due to normal wear and tear. The dwelling has been adequately maintained and requires only minimal repairs to building components/mechanical system and cosmetic repairs. All major building components have been adequately maintained and are functionally adequate;
- **C5**: The improvements feature obvious deferred maintenance and are in need of some significant repairs. Some building components need repairs, rehabilitation or updating. The functional utility and overall livability is somewhat diminished due to condition, but the dwelling remains usable and functional as a residence;
- **C6**: The improvements have substantial damage or deferred maintenance with deficiencies or defects that are severe enough to affect the safety, soundness, or structural integrity of the

improvements. The improvements are in need of substantial repairs and rehabilitation, including many or most major components[26]."

- **Lot size**: it is a common mistake to consider the size of the parcel the only aspect to take into account in this voice. As general rule, the size must be reported in square feet if it is less than one acre, in acres if bigger, with two digits. Unfortunately, it is not just a comparison between two number, where bigger is better, but there are other peculiarities that appraisers need to consider:
    - The potential market value of the parcel is always tricky to establish, because the final price of a sale is given by lots of variables, especially if parcel has unique singularities. Historical data tent to be stable across the ages, without any drawdown or rocketing in values, so appraisers can enlarge their investigations to older sales with similar parcel size;
    - Usefulness: Is reductive to consider every square-feet equal to the other. What if we have a huge parcel close to the highway? Is it more valuable than a smaller parcel in a cute neighborhood? It is not only the location, but also the shape of the parcel could affect the price, because a lot extremely narrow, ten miles long would be worthless.
    - New constructions or not: according to a market research, builders tend to ask higher prices when the property is initially sold. This premium, most of the times, does not have the same evaluation during the resale of the same property;
- Construction quality and design do not consider only the internal and the external conditions of the property, but in this section are valued and priced other aspects like sought-after architecture, above-average labor and classy

[26] Fannie Mae UAD Appendix D: UAD Field-Specific Standardization Requirements, (pp. 10)

details: also in this case is the guidelines provided by Fannie Mae are as useful as precise. The list is reported in the table below:

•

Rating	Description
Q1	Dwellings with this quality rating are usually unique structures that are individually designed by an architect for a specified user. Such residences typically are constructed from detailed architectural plans and specifications and feature an exceptionally high level of workmanship and exceptionally high-grade materials throughout the interior and exterior of the structure. The design features exceptionally high quality exterior refinements and ornamentation, and exceptionally high-quality interior refinements. The workmanship, materials, and finishes throughout the dwelling are of exceptionally high quality.
Q2	Dwellings with this quality rating are often custom designed for construction on an individual property owner's site. However, dwellings in this quality grade are also found in high-quality tract developments featuring residences constructed from individual plans or from highly modified or upgraded plans. The design features detailed, high-quality exterior ornamentation, high-quality interior refinements, and detail. The workmanship, materials, and finishes throughout the dwelling are generally of high or very high quality.
Q3	Dwellings with this quality rating are residences of higher quality built from individual or readily available designer plans in above-standard residential tract developments or on an individual property owner's site. The design includes significant exterior ornamentation and interiors that are well

	finished. The workmanship exceeds acceptable standards and many materials and finishes throughout the dwelling have been upgraded from “stock” standards.
Q4	Dwellings with this quality rating meet or exceed the requirements of applicable building codes. Standard or modified standard building plans are utilized and the design includes adequate fenestration and some exterior ornamentation and interior refinements. Materials, workmanship, finish, and equipment are of stock or builder grade and may feature some upgrades.
Q5	Dwellings with this quality rating feature economy of construction and basic functionality as main considerations. Such dwellings feature a plain design using readily available or basic floor plans featuring minimal fenestration and basic finishes with minimal exterior ornamentation and limited interior detail. These dwellings meet minimum building codes and are constructed with inexpensive, stock materials with limited refinements and upgrades.
Q6	Dwellings with this quality rating are of basic quality and lower cost; some may not be suitable for year-round occupancy. Such dwellings are often built with simple plans or without plans, often utilizing the lowest quality building materials. Such dwellings are often built or expanded by persons who are professionally unskilled or possess only minimal construction skills. Electrical, plumbing, and other mechanical systems and equipment may be minimal or nonexistent. Older dwellings may feature one or more substandard or nonconforming additions to the original structure.

This categorization is not that different from the one referred to the quality of the construction. The overall rating should reflect the comprehensive quality of the construction. However, if just one portion of the property is Q6 rated, the whole property has to be rated at Q6. At that point, the appraiser must report the deficiency, specifying which kind of intervention is needed. Only if the issue is solved and only after the inspection of a qualified professional, the appraisal process can continue. The ratio behind the process aims to grant property's safety and integrity.

- **Number of rooms** should be the easiest count ever but unfortunately is not like that. There are several interpretations on this topic, with different thoughts dealing with different definition of "bedroom" and "living room", based on different requirements imposed by the law during the last decades. According to the Fannie Mae/Freddie Mac last report, appraisers must describe a property providing the total number of rooms, the number of bedrooms and the number of entire/half bathrooms as in the following example: 8/4/1.2 means that the overall property counts 8 rooms, there are four bedrooms, one bathrooms and two half-bathrooms (only toilette). In general, kitchen dining room, living room, bedroom, study room (or office) and den are considered rooms, given the fact that they are not divided by walls and there is enough space for the intended function. On the other hand, bathrooms, laundry rooms, mudrooms and storage rooms are not considered (usually) in the total counts. Dealing with uncommon situations, like open areas, they would be counted as two or three rooms even if there are no walls separating those areas. As we were saying before, there are different points of view underlying the categorization of properties' rooms and this is given by the fact that there is no national standard on stating what constitutes a room.

"Generally, a bedroom is considered a room that a conventional bed will fit in with either a closet or space for a closet or wardrobe cabinet and also has a window which provides an emergency exit, natural light and ventilation.[27]"

2.1.5 Value of the subject, techniques for the right outcome

At this point, after explaining every interpretation about each point of investigation, the final goal is of course to find a consistent evaluation for the subject. It is important to remark that the adjustments are for sure questionable because different appraisers could provide slightly different values for every peculiarity. There are tables and guidelines, but "Appraiser A" could evaluate an extra-bathroom 500€ and "Appraiser B" could worth it 600€. Let's recall the adjustments in our previous example referable to the building, letting apart for a moment the changings more questionable and subjective:

Category	Adjustment	Measure
N° of bedrooms	€ 500,00	Per unit
N° of baths	€ 1.000,00	Per unit
Garden	€ 1.000,00	for 100sm difference

Table 2 – SCA – Focus on adjustments

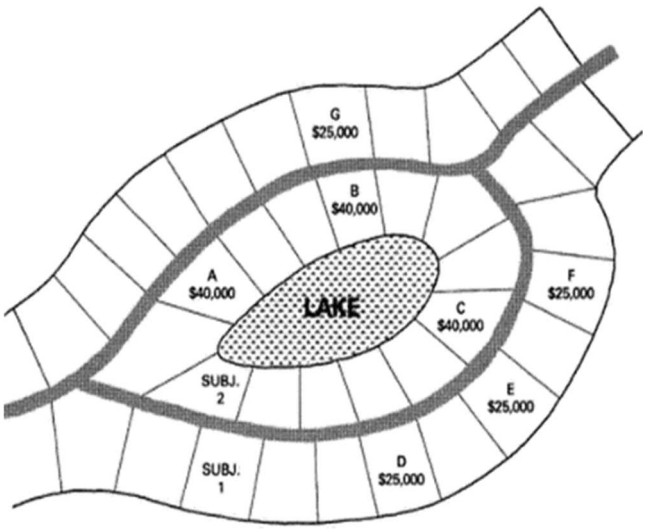
"Once the contributory value of a property variable can be isolated, the appraiser then must apply the adjustment in the comparative process. Following are three critical rules to remember in the application of the adjustment process:

1. Always adjust the comparable to the subject (never adjust the subject);

[27]http://nationalappraiserroster.com/Resources/Appraising101/UnderstandingMeasurementsRoomCounts/tabid/223/Default.aspx

2. If the comparable has a superiority, the adjustment is downward (CBS);
3. If the comparable has an inferiority, the adjustment is upward (CIA).[28]"

CBS is the acronym for *Comparable Better, Subtract*, which means that if the comparable considered in that moment is better under a certain point of view, we will subtract the estimated value from the comparable's sale price. On the other hand, CIA is the acronym for *Comparable Inferior, Add,* which means that if the comparable considered in that moment is inferior under another certain point of view, we will add the estimated value to the comparable's sale price. In the brief example that follows, the appraisal is trying to evaluate the market premium given by being lakefront for a property:



3 Position of the asset - taken from "Mastering Real Estate Appraisal"

[29] Properties A, B and C's location has been valued 40.000$ and locations D, E, F, G have been valued 25.000$ in their previous sales. The market premium for the variable *lakefront* is: (lakefront$-non\ la$kefront). In numbers, $40.000\$ - 25.000\$ = 15.000\ \$$.

Dealing with our structured example, the appraisal estimated a changing in price of 500€,1000€ and 1000€ respectively for one extra bedroom, one extra bathroom and a 100 square-feet difference of the garden. What should we do now if we want to establish the right value to the subject?

[28]Dennis D. H., (2006), *Masterig Real Estate Appraisal*, Dearborn.
[29] Image take from Tonnon A., (2005) *Washington Real Estate Law*, Rockwell P.

Average com's sale price

According to the simplest method applicable for the valuation, following of course the market value approach, the value of the subject can be found averaging the adjusted prices of the comparables. In this case we need just a few data to obtain the final sale price.

	Subject	A	B	C	D
Sale Price		€ 100.000,00	€ 120.000,00	€ 115.000,00	€ 109.000,00
Net Adjustments		€ 4.500,00	-€ 17.400,00	€ -	€ 3.500,00
Indicated Value		**€ 104.500,00**	**€ 102.600,00**	**€ 115.000,00**	**€ 112.500,00**

Table 3 – SCA – Final Values (1 of 2)

According to this technique subject's market price is:

$$Indicated\ Value_{Sub} = \frac{IV_A + IV_B + IV_C + IV_D}{4} =$$

$$= \frac{104.500 + 102.600 + 115.000 + 112.500}{4} = 108.650€$$

This value is a good indicator but it seems to be weak under several points of view. First of all, at world's level there is not a shared vision about the number of comparables that must be considered. Of course, the number is given by the liquidity of the market, because more liquidity means more trades, and more trades imply more reliable comparables. If the marked is illiquid and stagnant, every evaluation should be based only on a few, in the best scenario, previous sales. The real issue comes out when the estimated when the adjusted value for one comps is somehow wrong and impact inexorably on the subject's estimated value. Can happen that different weights are given to different comps according to their similarity to the considered subject, but these practical methods cannot be treated as the best ways to achieve the best answer for our goal.

Net Adjustments Ranking

The average comparisons sales price can be considered a raw indicator about the subject market price. A more sophisticated method suggests us to consider the net adjustments of each comparables. Recalling the formula:

$$\text{Net Adjustments} = \sum Positive\ Adjustments + \sum Negative\ Adjustments$$

Every variation must be considered with the coherent sign, positive if the subject is better than the comparable, negative if the subject is inferior to the comparable, according to the CBD/CIA rule. The following data in the table summarizes all the information we need to obtain rank the fitting the comparables:

	Subject	A	B	C	D
Sale Price		€ 100.000,00	€ 120.000,00	€ 115.000,00	€ 109.000,00
Net Adjustments		€ 4.500,00	-€ 17.400,00	€ -	€ 3.500,00
Indicated Value		**€ 104.500,00**	**€ 102.600,00**	**€ 115.000,00**	**€ 112.500,00**
% purchase price		**4,50%**	**-14,50%**	**0,00%**	**3,21%**

Table 4 – SCA – Final Values (2 of 2)

Speaking about comparable A, the net adjustment amount is 4.500€, given by several deficiencies in respect of the subject (number of bathrooms, bedrooms and gross living area). Comparable B seems to be, according to the value of the adjustment, the one that fits less with the subject, so it is the less appropriate benchmark. On the other hand, comparable C have been arranged two times and shows an algebraic summation equal to zero. According to this reason, it could be the best term of comparison for the sample we consider. Finally, comparable D present itself like a good measure of comparison, but the overall adjustment, 3500€,

could mislead our analysis conducing us on the wrong path because it is the results of seven different adjustments, and potentially every changing could embed a mistake in the evaluation. Because of this reason, even if comparable D looks similar to our subject, it would not be a reliable proxy.

The last row in the table above is not a mistake even if we have not mentioned it so far. Some appraisers prefer to approach consider the variation considering the magnitude of the arrangements, but they consider the percentage variation of it in respect of the sale value. Using a parallelism, is somehow the problem every economist face once she should use IRR or NPV. Luckily, the comparables are not that different and their sale prices is often close. Thank so this, raking them through the net adjustments or the % variation, most of the times drives the users to the same outcome.

Gross Adjustments Ranking

Underlying the implicit need about considering a new approach into the hierarchization the comparables, there is the explicit awareness that every subjective intervention made by the appraiser could be affected by wrong information and unprecise considerations. As we already said, "each adjustment made to the comparable's sales price is potentially inaccurate: the more adjustments made to a comparable property, the less reliable it is as an indicator of the subject property's value[30]". As a consequence, also the final estimated value of the subject could be wrong. Because of these reasons, a new line of thought was born: a way that discounts the overall number of adjustments made during the comparison between the subject and the comps. Starting from the very beginning, the formula for the indicator is:

[30] Schram Jr, J.F. (2006), *Real Estate Appraisal (2nd edition),* , Rockwell Publishing Company

$$\text{Gross Adjustment} = \sum |All\ Adjustments|$$

Every variation, both positive and negative, will be summed without taking care of the signs of them, no matter if according to some peculiarities the subject is better than the comp and worse according to some other characteristics. In this way, positive and negative discrepancies do not have the chance to erase or cancel out each other. Let's recall the number of our previous example, considering this time a new raw for the gross adjustment:

	Subject	**A**	**B**	**C**	**D**
Sale Price		€ 100.000,00	€ 120.000,00	€ 115.000,00	€ 109.000,00
Gross Adjustments		€ 4.500,00	€ 18.400,00	€ 2.000,00	€ 7.500,00
Indicated Value		**€ 104.500,00**	**€ 102.600,00**	**€ 115.000,00**	**€ 112.500,00**
% purchase price		**4,50%**	**15,33%**	**1,74%**	**6,88%**

According to the Gross Adjustment Ranking method, comparable C is once again the best property to pick up in the valuation phase of our subject. On regular basis, ranking using the net or the gross adjustment drive appraisers to the same answer, even if we cannot take this as a role.

In our example comparable C is confirmed by both methods and judged as the best comparable asset we have for the evaluation. In harmony comparable D is considered by both the methods as the less fitting property. It is interesting to investigate, on the other hand, that position two and three changes. Comparable B and comparable C switch depending on the method considered.

Raking	Net	Gross
1°	C	C
2°	D	A
3°	A	D
4°	B	B

Table 5 – SCA – Rank of Results

2.1.6 Guidelines and specifications

Fannie Mae and Freddie Mac published some documents providing guidelines that must be followed while appraisers are evaluating a property, focusing advices especially on the fundamental research of comparables in regime of comparable sales method. "Generally, the dollar amount of the net adjustments for each comparable sale should not exceed 15% of the sales price (of the comparable). When adjustments exceed 15% the appraiser must comment on the reasons for not using a more similar comparable. Further, the dollar amount of gross adjustments for each comparable should not exceed 25% of the sales price (of the comparable, again).[31]" At the same level, every singular adjustment that is excessively high should be explained carefully.

Appraisers are most of the times caught between *a rock and a hard place* and unfortunately, being able to follow every requirement could be a tough job. Every value they access to a subject must be proven by previous sales: being the real estate market an illiquid market, especially in period of crisis, comparables research is more likely to be considered as a treasure hunt. Secondly, once the chosen comparable has been found, it should look like the subject in every peculiarity,

[31] Hamp T., (2012), *Low Appraisal – the New Real Estate Crisis*, CreateSpace Independent Platform.

which sound unreasonable. A 25% difference in value of whatever aspects should make us rule out that specific caomparable.

All these aspects make the "real estate valuation an art and it is always based, at least in part, on an opinion; an opinion that must be backed up with current market data and verified by recently closed sales[32]". But still an art.

The Cost Approach

The second way that must be investigated for a deep comprehension of the various evaluation techniques is the so-called Cost Approach. This statement is very precise when we are referring to the real estate world, because according to the International Glossary of Business Valuation Terms defines the cost approach as "a general way of estimating a value indication of an individual asset by qualifying the amount of money that would be required to replace the future service capability of that asset." Sometimes cost approach and asset approach were considered the same thing, but it is not: the first one describes the fair value of a precise asset, the second one considers the value of the overall business.

The reason why this tool is so important for the experts is easy to find: can happen that the sales comparison approach completely fails the evaluation. There are several reasons why this failure can take place, and the reliability drop close to zero if we are asked to evaluate unique properties or if there are no evidence of transactions in the market. For example, it would be almost impossible to value, through the market approach, a highway bridge, a football pitch or a train station. It would be impossible. Aiming to solve this problem, the cost approach was established. "The cost approach to value is based on the principle of substitution, which states that the maximum

[32] Ibidem

value of a property tends to be set by the cost of acquiring an equally desirable and valuable substitute property. The cost approach is sometimes called appraisal by summation.[33]"

2.2.1 Valuation Process: all the steps

Assuming we decided to use the cost approach while we are estimating a property, the following steps must be followed:

1. Valuation of the land where the property has been built. At the beginning, we must consider the dollar value of the land, thought as if vacant. The estimate must follow the well-known sales comparison approach, considering comparables previously sold nearby, with adjustments for any sort of significant differences, like lot shapes or presence of sewer lines.
2. Estimation of the current cost of constructing the building/buildings plus every valuable improvement. Long story short, at this stage of the analysis is considered the overall summation of the costs we would afford in constructing a similar building at current prices. "These costs include the current prices of building materials, constructions wages, architect's fees, contractor's services, building permits, utility hook ups, and so on, plus the cost of financing during the construction stage and the cost of construction equipment used at the project site.[34]" Aiming to find the right way to price the building, we must point out a consideration that could affect the final valuation. According to the estimation of the costs, there are two different ways that could be applicable:
    a. Reproduction costs: is the overall amount of money required to build an *exact duplicate* of the subject we are considering. Same land footage, same building's peculiarities, same physical characteristics.

[33] Lark E., (1992), *Essentials of New Jersey Real Estate*, Joan m Sobeck
[34] Charles C.J, (2009), *Real Estate Priciples,11th Edition*, South-Western Educational Pub

b. Replacement costs: it is not based on the physical aspects of the subject but the evaluation is focused on the purpose or the function of it. If in the market there is the chance to find, for example, a smaller building but able to grant the same functions, that will be the benchmark of the valuation.

Generally speaking, the replacement cost is the technique more often applied in the appraising process because in this way obsolete materials and construction's methods are substituted and replaced by efficient features.

3. Determination of reproduction/replacement cost. There are four mail methods to quantify concretely the costs of a building, both if we are considering the replacement and the reproduction costs:

   a. Square-foot method: this is the most common method applied by non-experienced appraisals. Basically, the cost per square foot of a comparable recently sold in the market is multiplied by the number of square feet of the subject, given the fact that there is a comparable of course. The same path can be followed considering not only the footage but also for the cubic feet, but the underlying idea is the same.

	Square-Feet	Sell Price	Price per SF
Comparable	12000	$9.012.000,00	$751,00
Subject	11500	$8.636.500,00	$751,00

Table 6 – SCA – Square foot Example

In the example pointed out in the table, we considered the average price per square feet in Boston (MA). A previous sale of the building named "Comparable" pointed out a price of 751 dollars per sf. Considering that sale consistent for our estimation, we multiplied the price for the footage of the subject, obtaining 8.636.500 dollars.

b. Unit-in-place method: costs are ideally divided in macro-categories such as materials, labor and builders' mark-up. A large majority of the components are estimated in unit (one square feet, one hour of work) and then multiplied by the footage of the subject. Of course, there are other aspects that are considered just once, like plumbing fixtures.
c. Quantity-survey method: the starting point of this approach is the quantity of raw materials needed to replace the existing building. Because of this reason, the method is applied by experienced constructors. After the forecasted quantity of every materials required (bricks, plaster, lumber for example), they are multiplied by the unitary costs at market price. On top, indirect costs are summed.
d. Index method: given the original cost of the subject, a fixed factor is multiplied to it aiming to represent the increase over time. The multiplier is chosen generally according to the inflation in that country/area. On average this indicator is not precise because too general, but it can be considered a general proxy for the behavior of the price.

2.2.2 Depreciation Process: all the steps

In the previous part we tried to investigate all the aspects that give value to the property, under the prospective of a cost approach. On the other hand, it is crucial to give a value also to all the aspects that somehow have a negative impact on the evaluation of the property, knowing that a new house is way more expansive than the same house where somebody already lived in. Keeping it short, we will analyze how a property lose value because of depreciations.

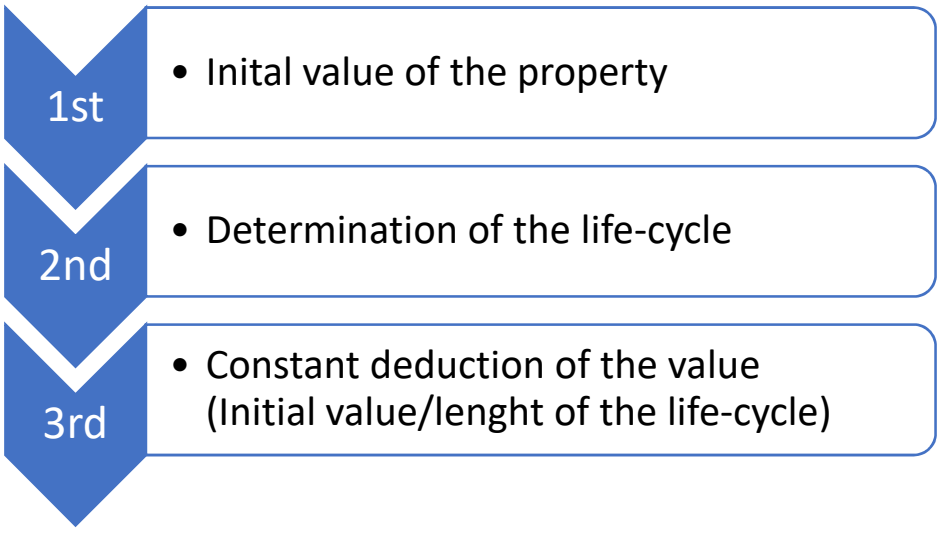
Focusing on the surrounding of our property, the first aspect to consider is the so-called External Obsolescence, also known as economic or locational obsolescence. This depreciation can take place when, for example, if a polluting factory has been

built close our property. In general terms, external obsolescence takes place when an unchangeable factor is affecting (negatively) the subject and the owner cannot do anything to improve the condition of what she owns. This type of issue is most of the times incurable, as we said before, because there is nothing to do for the property owner. Referring to the property itself, depreciations can be caused by loads of aspect included in two categories:

1. **Physical deterioration**, representing the normal and understandable wear and tear. This deterioration can be:
    a. Curable: comprehensive of all that aspects that can be solved/improved, making the subject as perfect as a new property. In this category we can count all the routine maintenance. Under an economic point of view, the amount of money the owner is spending to fix these problems has a positive impact in the evaluation of the estate.
    b. Incurable: when the overall value of the property is smaller than the economic effort required to fix what must be repaired. A new shack is worth 5K and the cost to fix the roof of our old one is 10k: in this example there is no economical reason that suggest the owner to solve the problem of deterioration. Most of the times these problems are caused by the obsolescence of some components of the building, maybe because they are out of the market, replaced by more efficient products.
2. Functional obsolescence: it deals with the physical peculiarities of the property. It can be:
    a. Curable: everything that makes less catchy the house we are selling or less valuable. Most of the times this type of functional obsolescence is given by the fact that old buildings have obsolete room layouts, or simply because what was considered fancy fifty years ago nowadays is not.

b. Incurable: every "undesirable physical or design features that cannot be easily remedied. An office building that cannot be air-conditioned suffers from functional obsolescence.[35]"

What we just listed is crucial for the determination of the depreciation of the property. As a rule, out of the appraisal world, the "Straight Line Age-Life Method" is unfortunately applied: a basic method where the depreciations are calculated as an amortization.



Using the basic straight-line approach, we have no evidence about the various types of deterioration and obsolescence. Some property could suffer their old-style but, on the other hand, some other building could be as valuable as they were when they have been built. Because of this, during the cost approach process, is strongly suggested to apply the Breakdown Method, where "the appraiser determines the total depreciation by observing and assigning a dollar value to the three kinds if

[35] Lark E., (1992), Essentials of New Jersey Real Estate, Joan m Sobeck

depreciations and subtracting this from the replacement cost. Although more complicated, this method is more accurate than the straight-line age-life method[36]"

Let's summarize all the concepts in a concrete example, starting from the following table:

LAND VALUE		
Value of the Land	**$ 50.000,00**	
IMPROVEMENT COST		
Main Building	$ 135.000,00	
Other structures	$ 5.000,00	
Total Improvement	**$ 140.000,00**	
DEPRECIATIOS		
Physical Dep. Curable	$ 5.000,00	xxx
Physical Dep. Incurable	$ 7.000,00	xxx
Functional obsolescence	$ 3.000,00	xxx
Total Depreciation	**$ 15.000,00**	**$ 21.000,00**
IMPROVEMENT-DEPRECIATIONS	**$ 125.000,00**	
OVERALL ESTIMATED VALUE	**$ 175.000,00**	

Table 7 – SCA – Complete

First of all, using the market approach the appraisal must find a fitting comparable recently sold in the market, adjusting the value if necessary. Secondly, the appraisal must list the overall cost of the improvements (replacement or reproduction, even if replacement is generally considered more reliable) and deduct the depreciations given by physical and functional obsolescence, both curable and incurable. At the last stage of the process, the estimated value is:

$$\text{Value (Cost Approach)} = Land + \sum Imporvement\ to\ the\ land - \sum Depreciations$$

[36] Rockwell, D. L. (2016), *Real Estate Principles 4th edition*, Rockwell Publishing

The last column of the table is just the clarification about what we were saying while we were criticizing the straight method applied to the appraising process.It sounds obvious that having curable or incurable problems in our property is extremely different, because if curable the problems can be fixed, if incurable this problem causes a proper loss impossible to escape. Secondly, it is not only a problem of distinction between types of depreciations, it is the overall part that could drive us out of the path. In our example we assumed that this is the situation three years after we built the property. Assuming the lifecycle of the house will be 20 years, and the cost is 140.000, we have a straight depreciation of 7K per year. After 3 years, of course it is 21k, even if a real analysis of the property points out a depreciation of just 15k. Without the breakdown method, we would have lost 6k without knowing it.

The Income Capitalization Approach

The income Capitalization Approach, al known as Income Approach, is the third consistent way experts can use to estimate the value of a property. It is important to know that the Income Approach is not applicable to every kind of property, but only the ones that can be considered investment property. It is reasonable to fix this limit because nobody would evaluate her own house with this method, because different needs are involved. Moreover, there are different methods of application for this approach that can be used according to the complexity of the property we are investigating: Gross Income Multiplier, Direct Capitalization and Discounted Cash Flow just to mention the most successful.

Fortunately, these different applications have two principles in common:

- Principle of anticipation, which means that the investor must risk her money first and, on a second stage, she will receive the expected future income;

- Principle of substitution: which means that nobody is going to pay the subject an amount of money greater than the expected future income streams. The same principle states also that the investor is going to invest that allows her to maximize the profit.

Let's try to describe the entire process, step by step, trying to explain carefully what must be done.

2.3.1 Phases in the Approach

The final goal of all our work is to estimate the net operating income, NOI, for the subject we are analyzing. After knowing how much money we could gain investing in the property, there will be other consideration that must be done about the capitalization rate. But let's find first the NOI, a milestone for the evaluation.

1. First of all, we start from the estimation of the potential gross income. By definition, the potential gross income is the sum of:

$$\text{Potential gross income} = \text{Scheduled Rent} + \text{Other Income}$$

The scheduled income is simply the rental the investor could gain by the subject if she decides to rent it. Usually this estimation is made through the *market approach*, since similar property can provide similar rental. On top, the category "other income" ask the appraisal to consider other potentially valuable characteristics of the property.

2. After obtaining the potential gross income, we are able to estimate the **Effective Gross Income**. This passage is not as simple as it could seem to be:

$$Ef.Gross\ Income = \ Potential\ Gross\ Income - Vacancy\ \&\ Credit\ Losses$$

Starting from the amount of money we estimate on the previous point, this must be reduced by a coherent amount of money caused by unrented space (Vacancy Loss), percentage influenced by the neighborhood and the market

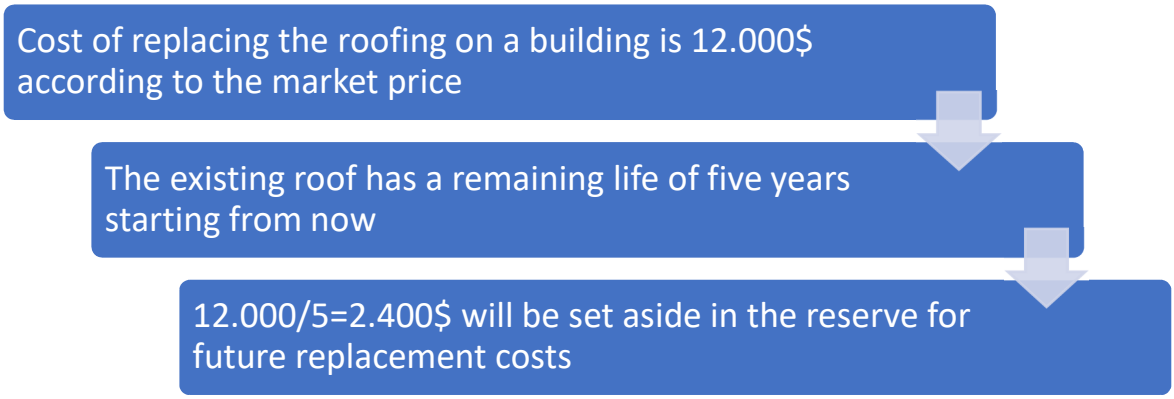
cycle. And it is not the only important reduction because in this passage we must consider also a physiologic failure in payment of tenants (Credit loss).

3. The final step is the one that give us the net operating income:

$$\text{Net Op. Income} = \text{ Effecive gross Income} - \text{ Total operating Expenses}$$

The net operating income, all operating expenses for the property are subtracted from the effective gross income. Operating expenses are any ongoing expenses that are necessary to maintain the flow of income from the property. For appraisal purposes, operating expenses fall into three categories: fixed expenses, variable expenses and reserves for replacement. **Variable expenses** are operating expenses that do not vary depending on the occupancy of the property. They must be paid regardless of whether the property is leased or vacant. The most common examples of fixed expenses are property taxes and hazard insurance premiums. **Variable expenses** are operating expenses that do vary depending on occupancy. They may include a wide variety of expenses, such as utility costs, property management fees, cleaning and maintenance expenses, and leasing commissions. Reserves for replacement are funds that are set aside for replacing short-lived components of the property: items with relatively short life spans, such as carpeting, paint, roofing, or mechanical equipment. These items routinely wear out and must be replaced. Reserves for replacement are set aside on an annual basis. The amount of the reserves is usually calculated by dividing the replacement cost of the item by its remaining useful life.[37]"

[37] Schram Jr, J.F. (2006), *Real Estate Appraisal (2nd edition)*, Rockwell Publishing Company.



There are other costs that potentially the owner of a property must face, but what we just listed before are the only costs that must be taken into account in the calculation of the NOI.

2.3.2 Future Cashflow: how to forecast them

The income approach, speaking about real estate property, is based on the present value of future benefits that the property owner will enjoy thanks to her investment. These benefits are mainly represented by the future cash flows that the property will generate plus the forecast resale of the property itself. Being able to quantify the cash flows can be a difficult task, especially when the market is very volatile. Fortunately, some consistent methods have been developed in the past, but a general rule must be kept in mind: forecasts discount expectation for the future, so potentially every time the environment is changing, every time a variable is changing, it could sound reasonable to change our expected cash inflows.

Forecasting means collecting information from the past, understanding the relationships between factors and drawing conclusion about what is going to happen in the future. “Key consideration in the forecasting process include:

- Forecast must be timely, that is, based on the most recent trends;

- Forecast must be in units appropriate for the decision (dollars, units, units per period, and so forth);
- Forecast must be as detailed as needed to capture key factors that affect the item being forecast.
- Forecasting assumptions and limitations should be clearly spelled out.

Items usually in a forecast for a real estate appraisal include income, rent, expenses, vacancy, sale price, interest rates and value. In addition, market demand, supply absorption, capture rate, market capacity and market potential are key elements in a highest and best use analysis as well as in economic feasibility studies. Note that all forecasts involve estimation of actual cash flows versus cash flows based on accounting or accrual concepts. The purpose of forecasting in real estate appraisal is to identify the dollar amounts actually to be received or paid by typical investors in the property under analysis.[38]"

We could take advantage of the following example for a deep comprehension of the cashflow, remembering the steps previously pointed out:

- INCOME: Increasing 4% per year for 5 years;
- VACANCY: 6% per year according to the past years;
- MANAGEMENT: 5% of the effective gross income, stable;
- PROPERTY TAX: 11.900$ for three years then it is increasing to 15.000$ because government is working on a new law;
- INSURANCE: 4.000 increasing 3% per year as in the past;
- UTILITIES: 30.000$ increasing 5% per year, because they follow somehow the behavior of the income.
- JANITORIAL: 18.000$ increasing 4% per year, same reason as before;

[38] Fisher, J.D., (1991) *Income Property Appraisal*, Real Estate Education Co

- MAINTENANCE: 4.000$, increasing by 3% per year, same reason as before.

	Y1	Y2	Y3	Y4	Y5
PGI	$ 300.000,00	$ 312.000,00	$ 324.480,00	$ 337.459,20	$ 350.957,57
Vacancy	$ 18.000,00	$ 18.720,00	$ 19.468,80	$ 20.247,55	$ 21.057,45
EGI	$ 282.000,00	$ 293.280,00	$ 305.011,20	$ 317.211,65	$ 329.900,11
Management	$ 14.100,00	$ 14.664,00	$ 15.250,56	$ 15.860,58	$ 16.495,01
Taxation	$ 11.900,00	$ 11.900,00	$ 11.900,00	$ 15.000,00	$ 15.000,00
Insurance	$ 4.000,00	$ 4.120,00	$ 4.243,60	$ 4.370,91	$ 4.502,04
Utilities	$ 30.000,00	$ 31.500,00	$ 33.075,00	$ 34.728,75	$ 36.465,19
Janitorial	$ 18.000,00	$ 18.720,00	$ 19.468,80	$ 20.247,55	$ 21.057,45
Maintenance	$ 4.000,00	$ 4.120,00	$ 4.243,60	$ 4.370,91	$ 4.502,04
Total Expenses	$ 82.000,00	$ 85.024,00	$ 88.181,56	$ 94.578,70	$ 98.021,72
	=	=	=	=	=
NOI	$ 200.000,00	$ 208.256,00	$ 216.829,64	$ 222.632,95	$ 231.878,40

Table 8 – DCF – Example taken from "Income property Appraisal" (1 of 2)

The final result of every columns is the estimated NOI for a specific year. Are these results reasonable? The appraisal must understand it, following some useful indicators. In the example it is important first of all to consider the implied change of the Net Operating Income. In Y1 it is equal to 200.000$, in Y5 it is 231.880$. let's consider: $\frac{NOI(Y5)-NOI(Y1)}{NOI\ (Y1)} = \frac{231..878{,}40-200.00}{200.000} = 14.94\%$, which means a 4% increase per year, that seem to be reasonable considering the real estate business. Another implicit test that can be run is the correlation between the NOI and the expenses, taken in the same period.

	Y1	Y2	Y3	Y4	Y5
Tot Expenses	$ 82.000,00	$ 85.024,00	$ 88.181,56	$ 94.578,70	$ 98.021,72
NOI	$ 200.000,00	$ 208.256,00	$ 216.829,64	$ 222.632,95	$ 231.878,40
Ratio	41,0%	40,8%	40,7%	42,5%	42,3%

Table 9 – DCF – Example taken from "Income property Appraisal" (1 of 2)

If the business is stable and there are no *black swans* involving the property, we can notice that the ratio between the two values in Y1, Y2, Y3, Y4 and Y5 are very close from each other: there is a 1.3% variation in the investigated period. Most of the times this consistency indicates that the forecast on the future cashflow is correct.

2.3.3 Return Calculation

When an investor is using his money for an asset, typically she has two goals: preserving the invested capital and obtain a profit on what she invested. In our economy there are plenty of possible investments, from the T-bills to the futures on the commodities, but the underlying principle is the same for every class: risk and return are correlated, so a riskier investment potentially can provide bigger gains, almost risk-free bonds can grant just a little interest. Every investor, according to her risk appetite, can choose what fits better her needs. Until now it has been pointed out how to measure and how to forecast future cashflows, but it is crucial to measure the future inflow giving value also to the time that passes between outflow/s and inflow/s. "Several income investment measures can be extracted from a real estate sale, including payback period, internal rate of return, net present values, profitability index and adjusted rates of return.[39]

2.3.3a PAYBACK PERIOD

This first rudimental tool to evaluate the investment give the chance to understand the time that elapses from the initial investment to the complete return of the investment itself. Basically, it can be described with the formula:

[39] Fisher, J.D., (1991) *Income Property Appraisal*, Real Estate Education Co

$$\text{PBP} = \sum_{1}^{n} (Cash\ Flow) - Inital\ Investment\ if\ \ > 0$$

In other words, it is the length (usually in years or months) needed to return the initial investment. Let's imagine an initial investment of 1.000.000$:

Year	NOI	Cumulative Cash-Flow	Coverage Ratio (/1.000.000)
1	$ 150.000,00	$ 150.000,00	15%
2	$ 170.000,00	$ 320.000,00	32%
3	$ 180.000,00	$ 500.000,00	50%
4	$ 200.000,00	$ 700.000,00	70%
5	$ 150.000,00	$ 850.000,00	85%
6	$ 170.000,00	$ 1.020.000,00	102%

Table 10 – PBP – Example

In this example, payback occurs in year six. This means that the investor takes six years before obtaining more than what she paid, as clearly pointed out in the column named "Cumulative Cash Flow". Payback Period in not very successful because of a big weakness: it does not consider the time value of the money. On the other hand, it is used as a proxy for short-term investments, that are not massively influenced by time value.

2.3.3b INCOME MULTIPLIER, FROM THE RATIO TO THE DIRECT CAPITALIZATION

Income multiplier are ratios linking the property value by other values calculated during the derivation of the Net Operating Income:

- PGIM is the potential gross income multiplier, given by $\frac{GPI}{INVESTMENT}$;
- EGIM is the effective gross income multiplier, given by $\frac{EGI}{INVESTMENT}$;

- NIM is the net income multiplier, given by $\frac{NOI}{INVESTMENT}$.

These multipliers do not provide a precise information about the profitability of the investment, but they can be considered simple and useful benchmark in the comparison process between two investments. Note that usually PGIM, EGIM and NIM are reported as the reciprocal of the formulas we previously wrote. Because of this we can have NIM>EGIM>PGIM.

From the multiplier it is possible to evaluate the property we are considering, but there are two vital aspect that we must discount:

- Pros: There is no need to evaluate the future cashflows generated by the property, because we just have to know what happened in the previous year.
- Cons: the underlying assumption in the commutation is maybe too strong for a real economy. Values and cashflow are supposed to remain stable during the entire period

Being aware of these assumptions, through the example it is possible to estimate a range of value for the property:

Subject	Year 1
Potential Gross Income	$ 300.000,00
Minus Vacancy Rate (6%)	$ 18.000,00
Effective Gross Income	$ 282.000,00
Minus Operating Expenses	$ 82.000,00
Net Operating Income	$ 200.000,00

Table 11 – Income Multiplier – Example. Chosen Comparable: PGIM=7, EGIM= 7.5, NIM=10.5

1. The Potential Gross Income Multiplier (reciprocal) is multiplied by the PGIM of similar property previously sold in the market. The constant presence of this

market approach is a constant in every valuation process. Of course, the appropriate comparable has been chosen thanks to its properties and its attributes. Based on the potential gross income multiplier, the value of the property will be:

$$\text{Value} = \text{PGI} * \text{PGIM} = 300.000\$ * 7 = 2.100.00\$$$

2. The principle of the effective gross income multiplier is the same as the potential gross income multiplier. It is necessary to multiply the EGI of our subject and the EGIM of the comparable chosen. According to this second multiplier, the value of the property is:

   $$\text{Value} = \text{EGI} * \text{EGIM} = 282.000\$ * 7.5 = 2.115.000\$$$

   The primary difference between EGIM and PGIM is that the EGIM is calculated after the estimated vacancy and the estimated failure in paying of the tenants. According to this reason we are not able to say which one is the best indicator, but appraisers must be aware of this potential issue. Usually EGIM is preferred because it takes into account all the potential loss but is these parameters change over time, the property value must be revised.

3. The same process for the Net Operating Income:

   $$\text{Value} = \text{NOI} * \text{NIM} = 200.000\$ * 10.5 = 2.100.000\$$$

   "An advantage of the NIM is that it is applied to income after expenses (and vacancy and credit loss). If there is a difference in the expense ratios of the subject and the comparable properties, the NIM is likely to provide a more reliable value estimate. Rather than use an NIM, the tradition in the appraisal field has been too use the reciprocal of the NIM, which is the overall capitalization rate (R-zero).[40]"

[40] Fisher, J.D., (1991) *Income Property Appraisal*, Real Estate Education Co

2.3.3c PROPERTY YIELD RATE

The property yield rate is what is better known as Internal Rate of Return (IRR) and it is the rate of return of the investments referring to real estate properties. it is calculated by finding the value that basically makes equal the initial investment and the discounted cashflows plus the eventual price gained from the resale of the property. The IRR, thanks to the way it is built, takes into account the time value of the investment.

Year	Cash Flows
0	-100.000$
1	2.000$
2	110.000$

Table 12 – PYR – Example

According to the table, at time zero the investor has to pay 100.000$ to start the investment. At year 1 she will receive 2.000$ and at the end of year 2, thanks to the resale of the asset, she will receive 110.000$. The IRR of this investment is the value R that makes the following equation true:

$$-100.000 + \frac{2.000}{(1+R)} + \frac{110.000}{(1+R)^2} = 0$$

Thanks to any software it is possible to find the unknown value through a recursive process. In our example R is equal to 6.83%[41]. There are no restrictions dealing with the number of cashflows, both inflows and outflows, because there is always a number that satisfy the condition. The yield rate is a measure of profitability for the property. In general terms, comparables assets usually have similar IRR. This is obvious because in every efficient market the Internal Rate of Return is the indicator of the return of the investment given a certain level of risk. Comparable assets must have similar risks, which means similar return. Assuming that we are acting into a non-

[41] In this case we used the formula "IRR=" in Microsoft Excel 2015

perfect market, the best decision is the one that insure the higher IRR given the same level of riskiness.

2.3.3d NET PRESENT VALUE

Even if there are several ways to come up with a decision about investments, for sure the Net Present Value is the measure of returns that must be analyzed. The NPV is "calculated by selecting the target rate of return, calculating the present value of the future cash flows and comparing this present value estimate to the initial investment[42]".

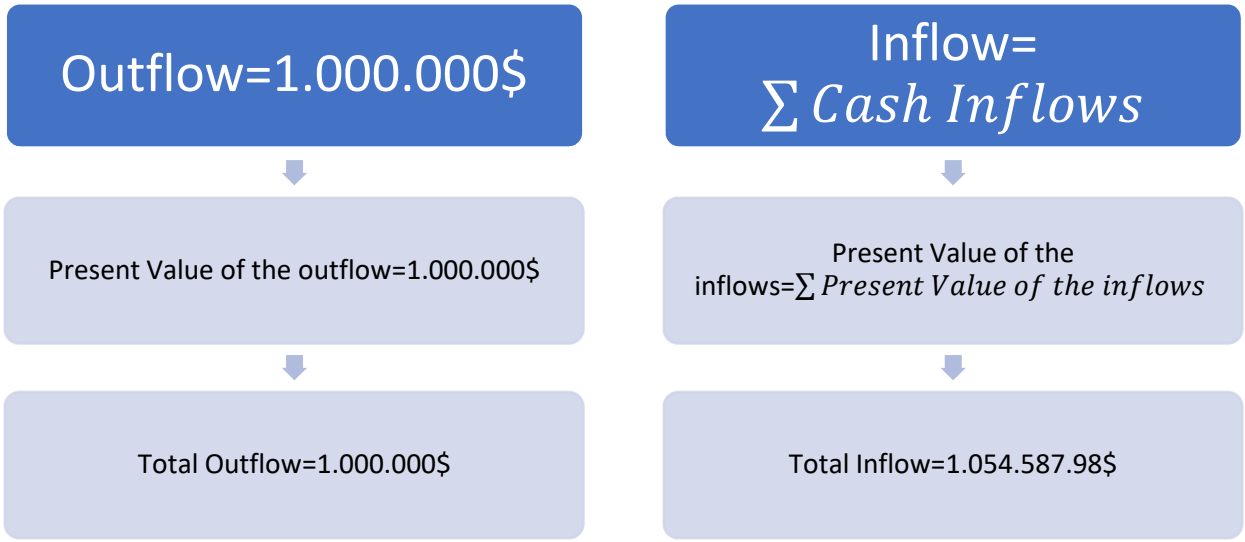
Assuming the benchmark for the investment is 11% (in other words, the rate given by the market for a similar investment with similar risk), let's solve the following evaluation:

Year	Cash Flow	Present Value (r=11%)
0	$ -1.000.000,00	$ -1.000.000,00
1	$ 100.000,00	$ 90.090,09
2	$ 102.000,00	$ 82.785,49
3	$ 104.000,00	$ 76.043,90
4	$ 106.000,00	$ 69.825,48
5	$ 108.000,00	$ 64.092,74
6	$ 110.000,00	$ 58.810,49
7	$ 112.000,00	$ 53.945,74
8	$ 114.000,00	$ 49.467,62
9	$ 116.000,00	$ 45.347,27
10	$ 1.318.000,00	$ 464.179,14

Table 13 – NPV – Example

[42] Fisher, J.D., (1991) *Income Property Appraisal*, Real Estate Education Co

In time zero (Year zero) the investor paid 1.000.000$, receiving money year by year until the last period (Year 10) where she is able to resell the property. Was it a good decision or not? To calculate the NPV, after discounting the time value of every flow, it is necessary to sum up all the values:



At this point the present value is:

$$\text{NPV} = \text{Total Present Value} - \text{Investment} = 1.054.587{,}98 - 1.000.000$$
$$= 54.587{,}98\$$$

If the value is positive, the chosen investment promises to provide a return higher than 11%, discounting rate set during the assumption. On the other hand, a negative NPV shows a lower return of the investment in respect of the 11% benchmark. Is crucial to underline that the NPV is a consistent indicator if the two property we are comparing are similar. This is given by the construction of the indicator itself: it provides the value of the return in dollars but there is no track of the percentage of profit in comparison to the initial investment.

3. Appraisal of Real Property

After investigating the theoretical aspects of real estate, now it will be proposed two real valuation examples. These examples are both significant because they can help to consider the same appraising process under two different points of view according to the economic environment that characterize different areas of the world.

The Sales Comparison Approach applied in Miami

This chapter is entirely dedicated to the valuation theme. The first property we are going to prize is located at Carlyle Ave, Surfside, 33154-2443, in Florida. The asset is residential, more precisely a ranch, and because of this we are going to estimate its value using the coherent technique for this asset-class: the sales comparison approach. Let's first describe the subject, providing all the information we listed and described in the second chapter of this document.

Property Address	Carlyle Ave
County	Miami-Dade
Tax/Year	$ 5.832,00
City	Surfside
State	FL
Zip Code	33154-2443
Parcel	14-2235-006
Occupant	Owner
Property Type	SFR
Ownership Restrictions	None
Additional Information	Flood Hazard

Table 14 – Subject Description – Home appraisals INC - Report

The first part of every report provides the general information we reported in the previous table. In this case we have a single house (SFR) in the county of Miami, but this general information can be the beginning for several considerations about the estate:

- The future owner will pay 5.832 $ to the county as taxation. In case of a buy-to-rent investment is nice to have the precise amount of money required by the municipality, being able to better forecast incomes and outcomes.
- At the moment of the sale the property is occupied by the owner, which means that once the buyer is be able to find the final deal with the seller it will be possible to start occupying/renting the property, without any pending tenancy contract. This is another plus for the buyer because he is not affected by any decision preciously taken by the seller. For example, if the rental previously required for that house was too low and the contract was lasting for years after the sale, this would have had a negative impact on the sale-price.
- There are no restrictions on ownership affecting the value of the house, so the future owner will not ask for a discount blaming any sort of limitation on his property/rights on the property.
- The last line of the table points out any peculiarity of the asset that is not standardized and, in this case, it is pointed out a risk related to flood hazard. Every area has its own risks, but certain Stats on the East Coast of the US often are hit by floods and storms. It is almost impossible to deduct a precise amount of money from the final price discounting this type of information but on average experts for this issue deduct from 2 to 5% of the property value.

Purpose of this appraisal	Market value
This report reflects the following value	Current
Approaches developed for this appraisal	Sales Comparison Approach
Property Rights Appraised	Fee Simple
Intended Use	Personal Use, no finance transaction involved

Table 15 – Subject Description – Home appraisals INC - Report

The second table, also known as Assignment, point out basically the reason why the appraisal has been asked and the underlying assumptions. Going through every voice, we have:

- The purpose of the document, in this case establishing the market value of the house. In other circumstances, the final goal could be quantifying the replacement cost for example;
- In every field of study, time is a key-variable but in the real estate field it is one of the most important aspects. According to what we just said, professionals have to declare if they are valuing the property at current prices or they are forecasting the value for the future, because if they are trying to predict what will happen in five or ten years there are many other macroeconomics variables that should be considered.
- As we said at the beginning of the chapter, for this residential property the best way to appraise is applying the Sales Comparison Approach, because usually the Discounted Cash-Flow method fails to predict the value for this category, overestimating the asset;
- During the appraising procedure the expert has to verify which kind of right are inbounded in the property, evaluating the potential loss given by the limitation of certain benefit granted by the ownership of the asset. In this case there are no limitations on the given asset because the simple fee has been declared by the expert;

- The intended use simply is the clarification of the agreement between the appraiser and the property owner. The overall valuation can change if the owner is wondering to sell his property in the market or, on the other hand, is going to use his property as a security for a mortgage.

Usually, after this description every report presents in detail the condition not only of the overall property but also every single part of it. Rooms are shown trough several pictures and relative description too. In our case we got:

4 Subject Front

5Subject Rear

6 Subject Street and Subject Side

From these pictures potential sellers can appreciate the external condition of the house and even more important the neighborhood where the property is. Dealing with the rooms, the house is composed by:

7Subject Living Room - 8Subject Bed room 1 (Main Bed room)

9Subject Bathroom 1-2-3

10Subject kitchen

11Subject Bed Room 2-3

From the area calculation results what follow:

Like in every appraisal process there are certain numerable variables, like the extinction of the various rooms and the age of the property. On the other hand, the valuation about the quality, for example, it is completely on the experience and the due diligence of the professional in charge.

As we said in the second chapter, residential properties are valuated using the sales comparison approach because on average there is a sufficient number of transactions involving asset that can be considered fitting comparables with the one under evaluation. Thanks to counties' databases we have the chance to find all the deals in previous ages, even if recent sales should be preferred. It is important to remark the first cornerstone for an excellent job: especially for large cities, the scenario can change in a

Gross Living area	1.795 SqFt
Total Rooms	8
Total Bedrooms	3
Total Bathrooms	3.0
Location	Interior Lot
View	Residential
Site	5.600 SqFt
Quality	Average
Age	72

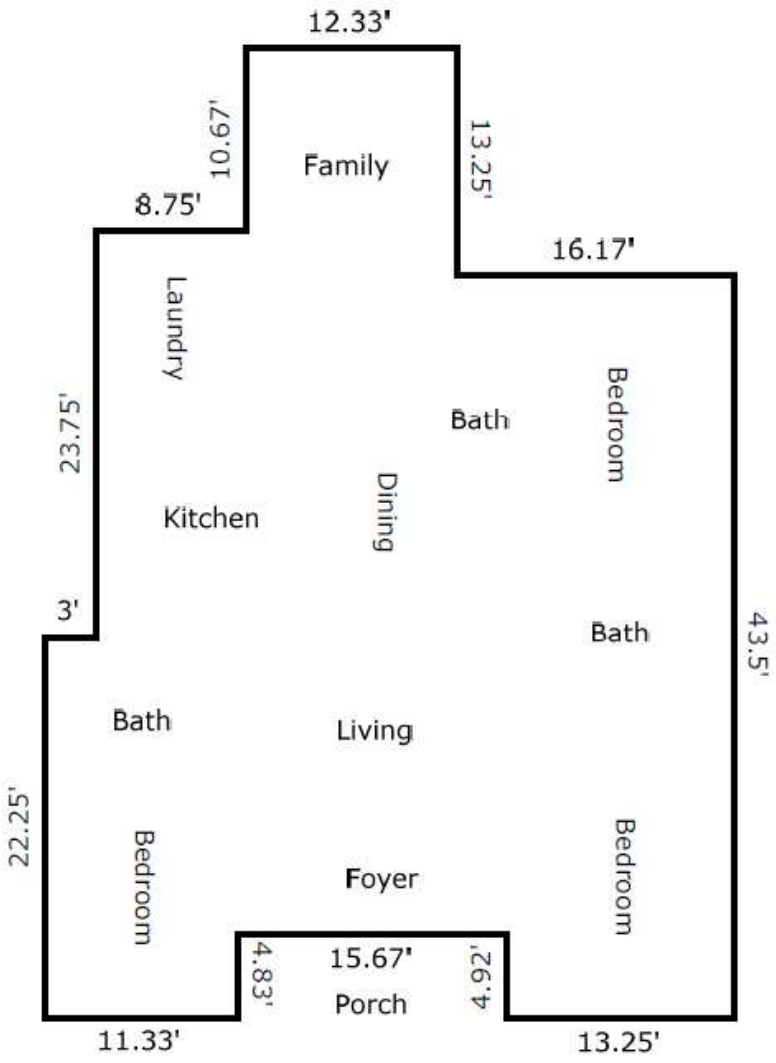


Figure 12/Table 16 – Subject Description – Home appraisals INC – Report

13 Figure – Subject Description – Home appraisals INC – Report

few miles and keeping this in mind is the first step to spot correct comparables as close as possible to the subject. It is exactly according to this reason that in the figure we pointed out in the map the precise position of the subject and the relative distance of three comparables. These comparables have similar characteristics in size and in respect to the location, we see that they are located close to the property under investigation (comparable number three is the farthest and it is only half mile southern). Being more detailed, let's analytically list comp's in their variables for the valuation, knowing the price agreed by buyers and sellers:

- Comp number one: Carlyle Ave

Gross Living area	1.734
Total Rooms	8
Total Bedrooms	3
Total Bathrooms	2.0
Location	Interior Lot
View	Residential
Site	5.600 SqFt
Quality	Average
Age	71
Proximity to Sub	0.41 miles S

Figure 14/Table 17 – Subject Description – Home appraisals INC – Report

- Comp two: Carlyle Ave

Gross Living area	1.474
Total Rooms	8
Total Bedrooms	3
Total Bathrooms	3.0
Location	Interior Lot
View	Residential
Site	5.600 SqFt
Quality	Average
Age	66
Proximity to Sub	0.28 miles N

Figure 14/Table 18 – Subject Description – Home appraisals INC – Report

- Comp three: Emerson Ave

Gross Living area	1.654
Total Rooms	8
Total Bedrooms	2
Total Bathrooms	2.0
Location	Intrior Lot
View	Residential
Site	5.600 SqFt
Quality	Avarage
Age	62
Proximity to Sub	0.5 miles S

Figure 15/Table 19 – Subject Description – Home appraisals INC – Report

The analytical part of the valuation, where the calculation of the adjustments has been made, is presented in the table in the following page. Like in every report the values are listed in columns:

- The first column lists every aspect potentially having an impact on the value of the asset. Both subject and comparables are investigated in relation to these aspects and discrepancy in price will be pointed out line by line;
- The second column summarizes dimensions and characteristics of the subject. It is something that of course was already pointed out, but this repetition helps us comparing the assets;
- Column number three, four and five present the three subjects chosen by the appraisal and they are split into two sub-columns where differences and adjustments are matched. Thanks to this table we have the chance to understand which lines are causing the overall adjustment.

Comparable number one was sold on the 18th of August 2012 for 450k and its value have been adjusted for a comprehensive difference ok +40k, discounting additional 10k for the difference in the number of bathroom (two against three of the subject), -5k for the presence of a garage (where the subject gives the owner the chance to park only in front of the house) and +35k for the pool.

Comparable number two is the comparable with the highest overall adjustment, +65.1k, mainly discounting the absence of the pool (+35k also in this case) and the huge difference in the total square-feet measurement.

The last comparable, on the other hand, is the closest comparable dealing with the adjustments, with only 10k delta.

	Subject	Comp One		Comp Two		Comp Three	
Address	Carlyle Ave Surfside	Carlyle Ave Surfside		Carlyle Ave Surfside		Emerson Ave	
Sale Price		$ 450.000,00		$ 428.000,00		$ 490.000,00	
Sale Price/GLA		$ 259,52		€ 290,37		€ 296,25	
VALUE ADJUSTMENTS	**DESCRIPTION**	**DESCRIPTION**	**ADJUSTMENTS**	**DESCRIPTION**	**ADJUSTMENTS**	**DESCRIPTION**	**ADJUSTMENTS**
Sale or Financing Concession		Cash	—	Unknown	—	Cash	—
Date of Sale		08/15/2012	—	07/25/2012	—	06/13/2012	—
Rights Appraised	Fee Simple	Fee Simple	—	Fee Simple	—	Fee Simple	—
Location	Interior Lot	Interior Lot	—	Interior Lot	—	Interior Lot	—
Site	5.600 SqFt	5.600 SqFt	—	5.600 SqFt	—	5.600 SqFt	—
View	Residential	Residential	—	Residential	—	Residential	—
Design	Ranch	Ranch	—	Ranch	—	Ranch	—
Quality of Construction	Avarage	Avarage	—	Avarage	—	Avarage	—
Age	72 Years	71 Years	—	66 Years	$ -3.000,00	62 Years	
Condition	Good	Good	—	Good	—	Good	—
Room Count (total)	8	8	—	8	—	8	—
Baths	3.0	2.0	$ 10.000,00	3.0	—	2.0	$ 10.000,00
Gross Living Area	1.795	1.734	—	1.474	$ 32.100,00	1.654	$ 8.500,00
Basement	None	None	—	None	—	None	—
Rooms below Grade	None	None	—	None	—	None	—
Functional Utilities	Avarage	Avarage	—	Avarage	—	Avarage	—
Heating/Cooling	Central	Central	—	Central	—	Central	—
Enery & Efficiency	Avarage	Avarage	—	Avarage	—	Avarage	—
Garage	Open Parking	1 car-garage	$ -5.000,00	Open Parking	—	1 car-garage	$ -5.000,00
Porch/Patio/Deck	Porch/Patio	Porch/Patio	—	Porch/Patio	—	Porch/Patio	—
Below Ground Pool	Yes	None	$ 35.000,00	None	$ 35.000,00	Yes	—
Net Adjustment			$ 40.000,00		$ 67.100,00		$ 13.500,00
Adjusted Sale Price of Comparables			$ 490.000,00		$ 495.100,00		$ 503.500,00

Table20 SCA- Case Study Summary

After our analysis we can state that the third comparables is the one that should be chosen to provide the best valuation or, at least, the fairest one. All the adjustments (three) are not so valuable and the same deltas have been applied to the other comparables (+10k for an extra bathroom have been added also to comparable number one, as well as the correction of 5k for the garage). Just for the records, this asset has been sold a couple of months later for 490k, which is very close to our forecasted value, because on average during the negotiation phase the price drops from 6% to 11% depending on the typology of the house.

American Market vs Italian Market

The appraisal processes applied valuating the US market isnot applicable worldwide mainly because of liquidity reason. We already pointed out that investing in the real estate sector can cause several typologies of risk but the liquidity risk in other markets out of the US can be even more severe. Let's compare just one value:

	Residential units sold in 2017	Population	Ratio
Italy	542.480	59.797.977	0,009
US	6.440.000	327.257.460	0,020

Table 21 Italian & American Ration: transaction on population

"In 2017 the residential units traded in the Italian market were 542.480 against 6.440.000 in the US. Dividing these numbers by the number citizens in the two countries we notice that in the US the ratio is more than double in respect to the

Italian one[43][44][45][46]". Moreover, in Italy only Milan, Rome, Florence and Venice can be considered by foreign investors as active markets. Because of this reason, at this stage of the chapter it is crucial to identify another approach for the evaluation of assets placed in illiquid market. And we will do it through another case study.

The Sales Comparison Approach applied in Sardinia

The asset under investigation now is located in a suburban area belonging to the municipality of Quartu, a small town in south Sardinia ten miles far from Cagliari. The two cities are connected by the highway but more important the property is well connected to the other municipalities. Our asset, whose characteristics will be provided in the following table, has been built in a strategical position in a neighborhood easily reachable with the public transportation, and it so not very far from the airport.

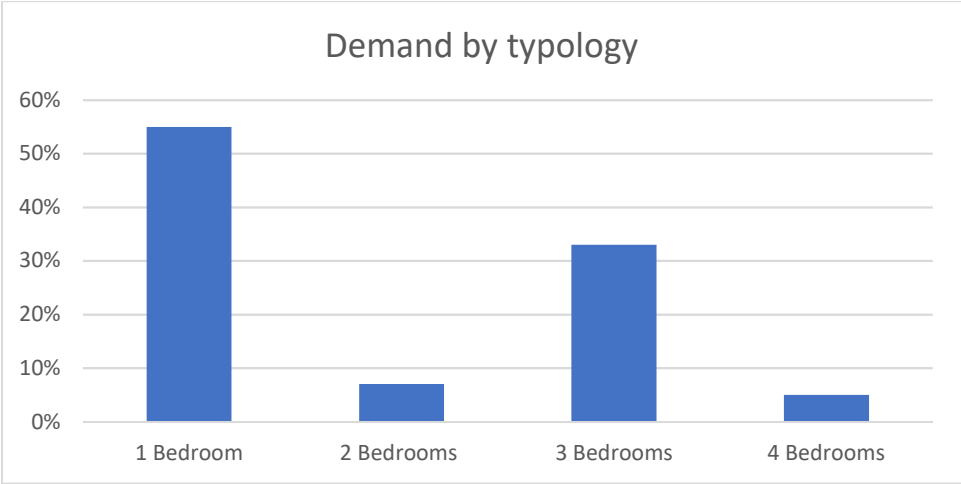
typology	Condos
intended Use	Residential
Commercial Surface	1.541 (smq)
Number of Unit	62

17 – 18 : Condos Position and Front Yard (following page)

[43] https://www.edilportale.com/news/2018/05/mercati/compravendite-immobiliari-in-salita-del-49-nel-2017_64157_13.html
[44] https://www.statista.com/statistics/275156/total-home-sales-in-the-united-states-from-2009/
[45] https://www.populationpyramid.net/it/italia/2017/
[46] http://www.worldometers.info/world-population/us-population/

The property is composed by two condos (31 units each) for a total surface of 1.541 sqm and even if it is a good product for the local market it is completely unrented. How to evaluate it? Why nobody is renting it? What is the right method to appraise that property?

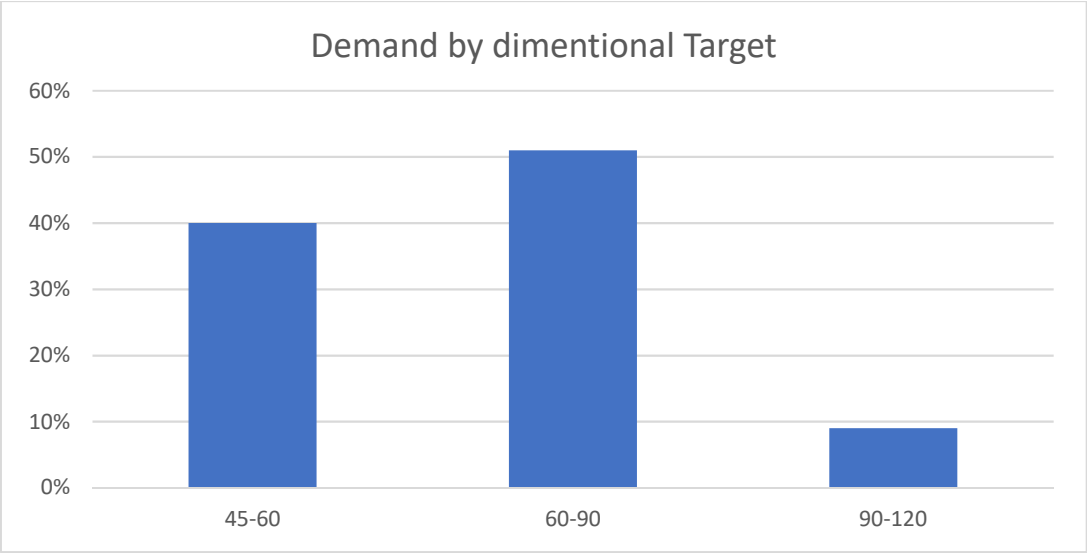
The answer could appear naïve, but it is reasonable because in particular geographical context, like the residential in south Sardinia, the sales comparison approach is as a good proxy as in other market (in the previous case we were acting in the US market and more precisely in Miami, one of the most active market-place within the American borders). The right evaluation in this context must be driven, at least in first place, by macroeconomics variables like demand, supply and market analysis. "Agenzia delle Entrate" every quarter asks real estate agencies information about their customers aiming to provide better control and guidelines to the sector. According to their software tracking websites' visitors, every real estate agency group can collect what surfers were looking for, and the following graphs are representations of what we think is important to consider:



Graph 1 Agenzia delle Entrate - Demand by number of rooms

Out of more than 800 click, potential seller where looking for properties with these specifications considering the overall number of bedrooms. The local demand seems to be particularly strong for properties composed by one or three bedrooms, meaning that it will be more LUCKLY to sell these types of property but, on the other hand, apartments with two or four bedrooms will be sold slowly and, generally, providing a drastic discount on the original price. In the first period 1-bed and 3-bed owners have the chance to grand smaller discount on initial prices. This variable could increase its SIGNIFICATIVITY if a second variable comes into place: the size of the unit. We agree that size and number of rooms are two variables positively correlated but differences in squared meters have a direct impact on the final price of the asset, being the final price calculated as:

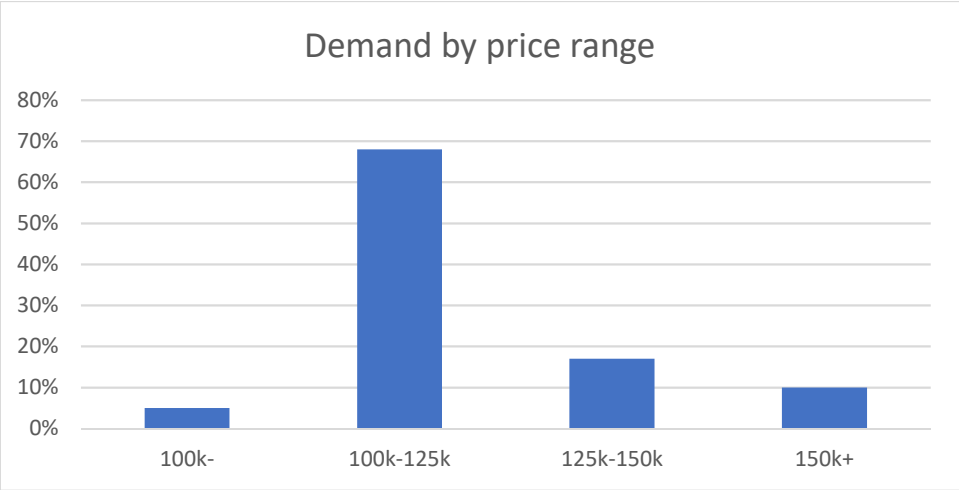
$$Price\ paid = Price\ per\ squared\ meter\ \times\ square\ meters$$



Graph 2-Agenzia delle Entrate - Demand by dimention

Especially in the XX century apartments were bigger, even comparing assets with the same number of rooms. Because of this peculiarity probably trying to sell units with large units and rooms can be considered nowadays a disadvantage.

The last variable we are going to consider is the price, even if probably it is the most important one. According to the following graph, more than 60% of the potential buyers were looking for assets costing between 100.000 and 125.000 euros. Buyers with capacity of expenditure under 100k were close to 5% but what should drive our analysis is the percentage of the last cluster considered: only around 10% of the active investors were, and probably are, ready to spend more than 150k, proving that developers should not build expansive flats and houses, risking high levels of unsold.



Graph 3-Agenzia delle Entrate - Demand by price

In order to prove that what we just said is correct, the following table presents in detail what has been offered in the market in 2017. Every column collects the measurement in square feet of the asset offered collocated in the market: less than 45sqm, 46 to 60 sqm, 61 to 90 sqm, 91 to 120 sqm, 121 to 150 sqm and more than 150 sqm. Each line, on the other hand, clusters every typology of apartment according to the number of rooms: studio, 1 room, 2 rooms, 3 rooms and +4 rooms apartments. In the past, probably, the table was showing different results, with higher concentration of assets with larger sizes, but in 2017 a few examples are significant providing a good summarize of the market:

- 1 room apt: there were 13 units available, but the distribution was more concentrated were the demand was higher, more precisely under 60sqm;
- 2 rooms apt: there were 16 units available in the small market of Qurtu but also in this case we notice that the large majority of these units were characterized by small extensions. In the 90's, for example, this typology of apartment was counting from 100 and 120 sqm but, as we said, the demand deeply changed.

	Supply (n of units) in the market for dimensional class							
	<45	46-60	61-90	91-120	121-150	>150	Total	Total (%)
Studio	0	0	0	0	0	0	0	0%
1 room Apt	3	6	4	0	0	0	13	15%
2 rooms Apt	0	9	41	3	1	0	54	63%
3 rooms Apt	0	0	5	6	4	1	16	19%
+4 rooms Apt	0	0	1	1	1	0	3	3%
Total	3	15	51	10	6	1	86	
Total %	3%	17%	59%	12%	7%	1%		

Table 22 Agenzia delle Entrate – complete data-set

After considering all the variables we pointed out, professionals are asked to run their studies and appraise the assets applying the sales comparison approach, because this is the milestone of every valuation process. The following table presents five comparables but in this specific condition of illiquid market the comparables are not as fundamental as in the previous business case, but their costs are usually considered as benchmarks.

City	Address	Main Use	Location	Floor	Status	Typology	Box	Weighted sqm	Asking price	
									€	€/sqm
Quartu	Via G.Marconi	Residential	Same	4	Good	Apt	No	102	$ 145.000,00	$ 1.421,57
Quartu	Via Orru	Residential	Same	5	Good (+)	Apt	Y (7k)	56	$ 71.000,00	$ 1.267,86
Quartu	Via Malta	Residential	Same	5	Good (-)	Apt	Y (11k)	78	$ 115.000,00	$ 1.474,36
Quartu	Via Grecia	Residential	Same	5	Excellent	Apt	No	81	$ 138.000,00	$ 1.703,70
Quartu	Via G.Marconi	Residential	Same	2	Acceptable	Apt	Y (8k)	56	$ 75.000,00	$ 1.339,29

Table 23 Comps in Quartu (CA)

In this case we do not have the same information as the previous case study, unfortunately the data users can collect are somehow poor, not as detailed as we would like to know to estimate the proper price per square feet developers should ask for their new building in Quartu.

However, considering the average price of these five comparables and their proximity to our subject, it is reasonable to forecast a price per square feet close to 1270€ because the final price is always 10% higher than the closing price, even if the percentage can change according to the lack of demand in the local area: in Milan and Rome the “discount k” dropped to 8% maximum, in less desirable areas the discount rocket to 12-13%.

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