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Housing: The Best Investment in History (On Paper)

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1 Introduction

One of the most common questions that I am asked is “should I invest in real estate?” Even more common than this question is the matter of fact statement that real estate is a great investment. These statements are not usually made about publicly traded REITs, but about direct private ownership of real estate assets; buying a condo to rent out or renting out the family home when a new home is purchased. In some ways the perception that real estate can be a great investment has basis in the long-term data, but there are a lot of factors to consider.

Real estate, not including the principal residence, makes up a substantial portion of many investment portfolios. This is true of both institutions and high net worth families. Based on Russell Investments’ 2012 Global Survey on Alternative Investing, institutional investors who employ alternative investments in their portfolios allocate, on average, 4.7% of their portfolio assets to private real estate investments. The Knight Frank Wealth Report (2017) estimates that ultra high net worth families allocate 24% of their wealth to real estate, excluding their homes. As at the end of 2015, housing made up 13% of the overall investable assets in the US, 28% in the UK, 11% in Japan, 22% in Germany, and 23% in France (Jordà et al., 2017).

The rational motivations for investing in real estate are fairly obvious: income generation, capital appreciation, diversification, and hedging against inflation. There are also irrational motivations, like the illusion of control bias – investors believe that they have a high degree of control over the outcome of their real estate investment, and the overconfidence bias – investors believe that they have an ability to find mispriced properties. I will not directly address these biases again, but their irrationality should be apparent based on the information within this paper.

This paper addresses private direct ownership of real estate assets, specifically residential housing. It gives an overview of past housing returns, details the benefits that an investment in housing can offer, breaks down the unique characteristics of a direct real estate investment, and offers a return calculation for a hypothetical investment in housing.

2 Housing Returns

Investing in housing seems intuitively obvious to many investors. The thinking typically goes that if you can buy a property and rent it out for cash flow while building up equity, you are set. The long-term data confirm this intuition.

2.1 Past Data

The returns of housing as an investment have been documented as far back as 1870. Jordà et al., (2017) demonstrate that from 1870 – 2015 investing in global housing produced the best long-term returns of any asset class, including equities. Not only has housing outperformed equities, it has done so with less volatility. The housing return discussed in the paper is a mix of capital appreciation and rental income, with an approximately equal split between the two. It is worth pointing out that the capital return alone has only beaten inflation by a relatively modest 1.72%. This approximately corroborates Dimson, Marsh, and Staunton (2018) who find an average real price return on housing of 1.3% from 1900 – 2017. These returns do not reflect leverage, which most investors use to invest in property. Employing leverage would amplify both the risk and return characteristics of the returns.

Table 1 - Real (inflation adjusted) returns of housing and equities

	FULL SAMPLE (1870 – 2015)		POST WWII (1950 – 2015)	
	Housing	Equities	Housing	Equities
MEAN RETURN	7.05	6.89	7.44	8.28
GEOMETRIC MEAN	6.61	4.64	7.10	5.54
STANDARD DEVIATION	9.98	21.94	8.88	24.20

Data source: Jordà et al. (2017)

In addition to strong returns, housing has had a low covariance with equities. Interestingly, while equity markets across the globe have become increasingly correlated with each other over time, housing returns in various geographic regions have remained uncorrelated. These characteristics make adding global housing returns, in aggregate, to a portfolio extremely attractive. It is clear from the past data that an ideal back-tested portfolio of risky assets would have held some mix of housing and stocks.

Canadian real estate returns have been similarly strong and had a low correlation with equities. Based on the monthly national average price from the Canadian Real Estate Association going back to 1980, we can see that the correlation between Canadian real estate prices and equities has been low.

Table 2 - Equities and Canadian real estate (price only) correlation

Data Series	CREA National Average Price	S&P/TSX Composite Index	Russell 3000 Index	MSCI EAFE Index (net div.)
CREA National Average Price	1.00	0.10	0.07	0.09
S&P/TSX Composite Index	0.10	1.00	0.66	0.51
Russell 3000 Index	0.07	0.66	1.00	0.59
MSCI EAFE Index (net div.)	0.09	0.51	0.59	1.00

Data source: Canadian Real Estate Association, S&P Dow Jones, Russell, MSCI, Dimensional Returns Web

2.2 Dispersion of Geographic Returns

While it is interesting to observe the global average housing return, most real estate investors are not globally diversified. In fact, I believe it is likely that many individual real estate investors own property in a single city. Investing in global housing may have outperformed equity returns, but this is not true for every country. For example, the real total historical return to housing in Spain has been 5.21%, Italy 4.77%, the UK 5.36%, and the US 6.03% (Jordà et al., 2017). All of these countries have had a housing return that trails global equities. It is only through exposure to the aggregate global housing market that an investor would have captured the equity-beating historical returns to housing. Eicholtz et al. (1999) demonstrate that there appear to be strong continental factors that drive real estate returns, making international diversification increasingly important. The challenges of international diversification in direct ownership of real estate is addressed in more detail in section 4 of this paper.

2.3 Data Integrity Concerns

The returns of private real estate investments are more challenging to evaluate than publicly traded securities. Private real estate indexes are based on either appraisals or transactions. Appraisal-based indexes may have appraisal lag, where appraised values do not immediately reflect changing market prices. This lag could result in understated volatility and an overstated diversification benefit. Transaction-based indexes, such as the CREA National Average Price mentioned in this paper, tend to be noisy due in part to the heterogeneity of real estate assets and the potential for misappraisals in a documented transaction. While these concerns are worth noting, there are statistical methods used to correct for potential data issues.

2.4 Returns Summary

Past housing returns have been excellent and would have improved the historical risk and return characteristics of diversified stock and bond portfolios. In thinking about housing returns it is important to remember that about half of the historical return has come from net rental income. In past analysis I have discussed the debate on renting versus buying a place to live, and a key component of that analysis was the relatively low capital returns of housing. This remains true for the capital portion of the housing return, which is the portion that a home owner is able to participate in. It is only when the combination of capital growth and net rental income is captured that housing has historically outperformed equities.

We will proceed with the assumption that, in aggregate, housing has been, and may be expected to be, one of the best performing asset classes globally, and at the asset class level it appears to be an excellent addition to a diversified portfolio.

3 Benefits of Investing in Housing

There are sensible reasons for investors to allocate capital to housing, including the expectation of net rental income, the expectation of capital gains, the diversification benefit, and its inflation hedging characteristics.

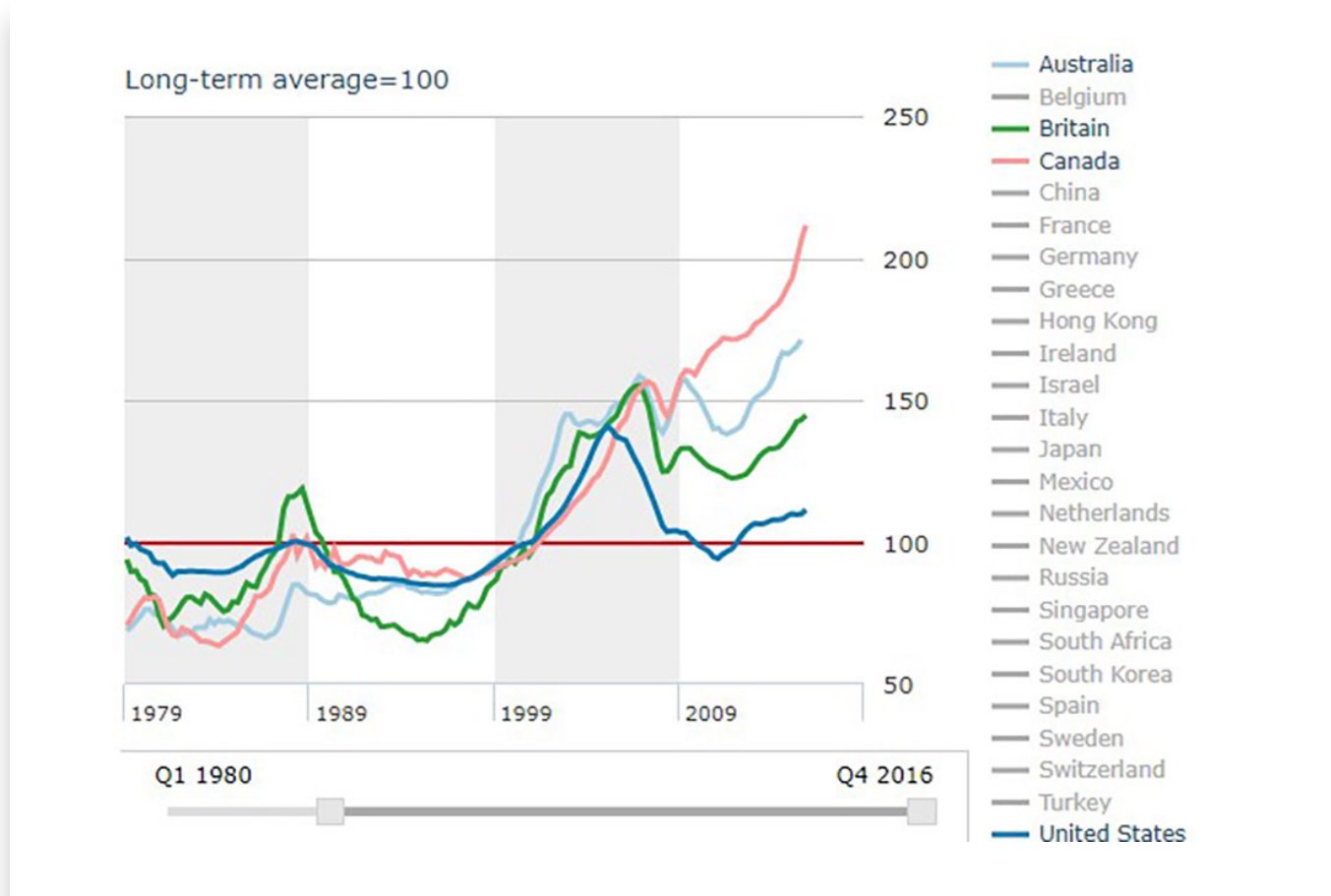
3.1 Income

Owning real estate as an investment generally results in an income component from leasing or renting the property. The investor expects that they will be able to find tenants willing to pay rent to at least offset their operating costs. Jordà et al., (2017) have estimated the average historical global net rental income to be 5.49%, assuming an unlevered (debt free) property. This is similar to Weeken (2004) who suggests around 5% net rental yield for UK residential properties between 1967 – 2003. One of the key benefits of the income return is that it has been much less volatile than the capital return, with a standard deviation of 2.02% for income compared to 10.42% for capital (Jordà et al., 2017).

3.2 Capital Gains

Growth in the value of a real estate asset is historically an equally important component of the housing return, but on its own, price appreciation has not been sufficient to produce performance comparable to equities. Recently, the capital return to housing in developed markets has been exceptionally high. This should be expected to result in lower net rental yields. Canadian national average price returns have averaged 7.13% per year for the 5 years ending December 2017, which is substantially higher than their average annual return since 1980 of 5.64% (CREA, 2017). The relationship between prices and rents is apparent in Figure 1 (see next page), with Canada notably leading the trend toward higher prices relative to rents. In other words, Canada's rising prices have affected rental yields.

Figure 1 - Housing prices against rents



Source: The Economist, <https://infographics.economist.com/2017/HPI/index.html>

3.3 Diversification

Housing returns have historically had a low correlation to equity returns, so their addition to a portfolio may be beneficial. This diversification benefit is visible in the long-term global data, and also in the available data set of Canadian real estate returns since 1980. While the diversification benefit is clear, realizing this benefit can be a challenge due to the amount of asset specific risk involved with most real estate investments. The diversification benefit of an asset class is best captured when a cross section of the asset class is owned globally, as is accomplished in the case of stocks and bonds with an index fund. Direct real estate ownership does not typically offer the opportunity for global diversification. The diversification benefit of real estate looks excellent on paper, but it may be a challenge to capture in practice.

3.4 Inflation Hedging

It makes sense that residential real estate would act as an inflation hedge in portfolios; both rents and property prices may be expected to rise during periods of inflation. The data on real estate as an inflation hedge is mixed. Liu et al. (1997) find that real estate provides a comparable inflation hedge to stocks in some countries, but a worse hedge in others. Stevenson and Murray (1999) find that Irish real estate has not been an inflation hedge. Goetzmann and Valaitis (2006) use statistical analysis to correct problems with real estate return indexes and find that, despite their short sample period, property is likely to hedge inflation well. Using REIT performance data Case and Wachter (2011) find that real estate performs as well as, or better than, other inflation sensitive assets. Properties with shorter lease durations, including self-storage, residential properties, and shopping centers tend to deliver the best inflation-protecting performance.

3.5 Tax Deductions

Similar to investing in equities, a loan used to invest in property with the expectation of generating income results in the tax deductibility of interest on the loan. Most real estate investors will use debt to purchase a property, so the deductibility of interest is beneficial. Investors are also able to claim capital cost allowance (CCA) on their building. The details of CCA are beyond the scope of this paper, but the general idea is that depreciation on the building can be claimed for tax purposes each year until the depreciated value of the asset reaches \$0. If the property is eventually disposed of for more than the undepreciated capital cost, some of the previously claimed CCA may be recaptured, or in other words, included in income.

3.6 Benefits Summary

As with any investment, housing needs to generate a high enough return to compensate for the associated risk. Historically housing has accomplished this through a healthy mix of income and capital gains, while also offering an apparent diversification benefit in a portfolio of stocks and bonds. Additionally, the housing asset class may offer a hedge against inflation. The tax benefits of a real estate investment do offer some interesting tax planning opportunities, but they alone are not a sufficient reason to invest in this asset class. In aggregate, housing does offer a very attractive set of benefits.

4 Unique Characteristics

There are undoubtedly benefits to investing in housing, but direct real estate investment has characteristics that must be considered. These unique characteristics are high unit values, transaction barriers, management intensiveness, illiquidity, the heterogeneity of assets, and a dependence on debt capital.

4.1 High Unit Values

Each unit of a real estate asset is indivisible and has a relatively high price. An investor in equities is not usually able to purchase an entire company, so they may purchase 100 shares of that company's stock. This ability to purchase shares does not exist with direct ownership of real estate. The high unit value makes diversification a challenge. Realizing asset class returns without a diversified portfolio of the asset class is unlikely due to asset specific risk.

4.2 Management Intensiveness

One of the greatest benefits of investing in stocks and bonds is that there is no requirement to participate in managing the company that you invest in. This makes investing in public capital markets accessible to anyone regardless of their level of knowledge or expertise in running a business. On the other hand, direct ownership of a real estate investment requires a substantial amount of management including maintaining the physical property, finding tenants, negotiating leases, collecting rents, and responding to urgent tenant issues. Of course, it is possible to hire a property management company to handle these issues, but that comes at a cost. The level of management required introduces a unique additional risk – management must execute their management duties. In order to execute property management duties successfully there are specific skills and resources required.

Management intensiveness should be especially salient to the individual investor. Managing a property can be time intensive, potentially impacting other areas of life. Focusing too much on a rental property could have downstream implications for one's career and family life – this may seem extreme, but it should be considered. A landlord will need sufficient spare time and energy net of their family and professional activities, knowledge of construction, knowledge of liability laws, a roster of competent and affordable suppliers to do repairs and construction work, knowledge of tax, accounting and administrative skills, and interpersonal skills for selecting, attracting and retaining quality tenants.

4.3 Illiquidity

The lack of liquidity in private real estate is the result of the remaining characteristics that are addressed in this section; in short, it is not always easy or inexpensive to sell a house. The lack of liquidity increases the risk of owning real estate, but Liu and Qian (2012) showed that this risk may be compensated by higher returns. Both buying and selling a directly-owned real estate asset is expensive and involves multiple parties. A typical transaction will involve, at minimum, real estate agents, tradespeople, and lawyers. Each of these adds a layer of cost. This is in stark contrast to transacting in equities, where costs are low and investors have access to the market directly without involving third parties.

4.4 Market Inefficiency

Public equity and fixed income capital markets are generally accepted as being mostly efficient, most of the time (Fama, 1970). They are at least efficient enough to make exploiting inefficiencies consistently extremely unlikely (Carhart, 1997). This characteristic of public capital markets is driven by liquidity, the low cost of information, low transaction costs, a high volume of transactions, and numerous market participants. The private real estate market shares few of these characteristics. Knowledge specific to each property and location may impact the price, and that information may not be readily available to both parties in a transaction. This may create opportunities for a skilled investor with low-cost access to quality information. The question that any investor has to ask is whether or not they are the skilled and well-informed party.

4.5 Heterogeneity of Assets

The units of common stock of a given company are identical. The same is not true for properties. In fact, no two properties are identical. Even those properties built with the same floor plan by the same builder in the same city with the same leases in place must be in slightly different locations. This adds to the challenge of price discovery in the real estate market. It also emphasizes the importance of diversification across multiple properties.

4.6 Dependence on Debt Capital

Most property purchases involve debt capital in the form of a mortgage. This is a by-product of the high unit value of real estate assets, and results in the real estate market being sensitive to the availability and cost of debt capital. Rising interest rates and tighter lending practices can reduce real estate prices. On the other hand, low interest rates and easy lending practices can increase real estate prices. Both of these situations result in price fluctuations that are independent of the demand for real estate.

4.7 Characteristics Summary

The unique characteristics of direct real estate ownership make it a challenging asset class to participate in. To truly capture the beneficial return and diversification characteristics discussed in section 1, it is important to be sufficiently diversified. Diversification is a challenge when transaction costs and unit values are high. Most investors are unlikely to directly own hundreds of properties in various countries. Without sufficient diversification there is substantial exposure to idiosyncratic risks. These risks stem from market inefficiency – if you end up on the wrong side of your only deal you may never make a positive return; the reliance on successful management – poor management may result in vacancies or damaged property; and the heterogeneity of assets – despite investing in a successful area, issues such as physical defects in the property, natural disasters, or a dispute with neighbours could result in poor returns on that specific asset. Of course, there are other risks that cannot be identified or considered ahead of time. In a portfolio of stocks and bonds these unknown risks would typically be mitigated with diversification, but this is a challenge in the case of direct ownership of real estate.

Many of these issues can be mitigated through the use of REITs. A REIT is a publicly traded diversified portfolio of real estate assets. While this seems like a great solution, it has been documented that REITs have a higher correlation with stocks and bonds than private real estate. Whether this is a result of how private real estate asset returns are calculated or a true difference in asset class performance is not conclusive. In any case, many investors seem to be far more enchanted by direct ownership of real estate assets than they are by REITs.

5 A Hypothetical Investment

With the preceding data and considerations in mind, let us think about a hypothetical investment in a residential property. The average 2017 price for a home in Ottawa was \$378,000 (CREA, 2017). Assuming a 20% down payment of \$75,600, a \$4,000 land transfer tax, and \$2,000 in closing costs, an investor could purchase a property of this value for a total initial investment of \$81,600. A 3.09% 25-year mortgage payment in this situation would cost \$1,448 per month. We can estimate property taxes at 1% of the property value per year, and maintenance costs at 1% of the starting value, increasing with inflation each year. This amounts to a total monthly operating cost of \$2,078 to start. We will assume that the mortgage interest rate remains at 3.09% for the duration of the projection.

The average 2017 rent in Ottawa for a three or more-bedroom dwelling was \$1,568 (CMHC, 2017) – we will give our landlord the benefit of the doubt and assume that they can rent this unit out for \$1,650 per month, resulting in a monthly loss of around \$430. This loss will decline over time assuming that the mortgage payment stays the same while rent increases with 2% inflation annually. We will assume that the real estate asset grows at a rate of 3% per year. A 3% growth rate with 2% inflation puts our expected real capital return at 1%, which is between 0.3% and 0.7% lower than the documented historical averages for housing price growth.

Based on these assumptions, this investment will have averaged an annual return of 7.29% per year after 25 years before taxes are considered. For context, a globally diversified portfolio of equity index funds returned an identical average pre-tax return of 7.29% per year for the 20-year period ending March 31, 2018 (Dimensional Fund Advisors, 2018), and it might be reasonable to expect an average annual equity return of 6.04% going forward (PWL Capital, 2017).

We can test this model with various assumptions. All else equal:

- If there is one month of vacancy every two years, as opposed to full occupancy for 25 years, the average annual return drops to 6.40% per year.
- If the unit can only be rented out for \$1,568 per month, as opposed to \$1,650, the average annual return drops to 6.03%.
- If the unit can be rented out for \$2,000 per month, as opposed to \$1,650, the average annual return increases to 10.25%.
- If real estate prices grow at an average of 4% per year, as opposed to 3%, the average annual return increases to 7.75%.
- If interest rates are 5%, as opposed to 3.09%, the average annual return declines to 5.02%.

While the expected returns of this hypothetical investment are competitive with an aggressive portfolio of equities, the expected return must be considered in context of the known risks and unique characteristics of direct real estate ownership. If an investor owns many properties on multiple continents, it may be reasonable to achieve the expected return of this asset class. If only one property on one continent can be owned, the idiosyncratic risk of that continent, country, city, and asset can easily swamp the expected return. This is not to say that the risk of a concentrated investment cannot work out well – ask anyone who invested in a detached home in Toronto ten years ago. However, that experience is not easy to replicate without a crystal ball.

6 Conclusion

There is long-term data supporting housing as an extremely attractive asset class in a diversified portfolio. To effectively capture the benefits of the asset class, it is necessary to diversify internationally, ideally owning property in one country on each continent. International diversification is a challenge with direct real estate ownership due to the high unit values, expensive transactions, and management intensiveness – this is especially true for an individual with limited capital and expertise in foreign markets. An under-diversified portfolio of properties leaves the investor heavily exposed to the risks of illiquidity, misappraisals, and interest rates, among many other hard-to-identify risks specific to a given property.

We have seen, based on a reasonable set of assumptions, that a leveraged investment in Canadian housing might be expected to deliver performance on par with, or slightly better than, a portfolio of equities. With any single asset, whether it is an individual stock or a rental property, it is very challenging to assign an expected return assumption. An individual asset is likely to overshoot or undershoot any notion of a reasonable expected return due to asset specific risks. This risk may work out in your favour, as any property owner in Toronto or Vancouver will tell you. However, making an investment decision based on the expectation of a similar outcome may not be sensible.

This paper has looked at the asset class returns of housing through a single-factor lens. That is, we have been comparing the aggregate returns of equities and housing. In a 2018 paper titled Real Estate Betas and the Implications for Asset Allocation, Peter Mladina looked at the returns of real estate assets through a multi-factor lens; he broke down real estate returns in terms of known factors that explain equity and fixed income returns. His factor model included the Fama-French market beta, size, and value equity factors, plus the term and default fixed income factors. This modified factor model was shown to adequately explain real estate returns. In other words, adding real estate to a portfolio does not provide factor exposure that could not be attained using traditional equities and fixed income.

Housing appears to be, on paper, an attractive asset class. To realize the on-paper expected results of this asset class an investor should aspire to build a globally diversified portfolio of properties. If this is not attainable, the asset-specific risks of an individual property, or group of properties in a single country, are likely to result in actual performance substantially exceeding or trailing the expected performance of the asset class. From a multi-factor perspective, it may be far more cost effective to gain the factor exposure that real estate offers through a factor-loaded portfolio of stocks and bonds. This factor exposure can be accomplished cost effectively using low-cost index funds.

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