Tax Induced Divestments - Evidence from a Kink in Capital Gains Tax Rates

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ABSTRACT

This paper presents evidence on differential tax related incentives for divestments in residential real estate markets. Assets that are held for at least a year are taxed at a lower capital gains tax rate. The paper exploits a discontinuity in capital gains tax rates around the one year holding period mark for residential property. First, the empirical results show that individual investors, relative to homeowners that hold property for consumption purposes, disproportionately time sales to avail such benefits. Secondly, experienced investors are more likely to capitalize on the discontinuous tax benefit. Lastly, the paper highlights a trade-off between timing sales and capitalizing on the differential saving between short and long term capital gains tax rates and depicts that returns are lower for divestments that occur immediately after the one year mark.

Keywords: capital gains tax, discontinuity, holding period, investor sophistication, trade-off.

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I. Introduction

The effect of taxation on investment decisions is a focus of many studies ranging from corporate finance to asset pricing. For instance, the seminal work of Hall and Jorgenson (1967) studies tax policy and investment behavior. The authors infer that tax policy is effective in changing the level and timing of investment expenditure. We examine the effect of taxation in real estate markets through the lens of investors that have a consumption or investment related objective. In residential markets, investors may hold property for consumption or investment purposes. Therein, the role of divestment timing flexibility and being financially liable for short term or long term capital gains tax rates comes into play. Typically, the long term capital gains tax rate is lower; however, the asset has to be held for at least a year. We study the divestment timing of properties and link it to an optimization decision relating to the burden imposed by long or short term capital gains tax rates. Overall, we present a novel view on the effect of capital gains tax related trade-offs in the residential real estate market.

Our identification rests on discontinuity in the capital gains tax rates around the one year holding period mark. If an investment property is sold after one year, any resultant capital gains is taxed at the long term capital gains tax rate, that is typically lower than the tax rate (individual's personal income tax rate) if sold less than one year from purchase. For empirical purposes, this discontinuous decrease in tax rates on day 366 of the holding period represents a kink. Relative to homeowners that purchase property for a consumption purpose, investors have a pure investment objective to hold property for rental income and/or return appreciation. Such investors have more flexibility to time their transactions so as to avail of a discontinuous reduction in tax rates over holding periods.

Investors may learn of tax rules and related divestment timing gains over time. Hence, we should expect experienced investors, that repeatedly operate in the market, to time divestments to minimize tax obligations much more. Investors that divest after the one year holding period mark

may have to sub-optimally delay divestment. This can be characterized as a trade-off between gains from a lower tax rate and lower realized returns due to a sub-optimal divestment time point. Thus, we should expect investments that are sold immediately after the one year holding period mark to have lower returns.

We obtain residential transaction data across several U.S. states to highlight the incentives and trade-offs arising from tax induced divestments. We classify the owners as either investors that hold property for investment purposes or as non-investors for consumption purposes. We track the purchase and sale of each property and measure the holding period. In general, investors have a higher likelihood of selling immediately after holding the property for one year. In contrast, holdings of non-investors do not follow this pattern. This finding is persistent across a range of data classifications and robust to alternate explanations. For instance, it holds for divestment across each calendar quarter, across states, across time periods around the peak of the financial crisis. The results persist for land transactions, thereby implying that a lack of rental income and property improvement data is not skewing the findings. In addition, the results are robust to the inclusion of property level characteristics that account for heterogeneity. Institutional investors are not subject to differential holding period related tax rates upon divestment. We find that, relative to institutional investors, individual investors are more likely to divest immediately after the one year mark.

Additionally, investors that have experience, as measured by the number of past purchases, are more likely to sell immediately after holding the property for one year. Finally, we present evidence that investor returns are lower for divestments in the period immediately after the one year mark, thereby noting a trade-off between optimally timing divestments and capitalizing on the differential saving between short and long term capital gains tax rates. We estimate that returns are 3.5% lower when the divestment occurs immediately after the one year holding period mark.

This paper contributes to several streams of literature. First, this paper advances the literature that studies differential incentives that arise due to tax related reasons. Past work on has focused

on the equity market. In contrast, this paper exploits a unique setup of individual level trades and documents a trade-off between gains from optimally timing divestments and timing trades to capitalize on tax savings. Second, this paper contributes to the literature that studies investment and consumption objectives of residential properties. This paper highlights differential tax related divestment timing flexibility for sellers that have an investment objective. Lastly, this paper also informs the literature on financial learning. We show that experience plays a role in optimal trading strategies.

There is limited evidence on the effect of capital gains taxes on investments in residential real estate markets. We present evidence on discontinuous tax related rules skewing investment decisions as investors time transactions and disproportionately sell property after the one year mark when capital gains tax rates are lower. Thus, we highlight bunching of transactions that depicts investors adapting to tax policy and capitalizing by timing divestments. Overall, we contribute to the broader literature on tax policy on investment behavior. While past work in finance has noted the incentive to time stock sales around the one year mark, we add to the literature by highlighting the role of investment or consumption objectives, and investor sophistication. In addition, our micro level data on individuals' portfolios of properties enables to characterize and quantify a trade-off between timing to reduce tax obligations and forgoing an optimal divestment time point that may realize a greater return.

The paper proceeds as follows. The next section presents an institutional background of taxation as it relates to investments and an overview of differential capital gains tax rates. Section III develops testable hypotheses. Section IV presents an overview of the data, followed by the empirical results in Section V. Finally, we discuss the implications of our findings and conclude in Section VI.

II. Past Work and Institutional Background

Studies have examined the effect of tax policies on various market participants. For instance past work examines the effect of taxation on firm behavior. Gentry and Hubbard (2000) examine tax policy and entrepreneurship entry. The authors infer that entrepreneurial entry increases when tax rates are less progressive, thereby highlighting the effect of taxation on entrepreneurial gains. Djankov et al. (2010) examine the effect of corporate taxes on investment and entrepreneurship using cross-country data on effective corporate income tax rates. The authors present evidence that suggest that such corporate taxes have a large adverse effect on investment and entrepreneurship. Keuschnigg and Nielsen (2004) study the relation between capital gains tax and start-ups/venture capitalists through a theoretical setting. The authors argue that an introduction of such taxes has an adverse effect on effort.

There has also been some work that specifically studies investor trading incentives based on differential capital gains tax rates. Shackelford and Verrecchia (2002) present a model that studies the effect of differential tax rates for capital gains based on the time of sale. The model characterizes investor equity trades around firm disclosures and predicts that a difference in short verses long term capital gains tax rates will reduce trading volume. In an empirical context, Hurtt and Seida (2004) uses intra-day stock transaction data and notes that trades are lower around earnings information releases when the tax rate incentive to hold for a long term is higher. In a similar vein, Chyz et al. (2012) study institutional investors' trades around a capital gains tax rate cut in the Taxpayer Relief Act of 1997. The findings suggest that investors are more willing to sell stocks that appreciated in value after the tax rate decrease. More recently, Dai et al. (2015) theorize that the difference between short and long term capital gains tax rates should explain why investors defer large capital gains and losses. The authors argue this observation arises due to an increase in short term capital gains tax rates resulting in a decrease in effective tax rates.

Next, studies have also examined trading incentives in the real estate market. First, a stream

of literature studies trading incentives that arises from tax related reasons. For instance, Kopczuk and Munroe (2015) study housing transactions using data from New York and New Jersey where taxes due on sale discontinuously increase when the price crosses a certain threshold. The authors find that transactions bunch just below the threshold indicating market participants reaction to higher taxes that would be due if the transacted price is above the threshold. Best and Kleven (2017) examine housing market responses to transaction taxes in the U.K. and find that a temporary elimination of transaction tax resulted in an increase in housing market activity by 20% relating to either a decision on if and when to buy a house. Additionally, the subsequent re-introduction of the transaction tax had the opposite effect. Hilber and Lyytikäinen (2017) study the effect of a stamp duty tax in the U.K. by examining discontinuity in tax rates around an assessed value threshold. The authors find that the stamp duty tax has a negative effect on housing related and short distance moves. From a transaction timing perspective, Bradley (2018) documents buyers in Michigan timing trades to avail of tax related savings around the January 1 cut-off when a differential tax obligation may be borne.

Secondly, past work studying trading incentives in the real estate market examines the factors underlying holding period length. For instance, Alberts and Castanias (1982) theorize that a reduction in tax depreciation rates shorten the length of holding periods for real property. Gau and Wang (1994) present a model that examines the determinants of holding period length for real estate investments. The authors argue that investor preferences and market interest rates have a larger bearing on the length of the holding period rather than tax considerations. More recently, Cheng et al. (2010) present a theory that models the optimal holding period length for real estate investments. The model predicts that higher illiquidity and transaction costs increase the length of the holding period.

Overall, past work on the effect of varying capital gains tax rates has focused on the equity market. However, there is no work so far on divestment incentives around the difference between short and long term capital gains tax rates in the real estate market.

III. Hypothesis Development

The capital gains tax payable upon sale is different for homeowners that have a consumption objective and investors that hold property primarily for an investment purposes. Homeowners can qualify for an exemption that excludes gains up to $250,000 for a single return and $500,000 for a joint return. However, the ownership and use test must be satisfied, i.e. owned and used the property as a primary residence for a period aggregating at least two years out of the five years prior to its date of sale.[1]

In addition, the Internal revenue Service (IRS) classifies capital gains and losses as short term or long term.[2] If an asset is held for more than a year, the capital gain or loss is classified as long term. In contrast, if the asset is held for a year or less, the capital gain or loss is classified as short term. For the long term classification, in the event of a net capital gain, a lower capital gains tax rate may apply to the gain relative to a larger individual filers' personal tax rate. The long term capital gains tax rate is typically lower than an individual's personal tax rate that is applicable if the asset is held for a shorter period, i.e. for a year or less. Therein lies a discontinuous decrease in the capital gains tax payable around the one year mark. Investors that hold properties for investment purposes have more flexibility to time the sale and avail a reduction in capital gains tax upon crossing the one year mark threshold.

The primary friction in the differential capital gains tax induced trades relates to rates discontinuously decreasing if the investment is held for more than a year. Hence, a seller that meets the criteria to avail the long term capital gains rate has a lower tax rate on day 366 versus day 365. For discussion, Table I depicts an individual's tax rates and capital gains tax rates for the year 2020. Consider an individual that has an income of $120,000 and falls in the $85,526 - $163,300 bracket. Panel A notes that a single filing tax rate of 24% is applicable on any short term capital gains that are realized upon the sale of a property less than a year from initial purchase. However,

[1] https://www.irs.gov/taxtopics/tc701
[2] https://www.irs.gov/taxtopics/tc409

if the sale occurs more than a year after initial purchase, then Panel B indicates that a lower tax rate of 15% is applicable. Thus, it depicts a large difference in the tax payable around the one-year holding period mark.

Such timing ability to capitalize on lower tax rates are not available to all market participants due to a difference in investment and consumption objectives. Homebuyers that hold property for consumption purposes have a lower ability to perfectly time divestments. In contrast, investors that hold property primarily for investment purposes have greater divestment flexibility. Hence, we characterize the first hypothesis as:

Hypothesis 1: Investors are more likely to divest in the period immediately after the one year mark.

In addition, investor sophistication may play a role in timing divestment to capitalize on lower capital gains tax rates. There may be a learning curve by investors that frequently transact in the housing market. We can expect experienced investors to have a higher likelihood of comprehending such tax structures and hence availing of related benefits. Thus, we characterize our second hypothesis as:

Hypothesis 2: Experienced investors are more likely to divest in the period immediately after the one year mark.

Investors trade-off forgoing the optimal divestment time point that maximizes returns by waiting to sell after the one year mark and realizing lower tax rates. While divesting after the one year mark results in a lower capital gains tax rate it may potentially involve a lower sale price. Thus, we characterize such a trade-off in our third hypothesis as:

Hypothesis 3: Returns for sales occurring in the period immediately after the one year mark are lower as sellers trade-off with the gains from lower tax rates.

IV. Data

We obtain property transaction data from Zillow that collects data from county tax assessor and recorder offices. The data comprise details such as the date of purchase, property address, name of the buyer and buyer address. Our sample time-frame is from 2000 to 2015. We connect purchase and sale transactions and are able to identify the holding period of each purchase if it leads to a divestment within the study period. In addition, we focus on investments by individuals rather than institutional buyers. We focus on thirteen states: Arizona, California, Florida, Georgia, Illinois, Michigan, Minnesota, North Carolina, New Jersey, Nevada, New York, Ohio and Pennsylvania. These states have substantial data to track investor portfolios. Many states have non-disclosure price laws, whereas others have incomplete property or transaction information that will result in an incomplete characterization of investor portfolios.

A. Classifying Investors

Buyers that have an investment objective have different incentives and constraints during the purchase and sale of property. Non-investors hold property for consumption related reasons and may be unable to time the sale relative to investors that hold primarily for an investment purpose.

We use buyers' names and mailing address to identify a set of investors. Our criteria for being identified as an investor comprise of holding multiple properties at the same time and holding at least a pair of such properties for at least twelve months so as to not assign an investor status to individuals who merely move from one property to another for consumption purposes. Thus, we do not count short term flippers as an investor. In addition, name and/or address variations will result in our method under counting the number of investors and properties in the portfolio. Overall, our method to identify investors will likely miss some transactions or portfolios.

B. Summary Statistics

Table II presents summary statistics on the data. Note that our sample comprises only of properties that were purchased and subsequently sold to enable us to study the effect of taxation on the length of the holding period. Our sample includes 5,328,576 such investments that were bought and subsequently sold. The mean purchase price is $236,000 and the mean sale price is $256,000. Properties are held in portfolio for an average of 4.94 years. In addition, there is considerable variation in the holding period as characterized by the 1st and 99th percentiles (0.22 and 13.88 years respectively). Following our method to identify investors noted earlier, 4.81% of the transactions involve investors. We also track purchases by each investor and report the sequence number of the investment. This enables us to track past investment experience in the residential market. The mean number across such investor purchases is 1.59.

Next, we present suggestive evidence of a holding period pattern for investors. Table III presents the frequency distribution of the holding period (in quarters). The table depicts the fifteen most frequent holding period lengths for investors and non-investors as per the methodology noted earlier. Panel A presents the frequency distribution of the holding period for non-investors. Note that the most frequent holding periods are 9, 10 and 11 quarters from the purchase date. Panel B presents the frequency distribution of the holding period for investors. Here, we see that the most frequent holding periods are 5, 6 and 7 quarters from the purchase date. It appears that investors divest more often after the one year mark that discontinuously changes the capital gains tax obligation to a lower long term rate.

Figure 1 depicts the kernel density of the holding period (in quarters) for investors and non-investors. It indicates a spike in the holding period in the fifth quarter for investors. In addition, it indicates that that non-investors predominantly hold property for nine quarters.[3] This observation is consistent with timing sales for savings from tax rules.

[3]The holding period for non-investors appears to be influenced by seasonal, yearly trading patterns such as moves during the summer.

V. Empirical Results

So far, the discussion has focused on simple summary statistics that characterize varying holding patterns for investors and non-investors. We now proceed with a formal analysis that links the holding period length with tax related incentives. This section presents various specifications that highlight the robustness of the main result on tax induced divestments for investors. Specifically, the results document that the inference are robust to

A. Baseline Results

We model the likelihood that the divestment occurs within a specified period after the one year mark from an initial purchase. We use a linear probability model characterized by the following specification:

$$After_{it\_t} = \alpha + \beta Investor_i + \epsilon_{it\_t} \tag{1}$$

The dependent variable, $After_{it\_t}$, indicates if the sale occurs within 90-days, 60-days or 30-days after the one year holding period time point. That is, the property that was initially bought at $t\_$, was sold at time t and the holding period represents the difference between the two dates. Correspondingly, the regressions include a sample of investments where the sale occurs before and after the specified number of days of the one year holding period time point (90, 60 or 30 days). Considering a narrow window around the one year holding period mark within which divestment occurs helps to account for unobserved heterogeneity. $Investor_i$ is a variable that indicates if the sale relates to a investor.

Table IV presents the estimated regression results across several model specifications that incrementally add controls (sale-quarter and city fixed effects). Models 1 to 3 present the estimated coefficients for the regressions based on the 90-day window. Similarly, Models 4 to 6 and models 7 to 9 present the estimated coefficients for the regressions based on the 60-day and 30-day window respectively. Note that the coefficient of the *Investor* indicator variable is positive and statistically

significant at the 1% level in all the model specifications. This implies that investors are more likely to divest in the period immediately after the one year holding period mark. This lends credence to *Hypothesis 1* that characterizes investors as having a higher likelihood to divest in the period immediately after the one year holding period mark to capitalize on lower tax rates. Interpreting the most parsimonious specification in Model 9, we note that an investor is 8.57% more likely to divest immediately after the one year holding period mark.

B. Robustness Checks

Next, we document that the discontinuous spike in trading frequency persists across an array of ways at looking at the data. We explore various ways to split up the data and depict that the holding period pattern persists.

B.1. Heterogeneity across Geographic Areas and Time Periods

Table V presents the estimated regression results for divestments in each calendar quarter separately. Models 1 to 4 depict the results for each calendar quarter and we see that the coefficient of interest is similar in magnitude and statistically significant across all the specifications. The sample comprises of a set of properties across heterogenous geographic areas. Table VI presents the estimated regression results for properties across each state separately. Consistently throughout, we note that coefficient of *Investor* is positive and statistically significant indicating that investors are more likely to divest immediately after the one year holding period mark.

The sample study period includes the financial crisis. To alleviate concerns that crises related reasons may be driving the results, Table VII presents the regression results across subsets of the data for which the sale either occurred before or after 2008. The coefficient of *Investor* is positive and statistically significant in Columns (1) and (2) indicating that investors are more likely to divest immediately after the one year holding period mark, Thus, the holding period pattern observed is

robust to sub-periods of the study's time-frame.

B.2. Broader Window of Trades

All the analyses discussed earlier have considered a narrow window around the one year holding period time point. Table VIII presents the estimated regression results based on a broader sample that includes investments regardless of the divestment date. That is, the holding period length is not restricted to 90, 60 or 30 days before or after 365 days. We note that the inference remains unchanged. Overall, we note that the holding period pattern for investors follows timing divestment to capitalize on a capital gains tax rate that discontinuously decreases when the holding period crosses the 365-day mark.

B.3. Controlling for Heterogeneity in Properties

Our data lacks information on rental income and property expenditure/improvements. Not controlling for heterogeneity in properties may skew findings. To potentially account for such biases we consider subsets of the data that were based on property that are classified either as land or non-land investments. Properties that are designated as land are less subject to biases arising from lack of rental income or improvement data.

Table IX presents the estimated regression coefficients for subsets of the investments that were classified as land or non-land transactions. The coefficient of interest is positive, similar in magnitude and statistically significant in both models implying that investors are more likely to divest immediately after the one year holding period mark. Furthermore, we also account for heterogeneity in properties. Table X presents the estimated results based on a regression model that includes property characteristics as controls. The coefficient of interest remains statistically significant and similar in magnitude.

B.4. Contrasting Individual and Institutional Trades

So far, we have contrasted the trades of individuals that differ with regard to an "investor" classification. Next, we contrast the trades of such individual investors with institutional investors. Institutional investors are not subject to differential short and long term capital gains tax rates. Thus, we should expect retail investors to be more likely to trade immediately after the one year mark.

Table XI presents the regression results based on a sample of investments by retail and institutional investors. We see that retail investors are 21.14% more likely to divest immediately after the one year mark.

VI. Potential Underlying Mechanisms

So far we have shown evidence that investors are more likely to divest in the period immediately after the one year mark. In this section ,we characterize the underlying reasons why such trades may be timed as based on investor sophistication and trading off a reduction in capital gains taxes with forgoing the optimal divestment time point.

A. Investor Experience and Trades

Next, we model the likelihood of an investor's divestment in the period immediately after the one year mark based on the purchase sequence number of the property in the investor's portfolio. Specifically, we use the following specification:

$$After_{it\_t} = \alpha + \beta\ Investment\ Sequence_i + \epsilon_{it\_t} \tag{2}$$

Here, $Investment\ Sequence_i$ depicts the purchase sequence number of the property in investor i's portfolio and proxies for past experience.

Table XII presents the estimated regression results across several model specifications for the 90-, 60- and 30-day windows respectively. Note that the sample now comprises of investment transactions involving only the set of investors. The coefficient of *Investment Sequence* is positive and statistically significant at the 1% level in all the model specifications. This implies that investors that have greater experience are more likely to divest in the period immediately after the one year mark. This provides support for *Hypothesis 2* that characterizes experienced investors as having a higher likelihood to time divestments so as to capitalize on lower tax rates. Interpreting the coefficient in Model 9, we note that the probability of divesting immediately after the one year mark increases by 0.09% for each additional property the investor has prior investment experience.

B. Economic Significance - Returns and Divestment Timing

Next, we ascertain the economic significance of trading to capitalize on the difference between short and long term capital gains tax rates. We relate the gains to an investment, as measured by the annualized return, to divestment in the period immediately after the one year mark. We employ the following specification:

$$return_{it\_t} = \alpha + \beta \; After_{it\_t} + \epsilon_{it\_t} \tag{3}$$

Here, $return_{it\_t}$ is the annualized return of the property that was purchased at time $t\_$ and sold at time t.[4] We focus on a narrow time window of 30 days before or after the one year holding period mark to contrast relatively similar investments.

Table XIII presents the estimated regression results. The coefficient of the indicator variable that depicts if the sale occurs within a 30-day period after the one year mark from initial purchase is negative and statistically significant in all the model specifications. This implies that sale in the *after* period are associated with lower returns and provides support for *Hypothesis 3*, that

[4]This is the annualized price appreciation since we do not have data on expenses for improvements or rents earned.

characterizes returns for sales occurring in the period immediately after the one year mark as being lower due to a trade-off between timing sales and capitalizing on the differential saving between short and long term capital gains tax rates. The coefficient in Model 3 indicates that returns of investments are 3.4% lower when the divestment occurs immediately after the one year holding period mark. Thus, we highlight a trade-off between perfectly timing the divestment and waiting to capitalize on a lower long capital gains tax rate.

VII. Discussion & Concluding Remarks

We document that investors' real estate transactions bunch in the period after the one year holding period mark. The differential capital gains tax rates resulting from holding an investment for more than one year induces market participants to time transactions to avail lower tax rates. Investors that hold property for investment purposes and have greater flexibility to time sales relative to non-investors that have a consumption objective. We show that investors disproportionately divest property in the period immediately after the one year mark. Thus, we highlight the effect of tax policy on investor behavior in the residential market.

Investors may learn about such tax benefits over time. We show that experienced investors are more likely to divest property in the period immediately after the one year mark. Thus, we characterize the role of experience in investment decision making. Lastly, we highlight a trade-off between between timing divestments and capitalizing on the differential between short and long term capital gains tax rates. Investors trade-off the gains to waiting for a lower tax rate and the decrease in returns potentially resulting from a lower sale price arising due to deviating from the optimal divestment time point.

Overall, this paper advances the literature that studies differential incentives that arise due to tax related reasons. In addition, this paper highlights differential tax related divestment timing flexibility for sellers that have differing investment/consumption objectives. Lastly, this paper

informs the literature on financial learning and documents that experience plays a role in optimal trading strategies.

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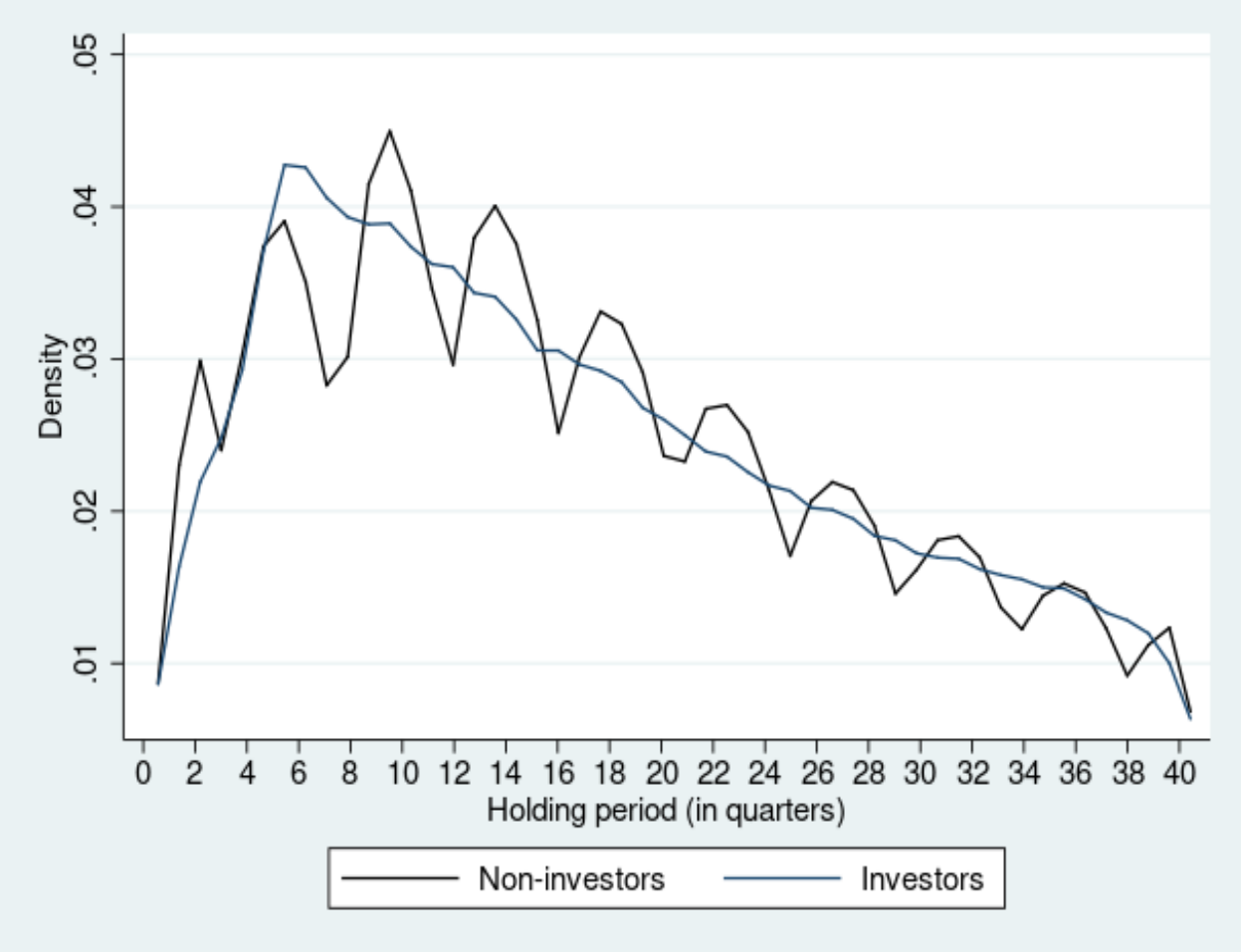

Figure 1. *Kernel density of the holding period length*

Table I - Tax Rates

	Single	Married Filing Jointly	Married Filing Separately	Head of Household
Panel A				
10%	$0 - $9,875	$0 - $19,750	$0 - $9,875	$0 - $14,100
12%	$9,876 - $40,125	$19,751 - $80,250	$9,876 - $40,125	$14,101 - $53,700
22%	$40,126 - $85,525	$80,251 - $171,050	$40,126 - $85,525	$53,701 - $85,500
24%	$85,526 - $163,300	$171,051 - $326,600	$85,526 - $163,300	$85,501 - $163,300
32%	$163,301 - $207,350	$326,601 - $414,700	$163,301 - $207,350	$163,301 - $207,350
35%	$207,351 - $518,400	$414,701 - $622,050	$207,351 - $518,400	$207,351 - $518,400
37%	$518,401+	$622,051+	$518,401+	$518,401+
Panel B				
0%	$0 - $40,000	$0 - $80,000	$0 - $40,000	$0 - $53,600
15%	$40,000 - $441,450	$80,000 - $496,600	$40,000 - $248,300	$53,600 - $469,050
20%	$441,450+ $496,600+	$248,300+	$469,050+	

This table notes the tax rates across income brackets. Panel A notes the individual filing rates, i.e. short term capital gains tax rate. Panel B notes the long term capital gains tax rates.

Table II - Summary Statistics

	N	Mean	P1	P50	P99	SD
Purchase Price	5,328,576	236,000	9,000	172,000	1,130,000	1,410,000
Sale Price	5,328,576	256,000	1,000	175,000	1,400,000	1,210,000
Holding Period (days)	5,328,576	1,759	80	1,500	4,943	1,208
Return	5,328,576	0.1640	-0.7578	0.0187	4.1595	0.7963
Investor	5,328,576	0.0481	0.0000	0.0000	1.0000	0.2140
Investment Sequence	256,481	1.5908	1.0000	1.0000	7.0000	1.5063

This table presents summary statistics on the data. Holding period length is expressed in days from purchase to subsequent sale. Investor is a binary variable that indicates if the investment relates to a investor. Returns are annualized. Investment Sequence is the sequence number of the investment property held by an investor based on the date of acquisition.

Table III - Distribution of Holding Period

Holding period (in quarters)	Frequency	Percent
Panel A: Non-Investors		
9	190,279	3.75
10	174,890	3.45
12	173,375	3.42
13	172,226	3.40
11	171,300	3.38
5	162,371	3.20
14	157,918	3.11
8	157,910	3.11
6	154,851	3.05
7	154,265	3.04
15	150,148	2.96
16	149,534	2.95
4	146,185	2.88
17	146,135	2.88
3	142,731	2.81
Panel B: Investors		
5	11,035	4.30
6	10,208	3.98
7	9,337	3.64
9	9,240	3.60
8	9,169	3.57
10	8,688	3.39
12	8,565	3.34
11	8,453	3.30
13	8,205	3.20
14	7,599	2.96
15	7,207	2.81
16	7,162	2.79
17	7,073	2.76
18	6,672	2.60
19	6,329	2.47

This table presents the count and percent (based on the entire data) of the most frequent holding period (in quarters) for investments that involved non-investors in Panel A and investors in Panel B.

Table IV - Regression results relating divestment after the one year mark and investor classification.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	After 90	After 90	After 90	After 60	After 60	After 60	After 30	After 30	After 30
Investor	0.1319***	0.1296***	0.1342***	0.1241***	0.1223***	0.1242***	0.0916***	0.0898***	0.0857***
	(0.0038)	(0.0038)	(0.0039)	(0.0046)	(0.0046)	(0.0048)	(0.0063)	(0.0063)	(0.0066)
Intercept	0.5229***	-0.0027***	-0.0050	0.5219***	-0.0024***	-0.0042	0.5248***	-0.0010	-0.0215
	(0.0009)	(0.0006)	(0.0031)	(0.0011)	(0.0008)	(0.0050)	(0.0015)	(0.0010)	(0.0134)
Sale Year-Qtr f.e.	No	Yes	Yes	No	Yes	Yes	No	Yes	Yes
City f.e.	No	No	Yes	No	No	Yes	No	No	Yes
R-Square	0.0034	0.0120	0.0399	0.0031	0.0086	0.0460	0.0018	0.0053	0.0673
N	322,079	322,079	322,079	216,478	216,478	216,478	111,276	111,276	111,276

This table presents the regression results that relates divestment in the period after the one year holding period mark to seller type. The dependent variable indicates if the investment sale occurs within 90-days (Models 1 to 3), 60-days (Models 4 to 6) or 30-days (Models 7 to 9) after the one year holding period time point. Correspondingly, the regressions include a sample of investments where the sale occurs before and after the specified number of days of the one year holding period time point (90, 60 or 30 days). Investor is a variable that indicates if the investment relates to a investor. Standard errors are indicated in parentheses and are corrected for heteroscedasticity. ***, ** and * indicate significance at the 1, 5 and 10 % level respectively.

Table V - Regression results relating divestment after the one year mark and investor classification - Subsets across Calendar Quarters.

	(Qtr 1) After 90	(Qtr 2) After 90	(Qtr 3) After 90	(Qtr 4) After 90
Investor	0.1474***	0.1415***	0.1163***	0.1279***
	(0.0087)	(0.0074)	(0.0078)	(0.0087)
Intercept	0.3232***	0.5249***	0.5392***	-0.0140***
	(0.0081)	(0.0064)	(0.0066)	(0.0053)
Sale Year-Qtr f.e.	Yes	Yes	Yes	Yes
City f.e.	Yes	Yes	Yes	Yes
R-Square	0.0949	0.0754	0.0788	0.1098
N	71,065	94,365	87,306	69,343

This table presents the regression results that relates divestment in the period after the one year holding period mark to seller type. The dependent variable indicates if the investment sale occurs within 90-days after the one year holding period time point. The regressions include a sample of investments where the sale occurs before and after 90 days of the one year holding period time point. Investor is a variable that indicates if the investment relates to a investor. Regression estimates for the sample of investments that have a divestment date across each quarter are presented separately. Standard errors are indicated in parentheses and are corrected for heteroscedasticity. ***, ** and * indicate significance at the 1, 5 and 10 % level respectively.

Table VI - Regression results relating divestment after the one year mark and investor classification - Subsets across States.

	(1 - AZ) After 90	(2 - CA) After 90	(3 - FL) After 90	(4 - GA) After 90	(5 - IL) After 90	(6 - MI) After 90	(7 - MN) After 90	(8 - NC) After 90	(9 - NJ) After 90	(10 - NV) After 90	(11 - NY) After 90	(12 - OH) After 90	(13 - PA) After 90
Investor	0.1607***	0.1741***	0.1363***	0.1441***	0.1089***	0.1697***	0.1395***	0.1077***	0.0987***	0.1361***	0.1485***	0.1086***	0.0779***
	(0.0169)	(0.0107)	(0.0062)	(0.0258)	(0.0142)	(0.0194)	(0.0281)	(0.0168)	(0.0313)	(0.0264)	(0.0177)	(0.0195)	(0.0130)
Intercept	-0.0005	-0.0044	-0.0120**	0.0883	-0.0050	0.0067	0.0017	-0.0154*	-0.0105	-0.0037	0.0002	0.0119	-0.0274
	(0.0083)	(0.0047)	(0.0048)	(0.0801)	(0.0109)	(0.0243)	(0.0199)	(0.0091)	(0.0218)	(0.0085)	(0.0158)	(0.0124)	(0.0190)
Sale Year-Qtr f.e.	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
City f.e.	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
R-Square	0.0313	0.0376	0.0204	0.0933	0.0495	0.0554	0.0697	0.0456	0.0846	0.0309	0.0974	0.0701	0.0704
N	18,796	65,417	98,062	8,740	23,781	15,727	8,951	16,934	7,805	9,763	15,864	15,259	16,980

This table presents the regression results that relates divestment in the period after the one year holding period mark to seller type. The dependent variable indicates if the investment sale occurs within 90-days after the one year holding period time point. The regressions include a sample of investments where the sale occurs before and after 90 days of the one year holding period time point. Investor is a variable that indicates if the investment relates to a investor. Regressions estimates for the sample of investments across states are presented separately. Standard errors are indicated in parentheses and are corrected for heteroscedasticity. ***, ** and * indicate significance at the 1, 5 and 10 % level respectively.

Table VII - Regression results relating divestment after the one year mark and investor classification - Subsets across time periods.

	(2008 or earlier) After 90	(After 2008) After 90
Investor	0.1331***	0.1401***
	(0.0043)	(0.0095)
Intercept	-0.0057*	0.5353***
	(0.0033)	(0.0144)
Sale Year-Qtr f.e.	Yes	Yes
City f.e.	Yes	Yes
R-Square	0.0419	0.1300
N	267,483	54,596

This table presents the regression results that relates divestment in the period after the one year holding period mark to seller type. The dependent variable indicates if the investment sale occurs within 90-days after the one year holding period time point. The regressions include a sample of investments where the sale occurs before and after 90 days of the one year holding period time point. Investor is a variable that indicates if the investment relates to a investor. Regressions estimates for the sample of investments based on the sale occurring before or after 2008 are presented separately. Standard errors are indicated in parentheses and are corrected for heteroscedasticity. ***, ** and * indicate significance at the 1, 5 and 10 % level respectively.

Table VIII - Regression results relating divestment after the one year mark and investor classification - Across a broader time-frame of holding periods.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	After 90	After 90	After 90	After 60	After 60	After 60	After 30	After 30	After 30
Investor	0.0110***	0.0147***	0.0124***	0.0078***	0.0103***	0.0086***	0.0044***	0.0057***	0.0047***
	(0.0004)	(0.0004)	(0.0004)	(0.0003)	(0.0003)	(0.0003)	(0.0002)	(0.0002)	(0.0002)
Intercept	0.0315***	-0.0006***	0.0041***	0.0211***	-0.0004***	0.0027***	0.0109***	-0.0002***	0.0013***
	(0.0001)	(0.0002)	(0.0007)	(0.0001)	(0.0001)	(0.0006)	(0.0000)	(0.0001)	(0.0005)
Sale Year-Qtr f.e.	No	Yes	Yes	No	Yes	Yes	No	Yes	Yes
City f.e.	No	No	Yes	No	No	Yes	No	No	Yes
R-Square	0.0002	0.0329	0.0389	0.0001	0.0224	0.0274	0.0001	0.0118	0.0156
N	5,328,576	5,328,576	5,328,576	5,328,576	5,328,576	5,328,576	5,328,576	5,328,576	5,328,576

This table presents the regression results that relates divestment in the period after the one year holding period mark to seller type. The dependent variable indicates if the investment sale occurs within 90-days (Models 1 to 3), 60-days (Models 4 to 6) or 30-days (Models 7 to 9) after the one year holding period time point. The regressions include the entire sample of investments regardless of the length of the holding period. Investor is a variable that indicates if the investment relates to a investor. Standard errors are indicated in parentheses and are corrected for heteroscedasticity. ***, ** and * indicate significance at the 1, 5 and 10 % level respectively.

Table IX - Regression results relating divestment after the one year mark and investor classification - Subsets across Land Classification.

	(Non-Land Investments) After 90	(Land Investments) After 90
Investor	0.1323***	0.1461***
	(0.0045)	(0.0082)
Intercept	-0.0061*	-0.0092
	(0.0037)	(0.0106)
Sale Year-Qtr f.e.	Yes	Yes
City f.e.	Yes	Yes
R-Square	0.0462	0.0786
N	247,818	74,261

This table presents the regression results that relates divestment in the period after the one year holding period mark to seller type. The dependent variable indicates if the investment sale occurs within 90-days after the one year holding period time point. The regressions include a sample of investments where the sale occurs before and after 90 days of the one year holding period time point. Investor is a variable that indicates if the investment relates to a investor. Regressions estimates for the sample of investments based on the property classification as land or otherwise are presented separately. Standard errors are indicated in parentheses and are corrected for heteroscedasticity. ***, ** and * indicate significance at the 1, 5 and 10 % level respectively.

Table X - Regression results relating divestment after the one year mark and investor classification - Accounting for heterogeneity in properties.

	After 90
Investor	0.1386***
	(0.0109)
Bedrooms	-0.0009
	(0.0031)
Baths	0.0008
	(0.0041)
Square Footage	-0.0000
	(0.0000)
Age	-0.0004***
	(0.0001)
Assessed Value (in 100,000s)	0.0065***
	(0.0015)
Intercept	0.0076
	(0.0131)
Sale Year-Qtr f.e.	Yes
City f.e.	Yes
R-Square	0.0362
N	42,321

This table presents the regression results that relates divestment in the period after the one year holding period mark to seller type. The dependent variable indicates if the investment sale occurs within 90-days after the one year holding period time point. The regressions include a sample of investments where the sale occurs before and after 90 days of the one year holding period time point. Investor is a variable that indicates if the investment relates to a investor. Property characteristics are included as controls. Standard errors are indicated in parentheses and are corrected for heteroscedasticity. ***, ** and * indicate significance at the 1, 5 and 10 % level respectively.

Table XI - Regression results relating divestment after the one year mark and investor classification - Subset across Retail and Institutional Investors.

	After 90
Individual Investor	0.2114***
	(0.0042)
Intercept	-0.0056
	(0.0054)
Sale Year-Qtr f.e.	Yes
City f.e.	Yes
R-Square	0.0614
N	220,428

This table presents the regression results that relates divestment in the period after the one year holding period mark to seller type. The dependent variable indicates if the investment sale occurs within 90-days after the one year holding period time point. The regressions include a sample of investments where the sale occurs before and after 90 days of the one year holding period time point. Individual Investor is a variable that indicates if the investment relates to a retail investor. Regressions estimates based on a sample of investments by retail investors and institutional investors are presented separately. Standard errors are indicated in parentheses and are corrected for heteroscedasticity. ***, ** and * indicate significance at the 1, 5 and 10 % level respectively.

Table XII - Regression results relating divestment after the one year mark and investor experience.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	After 90	After 90	After 90	After 60	After 60	After 60	After 30	After 30	After 30
Investment Sequence	0.0040***	0.0023***	0.0020***	0.0028***	0.0016***	0.0014***	0.0016***	0.0010***	0.0009***
	(0.0003)	(0.0003)	(0.0003)	(0.0003)	(0.0003)	(0.0003)	(0.0002)	(0.0002)	(0.0002)
Intercept	0.0361***	0.0389***	0.0139**	0.0244***	0.0263***	0.0113**	0.0127***	0.0136***	0.0037
	(0.0006)	(0.0006)	(0.0068)	(0.0005)	(0.0005)	(0.0047)	(0.0004)	(0.0004)	(0.0032)
Sale Year-Qtr f.e.	No	Yes	Yes	No	Yes	Yes	No	Yes	Yes
City f.e.	No	No	Yes	No	No	Yes	No	No	Yes
R-Square	0.0009	0.0383	0.0738	0.0006	0.0260	0.0613	0.0004	0.0131	0.0493
N	256,481	256,481	256,481	256,481	256,481	256,481	256,481	256,481	256,481

This table presents the regression results that relates divestment in the period after the one year holding period mark to the investment sequence number for a subset of the data that comprises of investors. The dependent variable indicates if the investment sale occurs within 90-days (Models 1 to 3), 60-days (Models 4 to 6) or 30-days (Models 7 to 9) after the one year holding period time point. Correspondingly, the regressions include a sample of investments (for investors only) where the sale occurs before and after the specified number of days of the one year holding period time point (90, 60 or 30 days). Investment Sequence is the sequence number of the investment property (held by an investor). Standard errors are indicated in parentheses and are corrected for heteroscedasticity. ***, ** and * indicate significance at the 1, 5 and 10 % level respectively.

Table XIII - Regression results relating returns and divestment in the period after the one year mark.

	(1)	(2)	(3)
	Return	Return	Return
After	-0.0491***	-0.0343***	-0.0340***
	(0.0083)	(0.0090)	(0.0089)
Investor	0.6045***	0.6040***	0.4767***
	(0.0396)	(0.0394)	(0.0397)
After x Investor	-0.0569	-0.0610	-0.0718
	(0.0485)	(0.0482)	(0.0479)
Intercept	0.6033***	0.6695***	0.6560***
	(0.0063)	(0.1407)	(0.1359)
Purchase Year-Qtr f.e.	No	Yes	Yes
Sale Year-Qtr f.e.	No	Yes	Yes
City f.e.	No	No	Yes
R-Square	0.0095	0.0176	0.1563
N	111,276	111,276	111,276

This table presents the regression results that relates returns to sale in the period after the one year mark for a subset of the data that comprises of investors. The dependent variable is the annualized return. After is a variable that indicates if the sale occurs within 30-days after the one year holding period time point. The regressions include a sample of investments where the sale occurs before and after 30 days of the one year holding period time point. Standard errors are indicated in parentheses and are corrected for heteroscedasticity. ***, ** and * indicate significance at the 1, 5 and 10 % level respectively.