

The Impact of Tax Incentives on Investment: A Cost-Benefit Analysis of Real Estate Tax- Deferred Exchanges

David C. Ling & Milena Petrova



Background on Tax-Deferred Exchanges in Real Estate

- Under Section 1031 of IRC, RE owners who dispose of **investment property** & reinvest the net proceeds in other “**like kind**” **property** are able to defer recognition of taxable gain on sale of a “relinquished” property
 - If “replacement” property is subsequently disposed in a taxable sale,
realized gain = deferred gain +
taxable gain realized since acquisition of replacement property
 - But...if disposition of replacement property is also structured as an exchange, realized gain can again be deferred

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1. Political Environment & Report for Real Estate Roundtable

Political Environment

- Recent tax reform proposals & the President's budgets would repeal or limit exchanges
 - Why? Elimination of exchanges is seen as a potential source of tax revenue
 - JCT's tax expenditure estimate for 2014-2018 was \$99 billion
- In 2014, **Real Estate Roundtable** (RER) issued a call for research proposals to evaluate effects of eliminating exchanges
- RER (<http://www.rer.org>) is an industry coalition of leading publicly-held & privately-owned RE firms, along with the major RE trade associations

Result of Call for Proposals?

- Milena Petrova & I were asked to submit a research proposal
 - Milena is a former U.F. finance Ph.D. student; now a professor at Syracuse University
- Our proposal was selected for funding by RER
- The \$125,000 grant resulted in a completed study titled “*The Economic Impact of Repealing or Limiting Section 1031 Like-Kind Exchanges for Real Estate Properties*”

Formal Launch of Study by RER

- Invited to Washington D.C. by RER & coalition members to formally “launch” the public release of study in July 2015
- DC events organized by RER over two days included:
 - Briefing/presentation for members of the press
 - Presentation at the Office of Tax Analysis (Department of Treasury)
 - Meeting with the Joint Committee on Taxation (JCT), staff of the Senate Finance Committee, and staff of the House Ways & Means Committee
 - Congressional staff briefing

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2. Evidence on Use of Real Estate Exchanges

Evidence on Use of RE Exchanges

- In 2004, $\approx 80\%$ percent of CRE transactions on the West Coast of U.S. involved use of an exchange by seller, buyer, or both (McLinden, 2004)
- Over 1999-2005 sample, Ling & Petrova (2008) report that 32% of apartment transactions in their database involved an exchange; corresponding % for office sample was 20%
- Use decreased significantly during recent credit/RE crisis
- More widely used in high tax, Western states

Evidence on Use of RE Exchanges

- Relatively inexpensive properties dominate market for RE exchanges
 - 2011 survey by Federation of Exchange Accommodators (FEA):
 - 36% of all exchange transactions facilitated by its members had a size (as measured by sale price of relinquished property) < \$500,000;
 - 59% of all transactions had a sale price < \$1,000,000
 - Anecdotally, largest exchange accommodator reported that the median proceeds from sale of a relinquished property in 2015 was \$400,000

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3. Estimated Magnitude of Exchange Tax Benefits

Incremental Value of Exchange Relative to Fully Taxable Sale

- $INCNPV_t = PV$ of net cash flows (CFs) if taxpayer **exchanges** into replacement property
 - PV of net CFs if taxpayer **sells** relinquished property & **purchases** replacement property

Incremental Value of Exchange Relative to Fully Taxable Sale

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$$INCNPV_t = [SC_t^1 - EC_t + TDS_t^1 - B_t] - \sum_{i=1}^n \frac{\tau_o (DEP_i^{2,s} - DEP_i^{2,e})}{(1+k)^i} - \frac{\tau_{dr} (RECAP_{t+n}^{2,e} - RECAP_{t+n}^{2,s})}{(1+k)^n} - \frac{\tau_{cg} (CG_{t+n}^{2,e} - CG_{t+n}^{2,s})}{(1+k)^n}$$

deferred tax liability in year t

reduced PV of annual depreciation deductions t

increased depreciation recapture tax on taxable sale of replacement property

increased capital gain tax on taxable sale of replacement property

- Note: CFs from rental operations & sale in year n do not affect $INCNPV_t$
- $INCNPV_t \neq$ initial tax savings (TDS)

Base-Case Model Parametrization

- Price of relinquished = price of replacement property
- Mortgage debt: same for relinquished & replacement property
- Selling cost in fully taxable sale: 3% of relinquished property's sale price
- Exchange costs: equal to selling costs of a fully taxable sale
- Ordinary income tax rate: 39.6%
- Depreciation recapture tax rate: 25%
- Capital gain tax rate: 20%
- After-tax discount rate: 6%
- Non-depreciable land portion of relinquished & replacement property's original tax basis: 20% (no personal property)
- Relinquished & replacement property are both non-residential real property
- **Other key assumptions:** # of years since acquisition of relinquished property ($HOLD^1$), annualized rate of nominal price appreciation since acquisition of relinquished property (π^1), expected holding period of replacement property ($HOLD^2$).

Figure 1: Incremental NPV as a % of Property Value (nonresidential)

Figure 2A: 5 years since acquisition of relinquished property

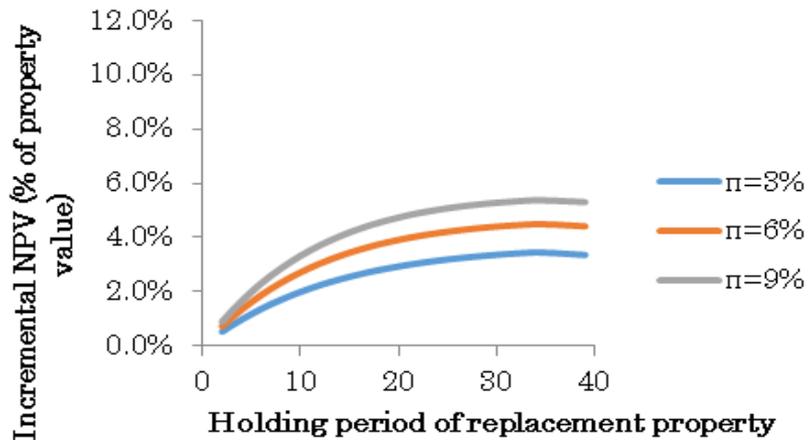


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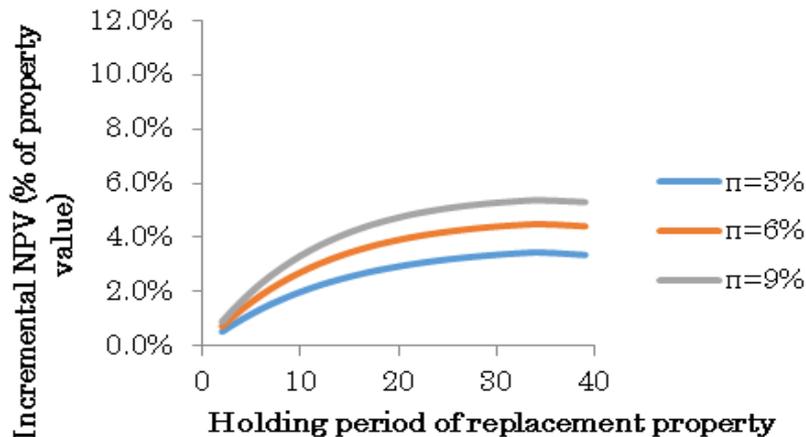


Figure 2B: 10 years since acquisition of relinquished property

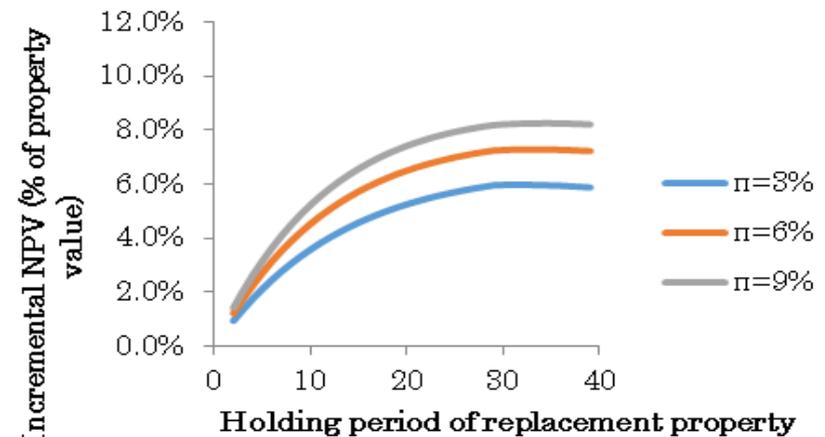


Figure 2C: 15 years since acquisition of relinquished property

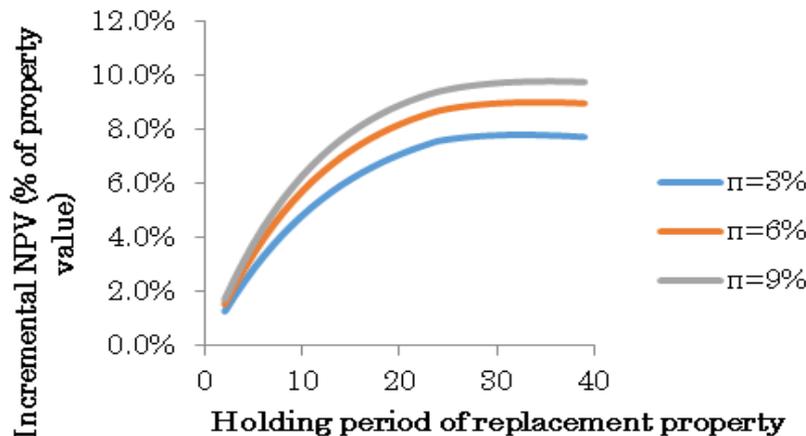


Figure 2D: 20 years since acquisition of relinquished property

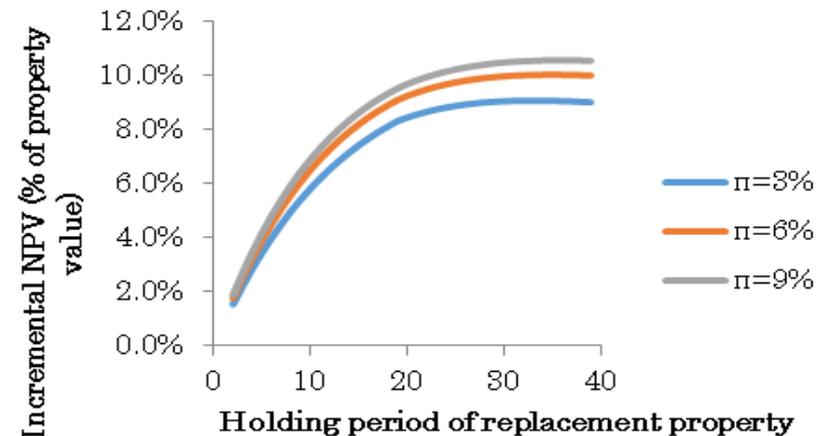


Figure 4: Incremental NPV as a % of Deferred Taxes (nonresidential)

Figure 4A: 5 years since acquisition of relinquished property

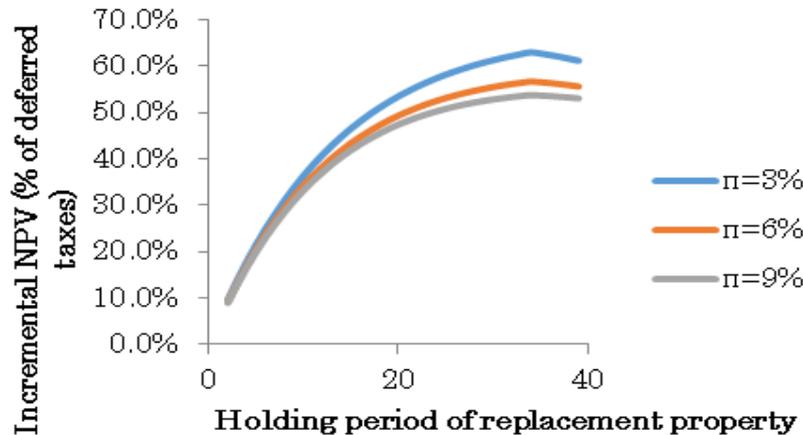


Figure 4B: 10 years since acquisition of relinquished property

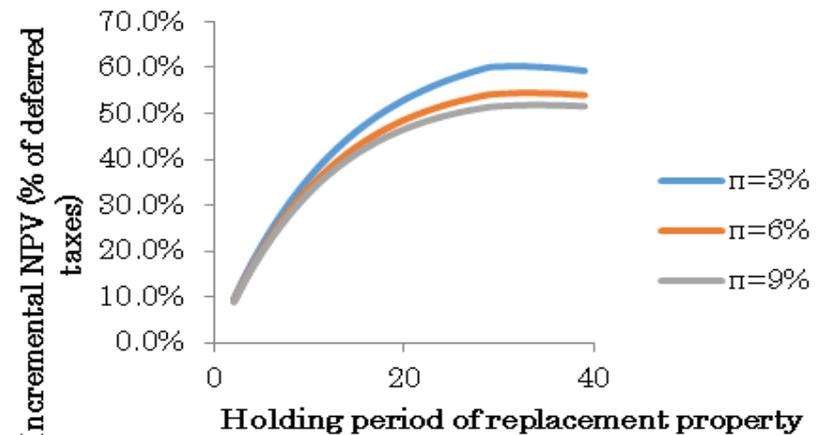


Figure 4C: 15 years since acquisition of relinquished property

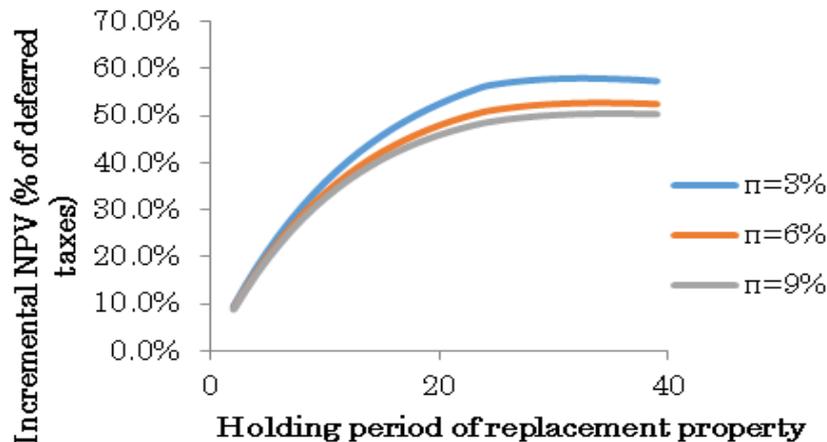
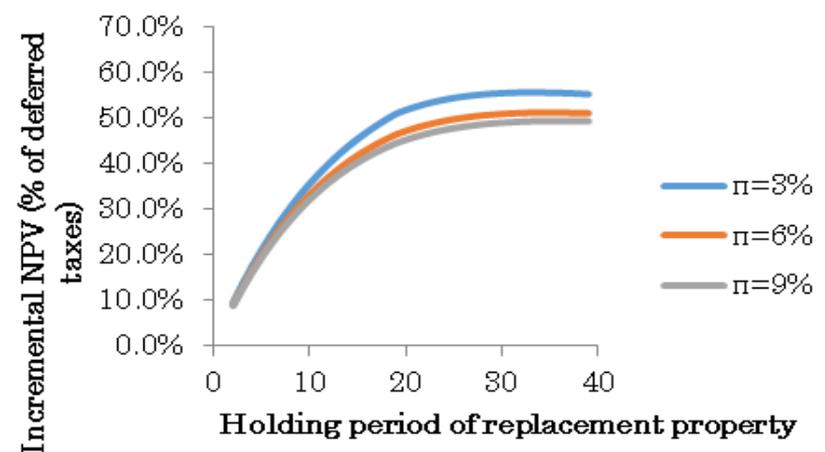


Figure 4D: 20 years since acquisition of relinquished property



Robustness Checks

- Use of 4% after-tax discount rate **decreases maximum benefit** of an exchange from $\approx 60\%$ to $\approx 50\%$ of deferred tax liability
- Results for residential properties very similar

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4. Static Estimates of Cost to Treasury

Evidence from IRS Data

- Individuals, corporations, and partnerships using like-kind exchanges must include a completed **Form 8824** with their federal tax return
- Information is compiled & distributed by U.S. Treasury

Evidence from IRS Data: Table 1

(in \$billions)

	2012	2011	2010	2009	2008	2007	2006	2005	2004	2003	2003-2012	
											Sum	Mean
Individuals + Corporations + Partnerships												
FMV of all like-kind property received (Form 8824, line 17)	\$116.8	\$70.8	\$78.6	\$63.3	\$118.4	\$199.4	\$219.7	\$223.8	\$176.4	\$117.4	\$1,384.6	\$138.5
Deferred gain from all industries (From 8824, line 24)	61.6	33.7	39.9	33.8	56.1	90.0	102.8	101.4	73.7	46.0	638.9	63.9
Deferred gain from RE industry based on most recent data	18.8	10.5	7.4	6.8	21.8	45.3	48.6	56.6	43.1	24.5	283.3	28.3
Estimated deferred tax liability from RE industry	4.0	2.2	1.5	1.4	4.6	9.5	10.2	11.9	9.1	5.1	59.5	5.9
Estimated economic benefit to taxpayers:												
Minimum-9.2% of deferred tax liability	0.4	0.2	0.1	0.1	0.4	0.9	0.9	1.1	0.8	0.5	5.5	0.5
Average-45.0% of deferred tax liability	1.8	1.0	0.7	0.6	2.1	4.3	4.6	5.3	4.1	2.3	26.8	2.7
Maximum-64.0% of deferred tax liability	2.5	1.4	1.0	0.9	2.9	6.1	6.5	7.6	5.8	3.3	38.1	3.8

- **Recognized gain** in year of exchange = realized gain - deferred gain
- Total **deferred gains** on all like-kind exchanges = **\$61.6 billion in 2012**; averaged \$63.9 billion 2003-2012
- But...how much is CRE?

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- Based on most recent IRS data

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- Assume **deferred CRE gains** in 2012 would have been taxed at average federal rate of 21% in a fully-taxable sale
 - 21% = weighted average of 20% max. statutory capital gain tax rate & 25% percent depreciation recapture tax rate
- Implies **deferred CRE tax liabilities** = \$4.0 billion in 2012

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- But...the \$4 billion in estimated tax liabilities overstates benefit to investors because it does not incorporate income tax consequences subsequent to year of exchange

Incremental Value of Exchange Relative to Fully Taxable Sale

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deferred tax liability in year t

increased depreciation
recapture tax on taxable sale of
replacement property

reduced PV of annual
depreciation deductions t

increased capital gain tax on
taxable sale of replacement
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Economic Benefit < Deferred Liability

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- Our analytical model of net tax benefits includes these important future tax impacts
- What if 6% after-tax discount rate is too high?

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5. “Refined” Estimates of Cost to Treasury

Impact of Treasury's Low Discount Rate?

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- To extent Treasury's opportunity cost is < CRE owners, true cost of an exchange to Treasury is lower than corresponding benefit to taxpayer
- Given Treasury's near zero opportunity cost, this **wedge** between net benefit to taxpayers & cost to Treasury **is significant**

Changes in Taxpayer Behavior?

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- Calculations also assume taxpayers would have disposed of their properties in fully taxable sales in absence of ability to exchange
- But...taxpayers would delay transactions, driving Treasury revenue gains down significantly
- Dynamic estimate of PV of lost Treasury revenue?
 - \$100-\$200 million....?

General Equilibrium Effects?

- Ernst & Young (2015) estimates elimination would **reduce GDP by \$8.1 billion** each year & reduce labor income by \$1.4 billion.
 - Assuming increased tax revenues from elimination are used to finance a revenue neutral reduction in corporate income tax rates

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6. Effects of Elimination of Like-Kind Exchanges on Property Values & Rents

Analysis Tool: Typical Project Model

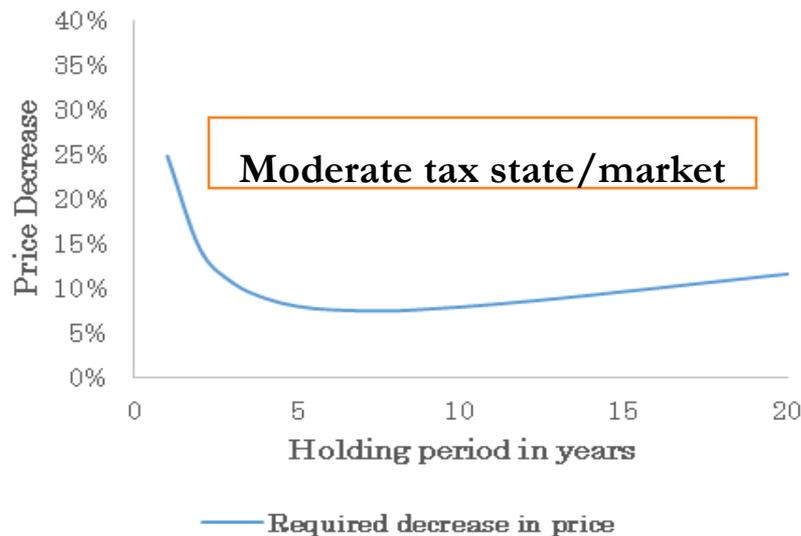
- A “typical project” model:
 - measures & values CFs to equity investor(s) after all operating, finance, & tax expenses (savings) have been paid
- Model first solves for price that equates marginal investor’s expected NPV to zero under current tax law parameters
 - Assuming marginal investor places a 100% probability on using an exchange to dispose of the property at end of expected holding period
- **Short-run effect** of tax law change is % reduction in marginal investor’s max. bid price (value) required to keep NPV=0
- If marginal/typical investor places a zero probability on using an exchange to dispose of the property, elimination would not affect prices
 - At least in this partial equilibrium model

Short-Run v. Long-Run Effects

- Also estimate the **long-run increase in 1st year rents** necessary to offset negative tax law change
- How? compare equilibrium level of rent under current law to rent required after elimination of exchanges
 - Assuming all-in construction costs don't change
- Parameter assumptions based on 2014, 4th quarter data

Required Price Decrease After 1031 Elimination—Nonresidential

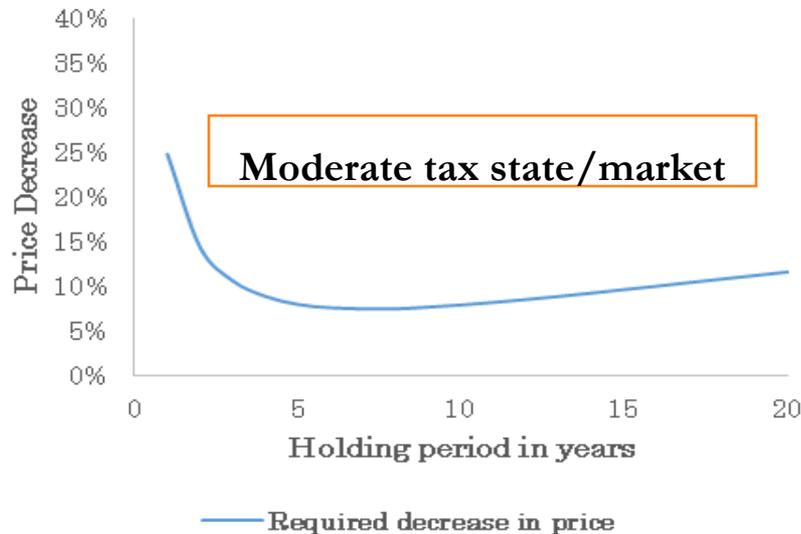
Figure10A: $\tau_{OI} = 39.6\%$, $\tau_{CG} = 20\%$, $\tau_{DR} = 25\%$



- **Price declines of 8%-12%** over holding periods of 3-20 years; 10%-17% for apartments

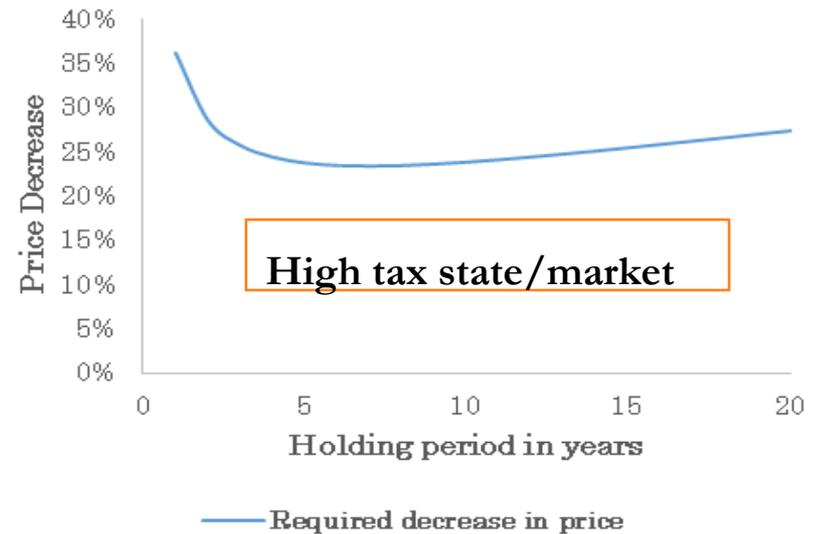
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- **Price declines of 8%-12%** over holding periods of 3-20 years; 10%-17% for apartments

Figure10B: $\tau_{OI} = 52.9\%$, $\tau_{CG} = 33\%$, $\tau_{DR} = 38\%$

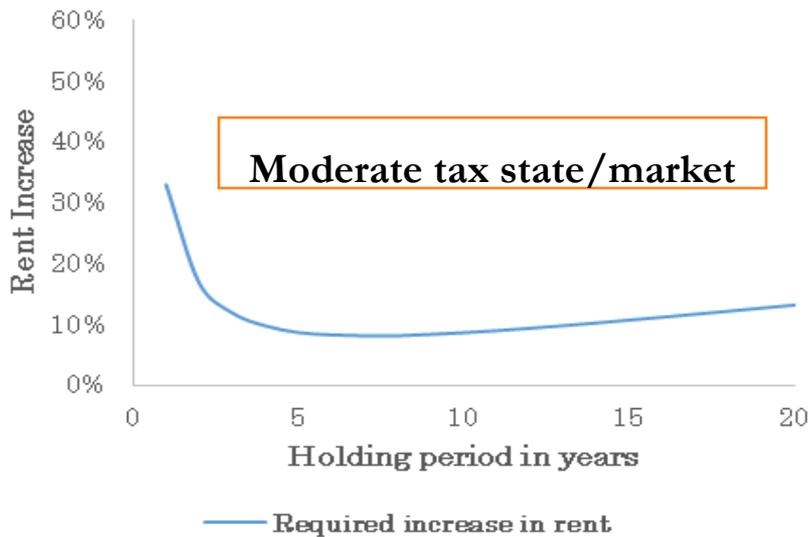


- **Price declines of 23%-27%** over holding periods of 3-20 years; 22%-27% for apartments

Such declines would reduce wealth of a large cross-section of households & slow or stop construction in many local markets

Required Increase in Rents After Elimination—Nonresidential

Figure 11A: $\tau_{OI} = 39.6\%$, $\tau_{CG} = 20\%$, $\tau_{DR} = 25\%$



- **Rent increases of 8%-13%** over holding periods of 3-20 years; 11%-20% for apartments

Required Increase in Rents After Elimination—Nonresidential

Figure11A: $\tau_{OI} = 39.6\%$, $\tau_{CG} = 20\%$, $\tau_{DR} = 25\%$

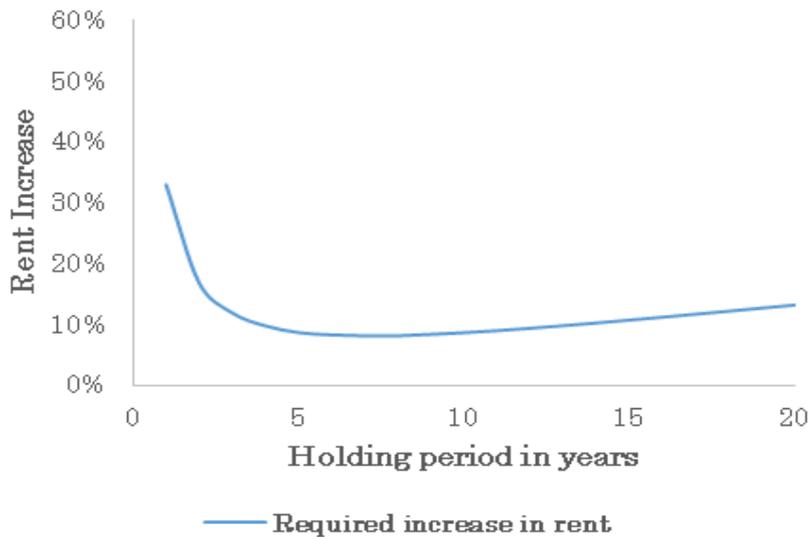
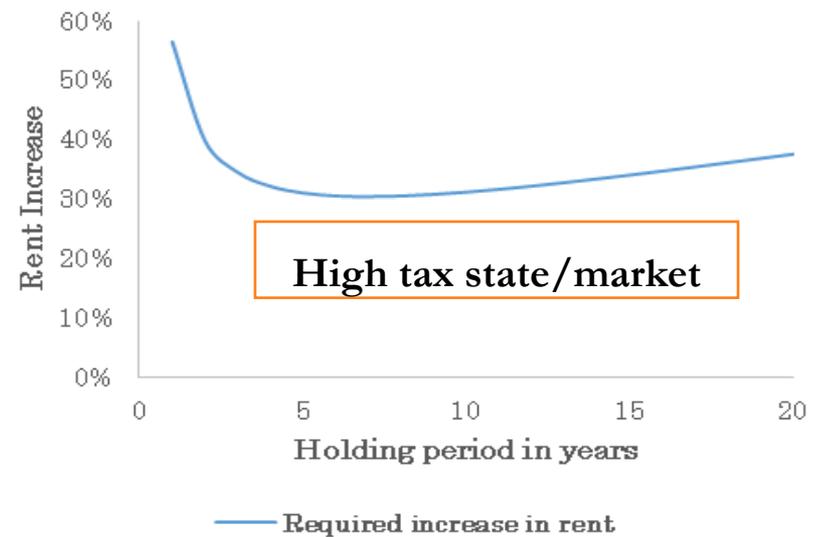


Figure11B: $\tau_{OI} = 52.9\%$, $\tau_{CG} = 33\%$, $\tau_{DR} = 38\%$



- **Rent increases of 8%-13%** over holding periods of 3-20 years; 11%-20% for apartments

- **Rent increases of 29%-37%** over holding periods of 3-20 years; 28%-38% for apartments

Such increases would reduce the affordability of CRE space for both large & small tenants

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7. Economic Benefits of 1031 Exchanges – Empirical Evidence

Evidence from CoStar & NCREIF Data

- Buyers pay more for replacement properties when completing an exchange
- Capital expenditures in replacement exchange properties tend to be higher than in regular acquisitions following a taxable sale
 - Evidence of increased investment
- Exchangers use less leverage to acquire replacement properties compared to ordinary acquisitions
- Holding periods for properties disposed through 1031 exchanges are shorter
 - Availability of exchange increases liquidity
- Most replacement properties are subsequently sold in fully taxable sales
 - In 88% of our sample, investors disposed of properties acquired in a 1031 exchange through a fully taxable sale

The Impact of Repealing Like-Kind
Exchanges in Real Estate

8. Summary of Study

Summary

- Document widespread use of RE like-kind exchanges
- Build a model of the net (incremental) benefit of an exchange
 - As a % of property value: 2%-10%
 - Do exchangers often overpay for replacement properties?
 - As a % of deferred tax liability: 10%-60%
- Estimate elimination would produce negligible increases in tax revenue
 - Static estimate: \$1-\$2 billion/yr.
 - Dynamic estimate: ??? (\$100-\$200 million/yr.)
- Elimination would primarily affect small & medium size investors/properties

Summary, continued

- Elimination of RE like-kind exchanges will likely lead to:
 - Price decreases (short-run)
 - Moderately taxed markets: 8-12%
 - High tax markets: 23-27%
 - Rent increases (long-run)
 - Moderately taxed markets: 8-13%
 - High tax markets: 29-37%
 - Decrease in \$ amount of RE investment (including CAPX)
 - Increase in investment holding periods (decrease in liquidity), and
 - Increase in use of leverage
- Negative effects would be larger in markets & market segments where exchanges are widely used

The Impact of Tax Incentives on Investment: A Cost-Benefit Analysis of Real Estate Tax- Deferred Exchanges

David C. Ling & Milena Petrova



The Economic Impact of Repealing or Limiting Section 1031 Like-Kind Exchanges in Real Estate

David C. Ling and Milena Petrova
July 2015



Impact of Behavioral Responses

	2012	2011	2010	2009	2008	2007	2006	2005	2004	2003	2003-2012	
											Sum	Mean
Individuals + Corporations + Partnerships												
FMV of all like-kind property received (Form 8824, line 17)	\$116.8	\$70.8	\$78.6	\$63.3	\$118.4	\$199.4	\$219.7	\$223.8	\$176.4	\$117.4	\$1,384.6	\$138.5
Deferred gain from all industries (From 8824, line 24)	61.6	33.7	39.9	33.8	56.1	90.0	102.8	101.4	73.7	46.0	638.9	63.9
Deferred gain from RE industry based on most recent data	18.8	10.5	7.4	6.8	21.8	45.3	48.6	56.6	43.1	24.5	283.3	28.3
Estimated deferred tax liability from RE industry	4.0	2.2	1.5	1.4	4.6	9.5	10.2	11.9	9.1	5.1	59.5	5.9
Estimated economic benefit to taxpayers:												
Minimum-9.2% of deferred tax liability	0.4	0.2	0.1	0.1	0.4	0.9	0.9	1.1	0.8	0.5	5.5	0.5
Average-45.0% of deferred tax liability	1.8	1.0	0.7	0.6	2.1	4.3	4.6	5.3	4.1	2.3	26.8	2.7
Maximum-64.0% of deferred tax liability	2.5	1.4	1.0	0.9	2.9	6.1	6.5	7.6	5.8	3.3	38.1	3.8

- Calculations assume taxpayers would have disposed of their properties in fully taxable sales in absence of ability to exchange
- Thus, these **static** estimates overstate lost tax revenue

Background on Tax-Deferred Exchanges in Real Estate

- Section 1031 of IRC dates back to the 1920's, but requirement for simultaneous swap of properties in an exchange severely limited its use
 - Congress amended original regulations in 1984 to allow taxpayers more time to complete an exchange
 - In 1991, IRS issued final “safe harbor” regulations for initiating & completing delayed Section 1031 exchanges

Figure 5: Sensitivity to Assumed Discount Rate

- Tax deferral benefit produced by exchange is immediate
- But...foregone depreciation deductions & increased future capital gain & depreciation recapture tax liabilities occur **in subsequent years**
- Thus, incremental NPV of an exchange to the taxpayer is:
 - increased by a higher discount rate
 - decreased by a lower discount rate

Figure 6: Residential (Apartments) v. Nonresidential

- More rapid depreciation of residential increases immediate benefit of tax deferral
 - More depreciation recapture income to defer
- But...increased deferral benefit is offset by reduced depreciation deductions due to carry-forward of basis & deductions
- Net result?
 - Generally lower incremental NPV from exchange for apartments

Model Assumptions: From RERC Quarterly Investor Survey

- Cap rate (NOI/price) = 7.25%
 - Average of cap rates on “first tier” office, industrial, and retail properties
 - Cap rate, along with first year NOI, determines initial price
- Expected holding period of marginal investor = 9 years
- Expected annual growth in nominal rental rates & expenses = 2.8%
- Required unlevered, before-tax, return on equity = 8.75%
 - Average of required unlevered returns on office, industrial, & retail properties

Financing Assumptions: RealtyRates.com

- Initial LTV = 65%
- Interest rate on permanent financing = 5.14%
 - From realtyrates.com survey
- Required unlevered, before-tax, return on equity = 8.75%
 - Simple average of required unlevered returns on office, industrial, and retail properties
- Amortization period = 26 years

- Assumptions imply a 10.78% levered, after-tax return on equity, which we round to 11%

Other Assumptions

- Vacancy & collection losses = 5% of gross rental income
- Operating expenses and capital expenditures in the first year of operations consume 41% & 5%, respectively, of effective gross income
- For simplicity, assume all “gross” leases (owner pays all operating expenses)
- Based on 4th quarter 2014 RERC survey, annual CAPX are expected to increase 4.6% per year
- Terminal cap rate is 63 basis points higher than initial (going-in) cap rate
 - Based on latest RERC survey
- Land = 20% of acquisition price
- No personal property
- Investor expects to dispose of property with exchange & use an exchange again if replacement property is subsequently disposed
 - Thus, assumed tax rates on capital gain & depreciation recapture income = 0

Figure 3: Incremental NPV as a % of Deferred Gain

Figure 3A: 5 years since acquisition of relinquished property

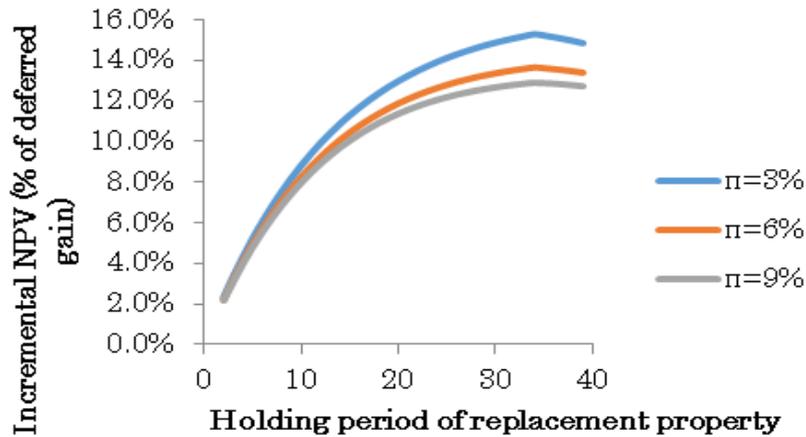


Figure 3B: 10 years since acquisition of relinquished property

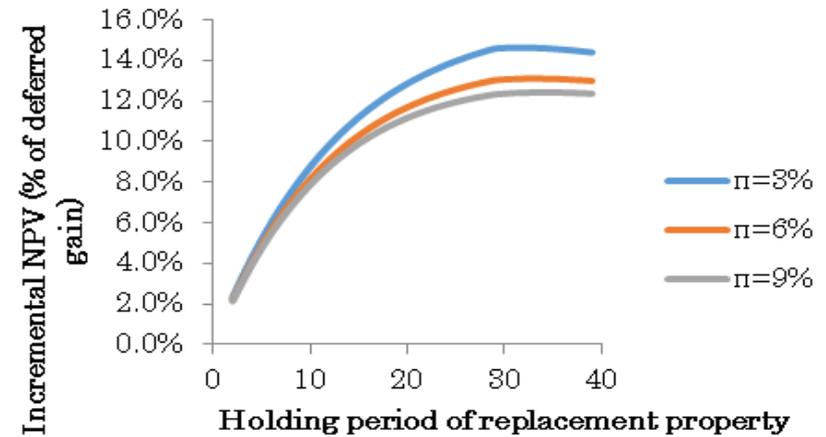


Figure 3C: 15 years since acquisition of relinquished property

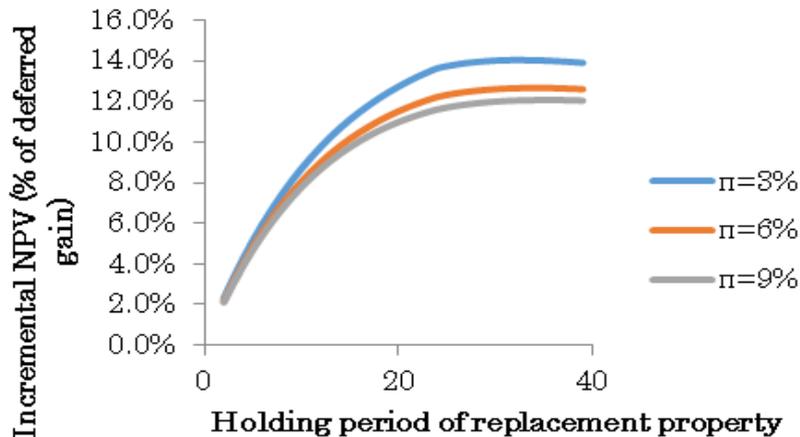
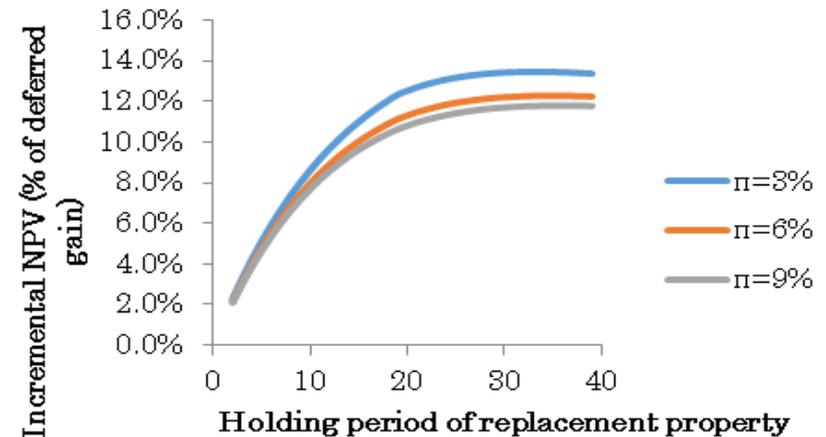


Figure 3D: 20 years since acquisition of relinquished property



What We Find

- Use of RE tax-deferred exchanges varies significantly over time, by property type, and across MSAs
 - Range in our data is from < 1% of transactions in some markets in a given year to > 50%
- Exchanges more widely used
 - when prices are rising
 - by sellers of apartment properties, followed by office and industrial properties
 - in Western states and MSAs