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Investment property in rental: Profitability and risk analysis

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Abstract. Until 25/30 years ago it was not essential to study the investments in detail to understand where to deposit own savings: the growing markets and the economic boom favored the success of a large portion of investments on the market and in particular for the housing market , where the investment risk was particularly low. In recent years, however, the economic landscape has reversed and there is an increasing need for specific analyses that seek to try to estimate the future development of the value of own tangible property and the assessment of potential income.
This work focuses on the risk and profitability of rental real estate investments, looking at average return values according to the different uses of buildings and identifying an average risk value, and then comparing them with securities investments such as ten-year BTPs.

Keywords: Real Estate Investments, Building Risk- Profitability, Turin Buy-Rent.

1 Investment and Investor

Before entering the heart of the topic, it is necessary to specify some methodological elements adopted in order to make the work as close as possible to a real investment case [1, 2]. First of all, the work is oriented to the average investor, which has relatively modest capital, and that operates according to the logic of “good saver”. The category of “average investor” refers to the vast majority of Italian investors, who wish to exploit their savings through small-scale investments. In this way the scope of the investment is reduced : small to medium sized buildings, individual family units or small buildings destined to commercial activity ; this excludes industrial sheds, rural buildings and large buildings.

Finally, the average investor carefully assesses where it is better to invest [3], concentrating on the search for an easily leasable property, for instance a residential apartment, shop or car park, not located in stately buildings nor inside buildings with valuable finishes or particular locations: the investor is interested about common property, a competitive price, so the investor can rent it for a sum equal to the average rental value. Therefore, the research will focus the attention on buying-selling values and renting out residential houses , shops and car boxes[1]. The center of our investigation is the territory of Turin and the neighboring municipalities, exactly the 34 municipalities belonging to the first and second territorial areas near the city with the addition of some territories considered particularly significant. The municipalities the same municipalities will then be subdivided into three internal zones: center, semi-center and periphery (with the exception of those in which real estate values do not change significantly depending on the area, for which these specific subdivisions would be superfluous).

2 The Analysis

In Turin, instead, the information were collected according to the typical subdivision into 26 districts [4, 5].

[1] *The basic values used as the starting data for the analysis were collected from the OMI database, Observatory of the Real Estate Market, of the Agenzia delle Entrate-----.*

	DISTRICT / ZONE	BUILDING TYPE	MARKET VALUE (€/mq)		RENTAL VALUE (€/mq x mese)		AVARAGE MARKET VALUE (€/mq)	AVERAGE RENTAL VALUE (€/mq x mese)	GROSS RETURN
			min	max	min	max			
TORINO	Centro	Civil apartments	2100	2850	8,0	12,0	2475	10,0	0,048
		shops	2600	5200	17,9	28,5	3900	23,2	0,071
		Garage	2400	2750	19,2	25,6	2575	22,4	0,104
	Valentino	Civil apartments	1850	2750	6,0	9,1	2300	7,6	0,039
		shops	1200	1650	7,4	10,0	1425	8,7	0,073
		Garage	2500	2700	19,9	24,0	2600	22,0	0,101
	San Salvario	Civil apartments	1400	1950	5,9	9,0	1675	7,5	0,053
		shops	1000	1800	7,7	15,0	1400	11,4	0,097
		Garage	1600	2400	14,2	21,2	2000	17,7	0,106

Go on …

	DISTRICT / ZONE	BUILDING TYPE	MARKET VALUE (€/mq)		RENTAL VALUE (€/mq x mese)		AVARAGE MARKET VALUE (€/mq)	AVERAGE RENTAL VALUE (€/mq x mese)	GROSS RETURN
			min	max	min	max			
BRANDIZZO	Cenetrale	Civil apartments	820	1250	3,5	4,8	1035	4,2	0,048
		shops	760	1050	4,1	5,8	905	5,0	0,066
		Garage	800	1150	4,5	6,2	975	5,4	0,066
BRUINO	Cenetrale	Civil apartments	1150	1500	4,8	6,6	1325	5,7	0,052
		Garage	810	1150	4,8	6,7	980	5,8	0,070
CAMBIANO	Cenetrale	Civil apartments	810	1150	3,8	5,0	980	4,4	0,054
		shops	730	1100	5,6	6,6	915	6,1	0,080
		Garage	930	1100	5,4	6,6	1015	6,0	0,071
	Semicentrale	Civil apartments	830	1650	5,1	7,1	1240	6,1	0,059
		shops	730	1100	5,5	6,6	915	6,1	0,079
		Garage	930	1100	5,4	6,6	1015	6,0	0,071
	Perferia	Civil apartments	830	1250	4,1	5,9	1040	5,0	0,058
		shops	790	1150	5,5	6,6	970	6,1	0,075
		Garage	940	1150	5,4	6,6	1045	6,0	0,069

Go on …

Gross Return = (Value of rentals x 12 months) / Market value**

A first analysis of the data collected already reveals significant differences in return: it is not uncommon to find areas where the profit is 4-5 times higher than others.
In any case, what the entrepreneur assesses when he makes an investment is always the net profit , which mean the difference between the gross return value and the expenses incurred for the same investment.
Therefore, the analyses include the costs necessary for the management and the maintenance of the investment [6] (amount for the contract, energy report of the building, ordinary overhaul and replacement of the boiler, repairs, replacement, painting, etc...), general accounting (administrative and business consultant costs), insurance and property tax (In this situation we decided to apply 30% net because our commercial investigation concerns a wide range of investors.). Expenses also include the vacancy quote : when the contract terminates, the lessor loses the rent of that property for a period, due to the search time lapse necessary to find a new tenant. The expectation of this transition period is approximately 2 months. In the current context the tenant change house not later 4 years, so we estimate that the owner of the accommodation loses two of monthly rent every 4 years. We prefer to estimate the defaulting tenant as a risk component in our analyses.
The analysis of the data shows that there is a deep gap between the profits: we find not-ordinary data but we have to explain them for a correct interpretation.
First of all, it seems necessary to point out that the data obtained are the result of surveys on large large-scale (statistical basis), approximations, even if limited, and estimates, so they should make the calculation not perfectly in line with reality [7]. Moreover, it is right to remember the we are talking about statistics, so not all the cases of buying-renting a property are close to the data that we have found. This happens because, in practice, there is not only the law of the market, of the statistical

average , of "good business", but often the law of feeling, chance and necessity. It is therefore easy to find investments with significantly lower returns in reality. We could consider the contexts in which the lessor owns a rented property, with high maintenance and management costs, but he keeps it in spite of everything due to affective reasons, for example. We have to consider also the opposite cases: it should be equally normal that there is higher profits of investment.. We could consider , for example, the circumstances in which the tenant, in love with the aesthetics of the property or that has not the material time for the research of similar house, is willing to pay an out-of-market figure, too high compared to the average of the area and period. Similarly, when the lessor is able to pay property lower than the market value, the return is higher than the average returns [8, 9]. As you know, the estimation of an investment, whatever it could be, requires comparisons, theoretical reasoning and careful statistical forecasts. However, these factors can't lock the reasoning, because they are implicit variables in final evaluation. *Small Parenthesis: The zone by zone tables with the calculation results are not entered for not protract the text. It is considered more important to think about average values as they have a lower level of error.*

A first important distinction immediately emerges from the net return values: it would not be correct to put at the same level the investment in the purchase and renting of properties with different uses. In fact, it can be observed that box profits, if compared to the retuns of the apartments, have on a much higher average value: an average of 3.5%, far from the average value of residential houses , which is 1.8%.

We couldn't say the same things about the stores, which are located in an intermediate area between the two previous aforementioned : the average of all the values is around 3.4%. These differences are justified by market reasons. Boxes, for example, have average higher per square metre thanks to their limited size (We refer to 14-17 sq.m): in fact their rental quotes are accessible to a large part of the population . Although the price per square meter is theoretically disadvantageous if we compare it to other properties, Renting box's cost is lower, so there is a broad range of customers .

Instead the stores, maintain lower cost/ sq.m compared to the cost/sq.m of boxes , as we have already said before about measurement, but their economic value is included in a higher range than the accommodation's class (on average more than one percentage point). There are many reasons [10] with which we could explain what we have just said, below the most important ones:

- They lodge business activity which produces income;
- The manager of the commercial activity should deduct part of the rent from the fees;
- They are often located in transit ways, city centers, quarters and locality and, therefore, generally in areas where the property has a higher market value per square meter; - It is more risky investment: in fact, in recent years, the average replacement period of the lessee has decreased considerably and so, in order to amortize the costs of the months in which the property remains vacant, the monthly fee is raised, even if the increase is a bit considerable .

Therefore it is necessary to deal with these two main topics , civil dwellings and shops, in different ways .

Concerning the first ones mentioned , there is average return value of 1.8% for all the municipalities of Turin' district and an average return of 1.8% for the city. As you

could see, these averages are not different from each other.. However, this fact was predictable: renting the house is one of the highest (if not the most wasteful) expenses that a family has to support . Accordingly, it is advisable to choose carefully, considering what the market offers and what are the most competitive prices: however, prices do not always follow criteria linked to the value of the property, but they tend to be levelled towards the lowest average value, because the risk is that it is not possible to rent at prices considered fair by the owner. Leaving out the average values for an instant, we could find that the profits, considering on the cities and zones, change a lot, in some cases even up to 300 %. For example, we talk about residential homes in Beinasco, where returns do not exceed the value of the unit, in particular we refer to an average of 1.0%. Contrariwise, values are definitely above the average in the area between the center and the suburbs of Rosta' municipality of Rosta, with average values equal to 3.3 percentage points. The return increases if we pay attention to the data of the shops: the average value in Turin and district is equal to 3.4%, which is close to the double of the estimate that we could find for the apartments. However, in this case the difference between Turin and the other neighboring countries is growing stronger: the capital city imposes itself with a much higher average value comparate to shops' returns, with averages close to 4.4%. This diversity depends on clear fact: Turin, with its 900 000 inhabitants, has a potential demand from consumers which is far greater than that of the less populated neighboring countries.

As you could have supposed, the highest values can be found in the city of Turin: in particular way in the San Paolo area, shops have an average value of 7.4%; this is one of the highest values of our research. This startling fact is one of the highest of all the research, including the boxes, which have, as known, returns higher than the average of other properties. Against, the low market value of many of houses in this area, which is caused by dated and not particularly cured residential building, and the high rent charged, are two important factors that we have to necessarily consider.

Lastly, we have to consider the last category: car boxes. For the above reasons, these properties benefit from a much higher average return on investment than housing, which is more than double. In fact, the average of all the values found in Turin and district is 3.5%. In the first places of the first and second areas near Turin are located the center of Venaria, with an average profit of 6.7% and the center of Volpiano where the percentage is 6.7%. In Turin the values are further increased: the average return is 4.4%. This phenomenon derives, as it could be easily deduced, from the low number of parking lots and parking spaces in relation to the large number of users of the city. This means that the demand, which is superior in comparison to the being far greater than supply, has a positive impact on returns. As announced, it is interesting to compare the return on an investment in real estate market to an investment on multi-year Treasury bills, particularly those with 10-year maturity.

3 The Comparison: risk and profitability

In recent years, due to the economic crisis, the trend of the BTPs has been extremely volatile [11]; this depends on fears of a breakdown in the euro zone and doubts about

the sustainability of Italian public debt. To date, values seem to have stabilized in view of increasing investor confidence and the slight growth of national markets. The trend in yield over the last decade of the 10-year BTP with maturity has fluctuated between a minimum of 1.53% and a maximum of 7.261 % (nov 2011). The table below shows the current values (updated to 11/11/2017) of ten-year government bonds.

DESCRIZIONE	PREZZO	SCADENZA	RENDIMENTO NETTO (%)
BTP 1,45 % Nov 2024	101,30	7 anni	1,38
BTP 2,50 % Dic 2024	108,25	7 anni	1,27
BTP 5,00 % Maz 2025	125,69	8 anni	1,32
BTP 1,60% Gen 2026	99,86	9 anni	1,61
BTP 3,10 % Set 2026	122,56	9 anni	4,65
BTP 7,25 % 01 Nov 2026	146,95	9 anni	1,60
BTP 1,25 % Dic 2026	96,43	9 anni	1,68
BTP 2,20 % Gen 2027	103,8	10 anni	1,79
BTP 2,05 % Ago 2027	101,91	10 anni	1,84
BTP 6,50 % Nov 2027	142,77	10 anni	1,79
BTP 4,75 % Set 2028	127,07	11 anni	1,98
BTP 5,25 % Nov 2029	133,7	12 anni	2,06

Information on the sale of ten-year BTPs (Bank of Italy)

The average net return on these securities is 1.91 percentage points.

For the purpose of assessing the rental investments, it was decided to consider the investment in ten-year BTPs as' zero-risk'. It is clear that there is no investment with risk equal to zero. However, for practical purposes, it is necessary that we consider a way to find compromise between risks and returns of the investment. At the moment, the safest investments on the market are those that target government bonds.

Risk is defined as the variability (or volatility) of investments, obviously including potential losses as unexpected gains. The risk is, of course, always present in the market, but what changes is its perception by investors or, in other words, their confidence in the investment. Savers perceive the risk especially when it shows itself in the form of loss. Closely linked to the perception and evaluation of financial risk is the expected return on the investment: the higher the risk, the more the investor requires remuneration, premium for this risk. Risk is a key investment variable [12, 13]. In fact, Each person is characterized by a specific propensity to financial risk, which represents the level of individual tolerance to the possibility that the value of their investment should fluctuate more or less significantly over time. When you decide to invest in the markets, whatever they are (financial, real estate, etc.), it is it is necessary to consider this factor and choose the instrument, which suits the preferences and needs of each individual in the best way. Inasmuch as this work is not aimed at one single individual, the assessment will not take into account the many personal aspects involved in the choice of investment. We could define the concept of personal aspects as propensities towards certain types of investment, even if they are not apparently the most advantageous if we consider purely mathematical and statistical calculations, dictated by preferences, habits and individual needs, that influence their decision. For example, there are people used to exclude real estate purchases as the possibility of future investments due to habit or fear, leaning towards investments such as real es-

tate or commodities, even if perhaps less profitable or more dangerous. These decisions are made because a strong emotional component such as serenity and satisfaction influences the choice of the type of investment.
If we consider the return given by the BTPs, the choice of any other investment, if made in rational way, could start from this return, to whom we have to add risk premium that could supply the higher danger of investment if we compared to, although very low (near 0), which the risk which depends on State's credit instruments.

Net Return	Risk
1,95%	Null Value (0%)

It is still to be emphasized that economic inflation is the prolonged increase in the average price level of goods and services in determined period of time, which generates decrease in the purchasing power of the currency. Therefore, if inflationary period could be expected in the coming years, this consideration will be reflected in the net profits on State's bonds and part of the percentage will be used to cover the difference in purchasing power that my capital loses each year. Foreseeing inflationary developments in recent years, we could consider one percentage point as the reference value in calculation purposes. We have also to consider two parameters of return-risk in real estate investment. Regarding the first one, remembering that the investigation concerns only Turin and its districts, the average value is 2.9 percentage points per annum of the initial investment to purchase the property. Considering default risk, real estate investment does not foresee the possibility of losing completely the initial capital invested. The only way this could happen is that the property ceases to exist physically, which is unlikely situation in nature. Therefore, the invested capital does not risk default, but on the contrary is a victim of the market, since the value of the property increases or decreases the purchase/sale price according to market trends. However, real estate investment presents another risk, which affects profitability, making it equal to zero: the arrears. In order to quantify it, it was conducted survey on sample of 132 rented properties in Turin and its suburbs. The owners' interviews showed that 18,2 % of tenants have been evicted in the last year due to the insolvency of the landlord's rent. Instead, 12.9% complains of delays and irregular payment times, but then recovered in short time. Newspapers and magazines of sector, considering national data, speak about higher percentages, with around 42.0 % of property owners complaining about the failure to pay rent or, in any case, delays in payment after a few months. In northern Italy the situation seems to be better, indeed in this area the values are around 23,0 %. In order to continue our reasoning, 20% is taken as the reference percentage, the result of the comparison between the value emerging from the specialized publications and the valor of the interviews. However, it is to consider that the percentage inherent in delays is not taken into consideration, because they are not considered as loss, but only profit's postponement of a few months, therefore actually negligible. The risk for an owner not to receive rent for a longer or shorter period is assumed to be 20%. However, this risk cannot be compared directly with the risk of other investments, because, as I have already mentioned, the risk is not calculated on default, but on profitability. In fact, the risk is the return of about 3% on investment and not for its entire duration, but only for a period of time that,

considering the bureaucratic timing, varies from a minimum of 3 months to a maximum of 19 (in case of the tenants are minors or over 65 years old, the times could be further extended). At the end of this period, the lodging could be reoccupied, but another time reappears the risk of 20% not receiving income for a more or less short period of time. Therefore, the output data of this analysis give these percentages as a result, as regards real estate investment is concerned:

Net Return	Risk
2,9%	20% (on return)

It is good, also for this investment, to try to think about how inflation affects and how it modifies its values. We could separate this topic into two parts, the first one about the capital invested and the other one about the annual profitability of this investment.
The capital invested is not directly influenced by the cost of living. In real estate, at the time of the initial investment, it is like if you exchange money for the real estate. So from that moment I no longer own my initial capital, but property whose value increases or decreases according to the market. The discourse concerning profitability is different. Although this is a percentage of the invested capital, it could be increased every year with the increase in ISTAT by a value very close to that of the life price. However, this applies only to shops and boxes. For housing, in fact, since the formula of "cedolare secca" has been chosen for the calculation, it is not possible to apply increases until the end of the contract which, in our case, is 8 years. The following example tries to explain these arguments in terms of amount in order to understand how much the ISTAT increase will affect housing. An initial capital of €100,000 is invested for the purchase of an apartment. This, according to the chosen formula, gives an average annual net profitability of 2.9%, which is equivalent to € 2,900. After eight years that same apartment will have profit of 23,200 €.
If the owner had been able to apply the ISTAT increase and thus adjust the rent according to high cost of living, the return after 8 years would have been €24,028. The low percentage influence and the possibility, at the end of the contract, to adjust the rent on the basis of expensive life allows, in order to simplify the calculation, to consider zero the influence of inflation also on the profit of the housing and therefore has no influence on the entire investment of purchase and rent.
Comparing the following tables, the choice of investment, if guided only by the logical return-risk, would not seem difficult and would prefer to choose ten-year BTPs, given the good relationship between risk and return.

	Net Return	Risk
Ten-year BTPs	1,9%	Null Value (0%)
Rent & Buy Investment	2,9%	15% (on return)

In this way, the investment of rent would exclude from the choice, because it is not profitable compared to the risk incurred. If, however, this table is modified with the above inflationary considerations, we could be see that all debt securities and credit instruments are decreasing in profitability because, as already explained, part of it is

used to cover expensive life. The table would then be represented with these new values to compare:

	Net Return (- inflation)	**Risk**
Ten-year BTPs	0,9%	Null Value (0%)
Rent & Buy Investment	2,9%	15% (on return)

As you could see, the landscape has changed. The profitability of debt securities has fallen and now has values close to one percentage point.
Then there is still one aspect that we could consider. In this historical-territorial context, the property market has experienced and is still experiencing a period of severe crisis, with as consequent the drastic drop in house prices compared to the 2007 maximum values. Therefore, in addition to the risk of losing the return, there is another danger on the property that coincides with its loss of value, which would coincide with the loss of part of the initial capital invested.
From the analysis of the latest sales' data it appears that the curve is changing its inclination and prices are lightly reversing the trend. This affects the overlying tables. The return on investment in real estate would be positively affected by this recovery forecast as the return on investment would no longer come only from renting out the property, but also from the value's increase of the property compared with the time of purchase. It is easier to understand this argumentation if I provide an example. The usual accommodation, already considered in the previous example, costs today 100,000 € and annually promises net yield of 2,900 € (23,200 € at the end of the 8 year contract). The property at the expiry of the 8-year contract with the tenant will have increased its value by percentage value equal to the growth of the real estate market in these years. This increase will therefore have an impact on the return of investment, which will have on average net return of 2.9% on rent plus the percentage growth from the purchase value of the property, all without any risk of default. Summarizing, if we read the data in this key and take as true all the considerations previously made, the investment in rent seems to prevail over the debt securities considered. I think it's useful now to specify that there are many involved variables on which there is no certainty, such as inflation (we can't know the trend nor the future value), the real estate market (the value of the property could also decrease throughout the period by declining and completely modifying all the previous valuations), taxes (increases or future decrees could substantially change the results), the risk of arrears (in the future it could increase or decrease, upsetting the results).
Investing capital and predict its future development is a very complex operation, inasmuch as it is based on forecasts based in turn which on uncertain assumptions, considering that the number of variables and their uncertainty is very high. However, this does not mean that there is no precious information regarding the choice to investing in real estate in order to plan, however reliable, the development of own income.

References