Real Estate Fund Investment in Post-Crisis Ireland
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Disclaimer: All material presented reflect the author’s views, and do not represent the views of the Central Bank of Ireland
Introduction

- Ireland’s property market has had an exceptional experience over the past 17 years.

- Irish domiciled real estate funds (IREFs) have seen their Irish property assets increase from €1bn to €14.5bn between end-2012 and end-2016.

- Now own 53% of total CRE stock as of end-2016.

- Despite this, little is known about them. This paper seeks to answer two questions on them:
  - Where and in what are they investing?
  - What drives investment into them?

![Graph showing total returns across international markets](source: MSCI/IPD. Note: Grey bars signify the relevant maximum and minimum annual total returns observation (in local currency) across a number of international markets.)
Literature and Data

- **Previous literature includes:**
  - Descriptive work: McCarthy (2017) and real estate agent market commentary.
  - Mutual fund investment flows and alternative investment opportunities: Grose (2011) and Sebastien and Weistroffer (2007).
  - Cross border real estate investment: Baum et al. (2013).

**Data**

- Questions being asked require data beyond standard statistical return. To answer them, I construct:
  - A property-by-property dataset from audited financial statements.
  - An individual shareholder dataset from each fund’s shareholder register.
The where of IREF Investment

- Investment is overwhelmingly focused in Ireland’s capital, Dublin.
- This is a consistent feature of the data.
- Decreasing concentration since 2014.

Source: Audited financial statements, author’s calculations
Looking at Dublin vs. Rest of Ireland:

- Both consist of mostly commercial property…

- …but the composition of commercial property holdings differs.

Residential property makes up small amount of total for each area.
Modelling Investment into IREFs

- In essence the analysis is one of portfolio choice.

- Therefore, changes in an investor's wealth constraint, the expected return on IREF equity and the expected return on alternative investment opportunities are the relevant explanatory variables.

- Alternative investment opportunities can be modelled as domestic, cross-sample and out of sample.

- Larger investors may have different investment opportunities available to them.

- Taxes change for foreign investors at beginning 2017.
Model

Analysis is conducted with a panel fixed effects model.

\[ Y_{ijt} = B_0 + B_1 Z_{jt} + B_2 X_{it} + B_3 T_{it} + B_4 F_{it} + u_{ijt} \]

Where:
- \( Z_{jt} \) is a matrix of fund covariates
- \( X_{it} \) is a matrix of investor covariates
- \( T_{it} \) is a difference in difference estimator
- \( F_{ijt} \) is a matrix of fixed effects.
- \( u_{ijt} \) is the error term, two way clustered on fund and investor.
## Results

<table>
<thead>
<tr>
<th>Variable</th>
<th>Model (1)</th>
<th>Model (2)</th>
<th>Model (3)</th>
<th>Model (4)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Investor Covariates</strong></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>GDP</td>
<td>0.3 (0.31)</td>
<td>0.18 (0.29)</td>
<td>0.27 (0.33)</td>
<td>0.16 (0.31)</td>
</tr>
<tr>
<td>Equity - Domestic</td>
<td>-0.24 (0.21)</td>
<td>-0.25 (0.18)</td>
<td>-0.22 (0.23)</td>
<td>-0.26 (0.21)</td>
</tr>
<tr>
<td>Bond - Domestic</td>
<td>0.14 (0.67)</td>
<td>0.2 (0.65)</td>
<td>0.11 (0.7)</td>
<td>0.21 (0.67)</td>
</tr>
<tr>
<td>Real Estate - Domestic</td>
<td>0.94 (1.06)</td>
<td>0.84 (0.96)</td>
<td>1.02 (1.13)</td>
<td>0.96 (1.07)</td>
</tr>
<tr>
<td>Real Estate (Ireland) – Domestic</td>
<td>0.00 (0.96)</td>
<td>0.18 (0.82)</td>
<td>-0.08 (1)</td>
<td>0.09 (0.88)</td>
</tr>
<tr>
<td>FX</td>
<td>0.49 (0.4)</td>
<td>0.34 (0.36)</td>
<td>0.45 (0.42)</td>
<td>0.36 (0.4)</td>
</tr>
<tr>
<td>Equity – Cross Sample</td>
<td>0.15 (0.37)</td>
<td>0.13 (0.37)</td>
<td>0.2 (0.43)</td>
<td>0.15 (0.42)</td>
</tr>
<tr>
<td>Bond – Cross Sample</td>
<td>-0.24 (0.57)</td>
<td>-0.79 (0.72)</td>
<td>-0.29 (0.59)</td>
<td>-0.62 (0.63)</td>
</tr>
<tr>
<td>Real Estate – Cross Sample</td>
<td>-3.87 (5.34)</td>
<td>-5.28 (5.5)</td>
<td>-3.89 (5.67)</td>
<td>-6.27 (5.94)</td>
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<tr>
<td><strong>Fund Covariates</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Dividend Yield</td>
<td>0.13 (0.04)***</td>
<td>0.13 (0.04)***</td>
<td>0.14 (0.03)***</td>
<td>0.15 (0.03)***</td>
</tr>
<tr>
<td>Capital Appreciation</td>
<td>0.00 (0.01)</td>
<td>0.00 (0.01)</td>
<td>0.01 (0.01)</td>
<td>0.01 (0.01)</td>
</tr>
<tr>
<td><strong>Policy Covariate</strong></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Tax</td>
<td>-1.23 (2.58)</td>
<td>1.14 (3.31)</td>
<td></td>
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<tr>
<td>Investor-Fund Fixed Effects</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
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<tr>
<td>Quarter Fixed Effects</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
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<tr>
<td>Investor Size-Quarter Interaction Fixed Effects</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
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</tbody>
</table>

### Key Results:

- Investor covariates show no statistically significant relationships.
- Fund covariates have expected relationship, but only dividend yield attains statistical significance.
- Tax change appears to have had an impact indistinguishable from zero.
Conclusion

To conclude, I’ll give an answer to the two questions raised at the start:

Where and what are IREFs investing in?
- IREFs are predominately invested in commercial real estate located in Dublin.

What drives investment into IREFs?
- Fund dividends the only variable to share a statistically significant relationship with investment.
- Tax change in 2016 Finance Act seems to have had no impact on affected investors.
- Domestic and cross-sample alternative investment opportunities do not appear relevant for investors.