

The Impact of Foreign Migration to Canada on REIT Operating Performance

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Abstract

The Impact of Foreign Migration to Canada on REIT Operating Performance

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This thesis explores the influence of international migration on the operational performance of Real Estate Investment Trusts (REITs) in Canada. This study focuses on the relationship between international migrants and the operational performance of Canadian REITs. An exposure to international migration measure is built using the weight of properties held by REITs in different provinces and the international migrants in the respective province. The findings reveal that an increase in the exposure to net non-permanent residents will increase the operational performance of Canadian REITs. Furthermore, the implementation of Bill-28 in British-Columbia and NRST in Ontario results in REITs residential exposure to net non-permanent residents decreasing the operational performance in each respective region. This thesis contributes to the understanding of how demographic shifts, specifically international migration, affect REITs operational performances.

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1. Introduction

As economies continue to expand and attain higher levels, one notable factor acts as a significant contributor: International Migration. The influx of international migrants helps increase economic growth by increasing workforce diversity, stimulating domestic spending, and allowing new opportunities for innovation, thereby strengthening a nation's global position (Chiswick, et al., 1992).

Canada has been one of the favored destinations for global immigrants over the last few decades. Between 2000 and 2022, the Canadian population has seen an increase of approximately 29%, of which 77% is represented by the net international migration¹. Not only has it influenced demand dynamics, but it has also altered investment patterns, housing policies, and urban development trajectories. Studies show that immigrants face initial employment challenges but also contribute positively to economic growth, especially when they have higher levels of education (Latif, 2015; Akbari and Haider, 2018). In the real estate sector, immigration has been linked to increases in housing demand and prices in Canada, affecting both the native population and the economy (Ley and Tutchener, 2001; Akbari and Aydede, 2012).

Real Estate Investment Trusts (REITs) have emerged as an essential component of the Canadian market, influencing various segments of real estate from commercial properties to multi-family residential sectors. In Canada, REITs play a critical role in the real estate market across major cities. Their involvement in the Canadian multi-family apartment sector has reshaped the dynamics for the population (August, 2020).

Studies on REITs have been multifaceted. Operational metrics have been at the center of understanding their impact on REIT returns (Beracha et al., 2019). Regarding the impact on these operational performance metrics, research has found significant influence from population mobility during pandemics, portfolio greenness, and corporate structure (Eicholtz and Yönder, 2015; Hogan and Huerta, 2019; Schrand et al., 2018; Yönder and Yücel, 2022; Devine and Yönder, 2023).

¹ Source: Statistics Canada

My research examines how immigration can impact real estate investment trusts. Specifically, I focus on the impact that REIT exposure to international migration has on Canadian REIT operational performance. To the best of my knowledge, there is no other paper focused on the impact of immigration to REIT performance. Furthermore, I study the implication of policy implementations on the Canadian REIT operational performance. Specifically, the policies have implications on non-permanent residents' ability to purchase properties in specific regions within Canada. Therefore, I use Bill-28 and NRST as an exogenous shock in my analysis.

To conduct this research, I create a sample using Canadian public REITs from Q2 2010 until Q4 2022. The data includes property types, date acquired, date sold, and the property size. I exclude the REITs with no properties in Canada throughout my sample and build a property portfolio matrix. The property portfolio matrix represents the property proportions held by a REIT in individual provinces at a specific point in time. Using the international migration data from Statistics Canada, I compute the quarterly provincial proportion by dividing them with the respective provincial population. I multiply each quarterly provincial proportion by each REIT property portfolio matrix. This yields the exposure to migration, my metric of interest.

To analyse the impact on REIT operational performance, I follow the same approach as in Devine and Yönder (2023) and Yönder and Yücel (2022). I extract rental revenue, rental operating expenses, net operating income and the Adjusted FFO. I conduct an OLS regression to compute the impact of REIT's exposure to migration type on the operational performance. Furthermore, I study the impact of policy implementation on the REITs operation performance using a Difference-in-Difference approach, similar to Pavlov and Sommerville (2020) and Yönder and Yücel (2022).

The results indicate that an increase in a Canadian REIT's exposure to net non-permanent residents is associated with an increase in Canadian REIT operational performance. Furthermore, Canadian REIT's exposure to immigration has a slightly significant impact on the net operating income performance. Alternatively, Canadian REIT's exposure to different types of emigrants do not have an impact on operational performance. However, all kinds of international migrants have a positive and significant impact on the adjusted funds from operations. These findings provide insights into how Canadian REITs exposure to international migration can affect their operational performance. Additionally, I discover that Canadian REIT's residential exposure to immigration in Ontario and

British Columbia have a negative impact on the operational performance of Canadian REITs. These findings provide insight on the impact of policy implications on their operational performance.

The remainder of this paper is structured as follows: Section 2 cover the previous literature, which examines the key findings from previous studies, identifies literature gaps, and highlights areas that require further research. Section 3 provides a description of data sources, and the formation of variables that are used in the study. Section 4 includes the summary statistics and describes the methodology. Section 5 presents the analyses results for both varying types of international migration and the implication of policies on REIT operational performance. Finally, section 6 concludes the study by summarizing the study's key findings and highlighting the research's contribution.

2. Literature Review

Research has been conducted in the past studying immigration's impact across a multitude of segments, such as the real economy, the real estate market and rental revenue. Furthermore, government officials play an important role in ensuring a sustainable economy. They actively debate policies which have either a limiting or stimulating effect on the economy.

Moreover, real estate investment trusts (REIT) performance has not only been a discussion topic for alternative investments, but a key area of research for academics. From discussions on their corporate structure (Hardin III et al., 2009; Eicholtz and Yönder, 2015; Schrand et al., 2018; Hogan and Huerta, 2019) to their portfolio composition (Devine and Yönder, 2023; Morri et al., 2021; Suzuki et al., 2023), this topic has grown in popularity over the past two decades. However, to the best of my knowledge, limited research has looked at how migration might affect REITs.

Although articles not being directly related to my research on the impact of international migration on Canadian REIT operational performance, I analyze publications that provide a path to understanding impacts on immigration has on the economy, the real estate market, and policy implications.

2.1 Immigration and the Economy

Immigration has been a topic of interest amongst many researchers, aiming to understand the implications they have on a nation's labour market and economy.

In the United States, international migrants have been a consistent topic of discussion. As immigration increases in the nation, there tends to be an impact on the investment and spending habits (Chiswick et al., 1992). Chiswick et al. (1992) discover this to be true in the long run. Card (2005) extends the topic by showing that immigration levels have a minimal impact on the employment opportunities of lower-educated U.S. citizens. By ensuring stability in the U.S., the economy can continue its trend. These findings are important as immigrants entering the U.S., outside of economically strong nations, are likely to be less wealthy than the native population (Akresh, 2011).

As my research focuses on the Canadian market, we observe similarities in the body of research. The complexity in immigration and the skills brought to Canada have a multifaceted impact on the general economy (Epstein, 1974). Understanding this complexity, Latif (2015) and Akbari and Haider (2018) look to explore specific impacts on general segments of both the economy and the immigration characteristics. As immigrants are consistently subject to new limitations, Latif (2015) found there to be employment challenges faced by immigrants when first entering Canada, indicating that their background plays a role in their opportunities in Canada. On the other hand, Akbari and Haider (2018) determine that immigration and economic growth are positively correlated to the degree of education among immigrants. These are similar findings to Rowthorn (2008) who finds that skilled migrants often make positive fiscal contributions in comparison to lower skilled workers. Furthermore, Dugan et al. (2012) and Dugan et al. (2023), using a Forecasting and User Simulation (FOCUS) model, suggest that immigration will have a positive impact on GDP, increased consumption, and improved government fiscal balances.

As observed across different geographies, a diverse body of research denotes the complexity of the economic impact of immigration, which varies between different countries and different time periods.

2.2 Immigration influence on Real Estate

Understanding the impact of immigration on the real estate market has an important effect on native population and the overall economic state of a nation. International migration continues to rise year over year, resulting in a complex dynamic within the real estate market.

An extensive body of research has studied the impact of immigration on the impact of real estate market. Gopy-Ramdhany and Seetana (2022) explore the impact immigration has on the Australian Market. Ley and Tutchener (2001), Carter (2005), Moos and Skaburskis (2010), and Akbari and Aydede (2012) study immigration impact on Canada and its cities. Saiz (2003, 2007) and Mussa et al. (2017) focus their efforts on understanding the impact of immigration on the U.S. real estate market. Sà (2015), Saiz and Wachter (2011) and Braakmann (2019) study the impact on the U.K. real estate market. Other geographic regions are explored in d'Albis et al. (2019), Peng and Tsai (2019), and Wong et al. (2022). As the degree of cultural inclusion and acceptance, in addition to real estate supply, varies among different geographies, there have been notable differences across this research topic.

The Australian real estate market experiences a short run increase in housing prices as immigration rises (Gopy-Ramdhany and Seetana, 2022). Similarly, Ley and Tutchener (2001) discovered a positive link between immigration and housing prices in Canada. Supporting these findings, Akbari and Aydede (2012) find that Canadian immigration had a small but significantly positive impact on the housing prices. Akbari and Aydede (2012) explained the impact as being a supply shock to the market.

Similar to findings from Akresh (2011), Lightman and Good Gingrich (2018) suggest that immigrants are consistently disadvantaged with comparison to natives. This would suggest that immigrants face greater adversity when trying to sustain themselves in Canada (Reitz et al., 2013). However, Carter (2005) finds that immigration bolstered housing demand and prices in the metropolitan hubs of Canada, despite this stigma. Moos and Skaburskis (2010) provide additional support to the Canadian literature by studying the impact to Vancouver. Furthermore, housing demand from immigrants in an inelastic supply environment contributes to price increases (Moos and Skaburskis, 2010).

The U.S. housing market revealed similar patterns, in addition to providing context on the rental prices. Saiz (2003) discovers a positive correlation between immigration and rental prices, and an even greater one when there is a drastic migrant inflow. Saiz (2007) provides an extension to his previous findings, this time adding further geographic regions and studying the impact on house prices. Saiz (2007) finds that even a 1% rise in a city's immigrant population could lead to a corresponding increase in housing costs and rental costs, especially where the markets have less supply. As a complement to Saiz's (2007) findings, Mussa et al. (2017) finds immigration to increase both rent and house prices by approximately 0.8%. In addition to this, Mussa et al. (2017) finds that immigration has a spillover effect in neighboring regions. The observed spillover effect suggests the native population might choose to avoid immigrants (Mussa et al., 2017), consistent with Gopy-Ramdhany and Seetana (2022) reasons for the long-term increase insignificance.

In contrast, the UK's housing market dynamics differ from other regions. Sà (2015) observed a decline in housing prices with increased immigration. A similar impact is echoed by Zhu et al. (2019), specifically in regions with many jobs and unskilled workers. These declines were attributed to native population departure from immigrant dense regions Sà (2015) and increased rates of free renting among immigrant populations (Zhu et al., 2019), consistent with Mussa et al. (2017) and Akbari and Aydede (2012).

The native population clearly has a preference with regards to the composition of their neighborhoods. Saiz and Wachter (2011) indicate that immigrant density in neighborhoods leads to a decrease in house values, particularly in regions with lower socio-economic standing. Braakmann (2019) observes a negative or neutral effect on lower-end housing prices in the UK. Furthermore, Braakmann (2019) suggest there to be overcrowding in the immigrant regions. These findings align with the findings drawn by Sà (2015), Zhu et al. (2019), and Saiz and Wachter (2011).

In France, d'Albis et al. (2019) found no significant impact of immigration on house prices similar to Braakman (2019). However, d'Albis et al. (2019) noted the reverse effect of housing prices on immigration level, due to housing being a prerequisite for a permanent residency. Furthermore, Wong et al. (2022) identified a positive correlation in the Malaysian housing market. Wong et al. (2022) suggests factors like cultural appeal and a constrained supply of properties, similar to Moos

and Skaburskis (2010) and Saiz (2007). Lastly, Peng and Tsai (2019) finds a positive relationship between house prices and immigration in Taiwan. Gallin (2009) provides insight into the long-term effect the rent-to-house price ratio and finds that rent and house prices converge towards each other when faced with changes.

The body of research regarding the impact of immigration on the real estate market illustrates the diverse effects that immigration has on real estate dynamics. It reflects the complexity of how demographic shifts vary across different regions.

2.3 Policy implications on Immigration and the Real Estate Market

Governments look not only to help grow a nation's economy but to better the living conditions of their permanent residents and citizens. International migration continues to grow in popularity as more nations continue to expand, governments must continue to prioritize the needs and wellbeing of the local population. Such measures include imposing additional admission criteria to imposing restrictive policies.

In Europe, the UK has been a favoured destination among migrants. Migrants have a positive impact on the housing market when relocating from nations carrying greater political risk, as studied by Badarinza and Ramadorai (2018) on the UK market. The introduction of Brexit changed the landscape. Introduced in 2016, the UK officially exited the European Union. This event changed the economic and social landscape in the UK. Pavlov and Monfared (2017) find that the introduction of Brexit decreased the real estate market that included EU passport holders. More specifically, the uncertainty to EU passport holders lead them to reconsider their place in the UK (Pavlov and Monfared, 2017). Similarly, André et al. (2017) suggests that elevated levels of economic policy uncertainty result in a decrease in U.S. real estate returns.

Canada is renowned for their cultural diversity and inclusion in the nation. The attractive nature, paired with immigration favouring policies, continues to drive international migration. They contribute to the economy (Latif, 2015; Akbari and Haider, 2018; Dugan et al., 2012; Dugan et al., 2023) and have a positive impact on housing prices (Ley and Tutchener, 2001; Carter, 2005; Moos and Skaburskis, 2010; Akbari and Aydede, 2012).

However, this has raised concerns among natives with regards to affordability. Pavlov and Sommerville (2020) study the implications regarding changes to the investor immigrant program. The removal of policies and programs decreases immigrants' desire to move to such a location, resulting in the decrease of the surrounding housing market (Pavlov and Sommerville, 2020). More specifically, Pavlov and Sommerville (2020) find that “the unexpected suspension of the program had a negative impact on house prices of 1.7–2.6% in the neighborhoods and market segments most favored by the investor immigrants”.

Over the years, Vancouver and Ontario have imposed policies to try and tame their real estate market. Specifically, these are supplemental taxes on non-permanent residents. Du et al. (2022) discovers a drop in house prices in both regions following the implementation of these policies. Hartley et al.'s (2021) working paper supports and extends these findings by adding that the share of immigrants in the region contributes to this magnitude, in addition to the tax level that is imposed.

Policy implementation, despite being limiting, provides stability to natives and reduces the impact of international migrants on house prices.

2.4 REIT Performance

An extensive amount of research has been conducted on the impact immigration has on the real estate market, both on house prices and rent. However, there is scarce research study the impact of immigration on REITs operational performance.

From Hardin III et al. (2009) to Beracha et al. (2019) study on operational performance, REIT research has focused on understanding the dynamics driving stock performance and operational performance. Hardin III et al. (2009) find that REIT ownership increase rental revenue in the residential segment. Management expertise and ownership structure in REITs outperform non-REIT property owners (Hardin III et al., 2009). Furthermore, the structural aspect of REITs, including consultants and institutional investors, play an important role for REITs (Brockman et al., 2014). Brockman et al. (2014) finds that REITs advised by consultants perform worse leading up to 1993. Additionally, management strategically adjust their assets when they are considered more of burden operationally (Suzuki et al., 2023). On the other hand, Beracha et al. (2019) provide

insight on how operational styles can impact REITs performance. Inefficient operations in REITs, represented by high operational expense to revenue, will decrease operational performance (Beracha et al., 2019).

More specifically, executive management composition can influence REITs. Schrand et al. (2018) and Hogan and Huerta (2019) study the impact of corporate structure on REIT performance. However, both papers find conflicting results. Schrand et al. (2018) finds that gender diversity generates higher market performance but has no correlation with the operational aspect of the REIT. Hogan and Huerta (2019), on the other hand, find the operational performance to suffer when REITs emphasize gender and ethnic diversity.

In Canada, REITs are a growing field of research. Londerville (2002) investigates the dynamic of IPOs for Canadian REITs, finding there to be an underpricing. Regarding tax policy changes specific to REITs, Chamberlain and Shahriari (2012) determines there to be a negative impact in both 2005 and 2006. However, REITs find a way to rebound (Chamberlain and Shahriari, 2012). Additionally, August (2020) looks at REITs on the multi-family apartment sector in Canada.

REIT operational performance is analyzed through different metrics. Eicholtz and Yönder (2015) explores how CEO overconfidence can impact on operational metrics, such as net operating income and return on assets. Furthermore, Devine and Yönder (2023) studies the impact of environmental investments on REIT operational cash flows, including Rental Revenue, Rental operating expense, and net operating income. In Canada specifically, Yönder and Yücel (2022) study the impact of mobility on REIT operational cash flows.

REITs are known for their stability. However, the landscape can shift both through policy change and uncertain times, such as COVID. Charif et al. (2022) studies the impact of economic policy uncertainty on REITs and find that during normal and bull-markets, economic policy uncertain has a negative impact on REIT returns. Both Yönder and Yücel (2022) and Cai and Xu (2022) provide insight on REIT performance during COVID. Given the uncertainty around COVID, the government recommended and, in Canada's situation, imposed unexpected policies restricting mobility to deter the spread of the coronavirus (Yönder and Yücel, 2022). As a result, Yönder and Yücel (2022) discover that limitations in mobility decrease REIT performance. Alternatively, Cai and Xu (2022) look to determine the impact of COVID on varying property types.

REITs continue to be an important topic for researchers as they continue to grow within the financial landscape across different regions.

2.5 Research Contribution

To the best of my knowledge, there is little to no research conducted to study the impact of immigration on Canadian REIT operational performance. This study looks to provide novel results to this area of research. Furthermore, we look to present evidence on potential implications of foreign buyer real estate policies, imposed by provincial and federal governing bodies, have on REITs performance.

3. Data Collection & Sample Selection

For this study, I begin by collecting quarterly provincial Canadian population and international migration data from the Q2 2010 until Q4 2022 using Statistics Canada's data registry. Secondly, I obtain the REIT property and financial data from S&P Global Market Intelligence during the same timeframe. Using this data, I begin to build the sample for my research topic. Quarterly data is used as Statistics Canada does not provide daily data on immigration. My sample focuses on REITs with properties in Canada, ensuring that my analysis directly reflects the influence of Canadian International migration trends on the operational performance of Canadian public REITs.

3.1 Immigration Proportion

Statistics Canada has separated Canadian international migrants into 3 types: Immigrants, Emigrants, and non-net Permanent resident. According to Statistics Canada², all individuals classified as immigrants have been given permission to permanently live in Canada. Furthermore, Statistics Canada² justifies emigrants as individuals, allowed to live in Canada permanently, who have chosen to move outside of Canada. Finally, non-permanent residents are the individuals who have entered Canada on a temporary status, such as a work or student visa, or as a refugee, as mentioned in Statistics Canada². Through their database, I extract the quarterly provincial figures dating back from Q2 2010 until Q4 2022.

² Source: Statistics Canada (<https://www150.statcan.gc.ca/n1/pub/71-607-x/71-607-x2019036-eng.htm>)

Following the international migration data, I obtain the quarterly provincial population data from Statistics Canada. Using the methodology employed by Saiz (2007), Akbari and Aydede (2012) and Pavlov and Somerville (2020), I standardize each type of international migration. I divide the different migration type data by the respective geographic population. This will give us a representation of the proportion of varying types of migration. This will mitigate the regional discrepancy as level of immigration flow across Canadian provinces can vary drastically. The following equation (1) calculates the immigration proportion across each province:

$$Migration\ Proportion_{j,z} = \frac{Migration_{j,z}}{Population_{j,t-1}} \quad (1)$$

where j denotes the province, z denotes the type of international migrant and t denoted the year-quarter t .

In Figure 1, I display the yearly immigration proportion across Canada. The Canadian heatmap displays the yearly proportion, computed in equation 1 but on an annualized basis, from 2011 until 2022.

– *Insert Figure 1* –

The figure shows continued yearly immigration. During COVID, given travel restrictions, there is a drastic decrease in immigration across Canada.

In Figure 2, I display the yearly Net Non-Permanent Residents proportion across Canada. Similar to figure 1, the Canadian heatmap displays the yearly proportion, computed in equation 1 but on an annualized basis, from 2011 until 2022.

– *Insert Figure 2* –

The figure shows that Net non-permanent residents, despite showing decrease in Western Canada, continue to enter Canada. As observed above, COVID not only decreased non-permanent resident inflow but increase the amount of 2020 non-permanent residents who lived in Canada. In section 4.2, I elaborate on the REIT-level characteristics obtained.

3.2 REIT Characteristics and financials

Through S&P Global Market Intelligence, I extract Canadian public REITs. I exclude the public REITs that do not hold any Canadian properties, resulting in a sample of 29 Canadian public REITs. Firstly, I obtain the property characteristics for each one through S&P Global Market Intelligence. This includes the property location, date of acquisition, date of disposition, property type and the total property size of each public REIT. Secondly, I obtain the balance sheet financials. I gather the Total Assets, Total Debt, Cash and cash equivalents and Market-to-Book value of assets.

3.3 REIT Proportion

Using REIT-level characteristics mentioned in section 4.2, I use a similar methodology employed by Devine and Yönder (2023) and Yönder and Yücel (2022). Both paper use property level data to determine the proportion represented by individual public REIT.

First, I begin by creating a portfolio matrix that indicates whether a specific property held by the public REIT is present in a quarter year. Should the property be present in a quarter-year, I allocate a value of 1. Secondly, I multiply each property size by its respective portfolio matrix. I aggregate the total provincial portfolio size, both with respect to the quarter and the individual REIT. Finally, I compute the total quarterly portfolio size for each REIT.

Using the data obtained from section 4.1 and the data computed in the paragraph above, I calculate the weighted average immigration provincial portfolio for each REIT and each quarter. The following equation (2) describes the exposure to immigration:

$$Exposure\ to\ Migration_{i,z,t} = \frac{\sum_j Migration\ Proportion_{j,z} \times Sqft_{i,j,t}}{\sum Sqft_{i,t}} \quad (2)$$

where i represents individual REIT i , j represents the province j , z represents the type of international migrant z and t represents the quarter t .

3.4 REIT operational performance

Extending on the REIT-level financials data mentioned in section 3.2, I establish four key metrics to determine operational performance. I extract from S&P Global Intelligence the rental revenue, rental operating expenses, and net operating income (NOI), similarly to the operational cash flow metrics used by Devine and Yönder (2023) and Yönder and Yücel (2022). Lastly, I extract the Adjusted FFO to study the impact to shareholders.

4. Data Description & Methodology

4.1 Data Description

Table 1 presents the summary statistics of my final sample. There are a total of 1236 public REIT quarter-years in my test sample. All the financial metrics, excluding the Market-to-Book value of assets, are normalized by the total assets with respect to REIT i and year-quarter t .

– *Insert Table 1* –

The initial five exposure metrics denote my key variables of interest. I observe an average Exposure to Immigration of 0.18%. The Exposure to Emigrants, Exposure to Returning Emigrants and Exposure to Temporary Emigrants are on average 0.03%, 0.01% and 0.06% respectively. Lastly, the Exposure to Net Non-Permanent Residents represents an average of 0.06%.

The average total assets are \$4.36 Billion. Furthermore, Debt-to-Asset and Cash-to-Asset ratios are both 54.37% and 2.31% respectively. The Rental Revenue-to-Asset Ratio, Opex-to-Asset and NOI-to-Asset operational cash flow metrics are all, respectively, on average 2.23%, 0.82% and 1.41%. Finally, the Adjusted FFO is on average 0.73 and has a smaller sample of 1063 due to unavailable data from S&P Global Intelligence.

4.2 Methodology

4.2.1 International migration impact on REITs

Similar to Yönder and Yücel (2022), I establish a regression model to examine the impact of Canadian international migrants on Canadian public REIT operational performance. Using the

exposure to immigration metric from section 4, I incorporate it into equation (3) to study the impact it carries on public REIT operational performance.

$$Y_{i,t} = \beta_0 + \beta_1 ExptoMig_{i,z,t} + \beta_2 X_{i,t-1} + \gamma_t + \delta_i + \varepsilon_{i,t} \quad (3)$$

where $Y_{i,t}$ represents Rental Revenue-to-Asset, Rental Operating Expense-to-Asset, NOI-to-Asset and Adjusted FFO-to-Asset with respect to REIT i and year-quarter t . $ExptoMig_{i,t}$, present in equation (2) and my variable of interest, represents the weighted exposure to migration with respect to international migration type z , REIT i and year-quarter t . $X_{i,t-1}$ represents the lagged control variables. These include the natural logarithm of total assets, debt-to-total asset ratio, cash-to-asset ratio, and the Market-to Book ratio, with respect to REIT i . Furthermore, I control for the time and property type fixed effects. All standard errors are heteroskedasticity robust and clustered by public REIT.

Given that immigrants arriving to Canada stimulate both the real estate market and the economy, I anticipate there to be a positive relationship between the $ExptoMig_{immigration}$ and the operational performance metrics of REITs. Additionally, given that emigrants and temporary emigrants represent permanent residents choosing to depart from Canada, I expect both $ExptoMig_{emigrants}$ and $ExptoMig_{Temporary\ Emigrants}$ to have a negative relationship with the operational performance metrics of REITs. On the other hand, returning emigrants represent individuals returning on a permanent basis and contributing to the Canadian market. Therefore, I expect there to be a positive interaction between $ExptoMig_{returning\ emigrants}$ and the operational performance of REITs. Finally, net non-permanent residents represent the change in non-permanent residents. When the net variable is greater than 0, the inflow of non-permanent resident from abroad dominates the outflow. This implies that there are more net non-permanent residents contributing to the general Canadian economy. As a result, I hypothesize that $ExptoMig_{net\ non-permanent\ residents}$ has a positive relationship with REIT operational performance.

4.2.2 Policy implications on international migration and REITs operational performance

Using similar methods employed by Pavlov and Sommerville (2020) and Yönder and Yücel (2022), I establish a Difference-in-Difference (DiD) regression. The model looks to study the

impact of international migration to Canada on Canadian REIT operational performance following the implementation of a foreign buyer housing tax.

As mentioned in Pavlov and Sommerville (2020), British Columbia is a favored destination amongst Asian, particularly the Chinese. The inflow of such migrants has led housing prices to climb considerably. As a result, the Legislative Assembly of the Province of British Columbia implemented Bill-28 in August of 2016. This bill attempts to increase affordability in the real estate market by imposing a vacancy and foreign buyer tax.

On the other hand, Ontario is the most attractive provincial destination amongst international migrants. They represented approximately 45% of the total Canada international migrants in 2022. Comparably to British Columbia, this considerable inflow of international migrants has decreased the affordability of Ontario's real estate market. As a results, the Ontario government introduced the Non-Resident Speculation Tax (NRST) in April of 2017. All purchases by non-permanent residents/non-citizens were subject to paying a supplemental tax. The objective, similar to BC, is to increase the affordability of Ontario's real estate market.

To understand the influence on both individual policies on their respective regions, I build a DiD model. Using the MLS House Price Index (HPI) composite from the Canadian Real Estate Association, I establish the following equation (4):

$$HPI\ Composite_{i,t} = \beta_0 + \beta_1 X_{i,t} + \beta_2 X_{i,t} \times PostPolicy_i + \gamma_t + \delta_i + \varepsilon_{i,t} \quad (4)$$

Where HPI Composite represents the quarterly house price index returns with respect to province i and year-quarter t . X represents the province i . $PostPolicy$ represents the dummy variables for the period following the implementation of the respective policy to the region i . I control for the province and time fixed effects. Given findings from Du et al. (2022) and the working paper of Hartley et al. (2021), I anticipate that the interaction term between the province and its specific policy will have a negative relationship on HPI Composite returns.

Following equation (3) in section 5.2.3, I use the same exposure to migration metric. Additionally, I incorporate a weighted public REIT residential exposure to migration variable for Ontario and BC. The following equations (5) and (6) present the DiD model used to study the impact of such policies:

$$y_{i,t} = \beta_0 + \beta_1 \text{ExptoMig}_{i,t} + \beta_2 \text{BC Resi ExptoMig}_{i,t} + \beta_3 \text{Exp toMig}_{i,t} \times \text{PostBill28} + \beta_4 \text{BC Resi Exp toMig}_{i,t} \times \text{PostBill28} + \beta_5 x_{i,t-1} + \gamma_t + \delta_i + \varepsilon_{i,t} \quad (5)$$

$$y_{i,t} = \beta_0 + \beta_1 \text{ExptoMig}_{i,t} + \beta_2 \text{ONT Resi ExptoMig}_{i,t} + \beta_3 \text{ExptoMig}_{i,t} \times \text{PostNRST} + \beta_4 \text{ONT Resi ExptoMig}_{i,t} \times \text{PostNRST} + \beta_5 x_{i,t-1} + \gamma_t + \delta_i + \varepsilon_{i,t} \quad (6)$$

where $Y_{i,t}$ represents the aforementioned public REIT operational performance metrics with respect to REIT i and year-quarter t . $\text{ExptoMig}_{i,t}$, represents the weighted exposure to Net Non-Permanent Resident. $\text{BC Resi ExptoMig}_{i,t}$ and $\text{ONT Resi ExptoMig}_{i,t}$ represent the weighted residential REIT exposure to Net Non-Permanent Resident for both British Columbia and Ontario respectively. PostBill28 and PostNRST represents dummy variables for the period following the implementation of the policies for British Columbia and Ontario respectively. $X_{i,t-1}$ represents the lagged control variables. Lastly, I control for the time and property type fixed effects. Given results found by Pavlov and Sommerville (2020) on transaction volume, I anticipate that the $\text{ONT Resi ExptoMig}_i$ and $\text{BC Resi ExptoMig}_i$ will have a negative relationship with public REIT operational performances, following the implementation of the respective policies.

5. Results

5.1 Effect of the exposure to migrant on REIT Performance

I begin by studying the impact of various immigration types on public REIT operational performance metrics. My first regression focuses on immigration as the type of international migrant. The results are illustrated in Table 2. Column (1) represents the Rental Revenue to Asset, Column (2) represents the Rental Operating Expense to Asset, Column (3) represents Net Operating Income (NOI) to Asset, and Column (4) represents the Adjusted Fund from Operation (Adjusted FFO) to Asset.

- Insert Table 2 -

I discover that exposure to immigration has no significant impact across Column (1) and Column (2). However, I find that exposure to immigration has a significant impact on Column (3) and Column (4), significant at the 10% and the 5% level respectively. A 1% increase in REIT exposure to immigration increases NOI-to-Asset by 0.544% and Adjusted FFO-to-Assets by 1.471%. My

finding suggest that immigrants can positively contribute to the net operational performance of Canadian public REITs that hold properties in locations with a higher exposure to this type of international migrant. Furthermore, the findings behind Adjusted FFO-to-Asset indicate that shareholders benefit from REITs holding properties in location subject to higher immigration.

For the control variables, the natural logarithm of Total Asset indicates an increase of 1% results in NOI-to-Asset decreasing by 0.026% and Adjusted FFO-to-Asset increasing by 0.033%, both significant at the 10% level. These results indicate a surprising dynamic. When Total assets increase, this results in a decrease in NOI-to-Asset due to increased operating costs. However, the opposite relationship is observed with Adjusted FFO-to-Asset indicating that an increase in Total assets, in the previous period, could result in greater potential add-backs from Depreciation & Amortization in the following period. Another suggestion is that REITs could opt to decrease their capital expenditures, as a result of increasing their Total Assets the previous period.

Secondly, a 1% increase in the Debt-to-Asset ratio results in an increase of 0.008% in Rental Revenue-to-Asset, an increase of 0.01% in Rental Operating Expense-to-Asset and a decrease of 0.013% in Adjusted FFO-to-Asset. These results are significant at the 5%, 1% and 1% level respectively. This implies that REITs with higher leverage ratios generate higher rental revenue, incur higher rental operating expenses, and decrease the funds available to shareholders. The Cash-to-Asset yields a negative influence on NOI-to-Asset and Adjusted FFO-to-Asset. I observe that a 1% increase in Cash-to-Asset decreases NOI-to-Asset by 0.010% and Adjusted FFO-to-Asset by 0.013%, significant at the 1% and 5% level respectively. These findings suggest that REITs that hold cash reserves perform worse operationally. Lastly, the market-to-book value has a positive correlation with Adjusted FFO-to-Asset. A 1% increase in Market-to-book value increases the value of Adjusted FFO-to Asset by 1.48%, significant at the 1% level. This finding suggests that REITs with higher market value of assets might either capture capital gain from the disposal of assets or a better credit rating and lower interest rate costs.

In the second regression, I focus on emigrants as the type of international migrant. The column distribution is identical to Table 2. The exposure is presented by the variable exposure to emigrants.

– *Insert Table 3* –

I find that exposure to emigrants has no significant impact across Column (1), Column (2), and Column (3). However, I find an impact on Column (4), significant at a 5% level. It indicates that a 1% increase in REIT exposure to emigrant increases Adjusted FFO-to-Assets by 9.261%. These results are quite surprising. I would expect the increase of emigrants to decrease value to shareholders. These findings would suggest that REITs could be actively managing their risk in locations exposed to emigrants by implementing longer lease period, which would provide needed stability to the funds available to shareholder. Furthermore, REITs could also be actively rebalancing their assets to ensure a stability in the funds available to shareholders.

The natural logarithm of Total Asset indicates similar to Table 2, with the exception of Adjusted FFO-to-Asset. An increase of 1% results in NOI-to-Asset decreasing by 0.028%, significant at the 5% level. Furthermore, Debt-to-Asset hold similar results to Table 2. A 1% increase results in an increase of 0.008% in Rental Revenue-to-Asset, an increase of 0.01% in Rental Operating Expense-to-Asset and a decrease of 0.012% in Adjusted FFO-to-Asset. These results are significant at the 5%, 1% and 1% level respectively. The Cash-to-Asset yields similar results to Table 2 with regards to NOI-to-Asset and Adjusted FFO-to-Asset. A 1% increase in Cash-to-Asset decreases NOI-to-Asset by 0.010% and Adjusted FFO-to-Asset by 0.030%, significant at the 1% and 5% level respectively. Lastly, similar results are observed for the Market-to-Book value.

In the third regression, I focus on returning emigrants as the type of international migrant. The column distribution is identical to Table 2. The exposure is presented by the variable exposure to returning emigrants.

– *Insert Table 4* –

I find that exposure to returning emigrants has no significant impact across Column (1), Column (2), and Column (3). However, I find an impact on Column (4), significant at a 1% level. I show that a 1% increase in REIT exposure to returning emigrant increases Adjusted FFO-to-Assets by 13.082%. This suggests that when emigrants return to Canada, there is a significant increase in value to shareholders of REITs holding properties in location subject to higher returning emigrants. Findings for the control variables are consistent with the ones from emigrants in Table 3.

My fourth regression focuses on temporary emigrants as the type of international migrant. The column distribution is identical to Table 2. The exposure is presented by the variable exposure to temporary emigrants.

– *Insert Table 5* –

Similar to emigrants and returning emigrants, I find that exposure to temporary emigrants has no significant impact across Column (1), Column (2), and Column (3). However, Column (4) indicates that exposure to temporary emigrants has a positive relationship with Adjusted FFO-to-Assets, significant to a 1% level. A 1% increase in REIT exposure to returning emigrant increases Adjusted FFO-to-Assets by 21.996%. Similar to the results in table 3, this would indicate consistent actions taken by REITs to ensure stability in the funds to shareholders. The large magnitude of this impact comes from the significantly smaller values from the exposure to temporary emigrant variable. Findings for the control variables are consistent with the ones from emigrants in table 3 and returning emigrants in table 4.

My fifth regression focuses on Net Non-Permanent Residents (NPR) as the type of international migrant. The column distribution is identical to Table 2. The exposure is presented by the variable exposure to Net Non-Permanent Resident.

– *Insert Table 6* –

I discover that exposure to Net Non-Permanent Resident has an impact in Column (1). A 1% increase in exposure to Net Non-Permanent Resident increases Rental Revenue-to-Asset by 0.865%, significant at a 5% level. I discover that Net non-Permanent Resident has no significant impact in Column (2). However, I find that exposure to immigration has a significant and positive impact on Column (3) and Column (4), significant at the 1% and the 5% level respectively. I show that a 1% increase in REIT exposure to Net Non-Permanent Residents increases NOI-to-Asset by 0.662% and Adjusted FFO-to-Assets by 1.133%. Comparably to the findings in Table 2, These findings suggest that the non-permanent resident cohort of international migrants has a significant contribution to Canadian REITs. When the NPR inflow is greater than the outflow, I observe REITs with more exposure to locations of such international migrants are likely to see their Rental Revenue-to-Asset, Net Operating Income-to-Asset and Adjusted FFO-to-Asset. These

international migrants contribute significantly to the operational performance of Canadian REITs and their shareholders.

Similar to Table 2, the natural logarithm of Total Asset indicates a weak significant impact on NOI-to-Asset and Adjusted FFO-to-Asset. The other control variables yield similar results to Table 2. The sole difference, with regards to significance, is that the Debt-to-Asset ratio has a 1% significant and positive impact on Rental Revenue-to-Asset.

As the exposure to Net Non-Permanent Resident has the largest degree of significance amongst all other types of immigration, I look to further study this variable. In section 6.2, I look to establish the impact net non-permanent residents has on REIT operational performance following the implementation of restrictive policies.

5.2 Effect of Immigration Proportion on REIT Performance in British Colombia and Ontario

To understand the dynamics, I study the impact of Bill-28 and NRST on the Canadian HPI Composite. To understand the true impact of each policy, I exclude the COVID period from Q2 2010 until Q4 2022. Using the quarterly returns, I conduct an OLS regression on equation (4). The results are illustrated in Table 7. Column (1) represents British Colombia regression and Column (2) represents the Ontario regression.

– *Insert Table 7* –

I find that the province of British Colombia (BC) has a positive impact on the HPI composite returns, significant at the 1% level. The province of British Colombia yields a 1.11% increase in HPI Composite quarterly returns. The policy implication is represented by the interaction term between the British-Colombia fixed effect and the Post-Bill 28 dummy variable. This variable has an inverse correlation with HPI composite Returns, significant at the 1% level. The province of British Colombia, post-Bill 28, indicates a decrease of 1.78% in HPI Composite Returns.

Similar to BC, I find that the province of Ontario has a positive impact on the HPI composite returns, significant at the 1% level. The province of Ontario yields a 1.63% increase in HPI Composite returns. The policy implication is represented by the interaction term between the Ontario fixed effect and the Post-NRST dummy variable. This variable has an inverse correlation

with HPI composite Returns, significant at the 1% level. The province of Ontario, post-NRST, indicates a decrease of 2.33% in HPI Composite Returns.

The implementation of the Bill-28 and NRST suggests that the policy had a negative impact on the residential housing market in BC and Ontario respectively. This decrease in residential housing prices should be aligned with a decrease in demand in those regions. These findings align with findings from Du et al. (2022) and Hartley et al.'s (2021) working paper.

Having established a link between the policy impact and the residential housing market, I follow-up by studying British Columbia residential exposure to Net Non-Permanent Resident's impact on REIT performance, following the implementation of these policies. The variable of interest is the interaction between exposure of Net Non-Permanent Resident BC Residential and Post-Bill 28. Table 8 follows the same structure as Table 2. The regression results of equation (5) are illustrated in Table 8.

– Insert Table 8 –

I find that exposure to Net Non-Permanent Resident BC Residential positively impacts columns (1) through (4), significant at the 1% and 5% levels. A 1% increase in exposure to Net Non-Permanent Resident BC Residential results in Rental Revenue-to-Asset to increase by almost 25%, Rental Operating Expense-to-Asset to increase by close to 8%, NOI-to-Asset to increase by nearly 17%, and Adjusted FFO-to-Asset to increase by 30.22%. Following the implementation of Bill-28, I discover that the interaction between Net Non-Permanent Resident BC Residential has a negative relationship with columns (1) through (4), significant at the 1% and 5% levels. A 1% increase in exposure to Net Non-Permanent Resident BC residential results in Rental Revenue-to-Asset decreasing by approximately 29%, Rental Operating Expense-to-Asset decreasing by close to 12%, NOI-to-Asset decreasing by nearly 16%, and Adjusted FFO-to-Asset to decreasing by 31%. These findings suggest that, following the implementation of Bill-28, REITs holding more residential properties in British Columbia are highly sensitive to Net NPR and are subject to heavier decline in operational performance.

One possible explanation to the shock relates to the findings in Table 8. As previously mentioned, the implementation of Bill-28 resulted in a decrease to the residential housing market. This

indicates a decrease in the demand for residential properties. Furthermore, Bill-28, in addition to the non-permanent resident tax, stipulates a vacancy tax will also take effect. As prices begin to decline, property owners are less likely to sell and would consider renting out their properties. This effect, in addition to vacant properties being forcefully listed on the rental market to avoid any taxation, would create a positive supply shock in the rental market. As a result, we would see rental prices to decline.

Given these results, I continue by examining the NRST policy implications. Specifically, I study the impact of the Ontario residential exposure to Net Non-Permanent Resident's impact on REIT performance, following the implementation of these policies. My variable of interest is the interaction between exposure of Net Non-Permanent Resident Ontario Residential and Post-NRST. The regression results of equation (6) are illustrated in Table 9.

– *Insert Table 9* –

I find that exposure to Net Non-Permanent Resident Ontario Residential positively impacts columns (3), significant at the 10% levels. Column (1), Column (2) and Column (3) yield insignificant results. Following the implementation of Bill-28, I discover that the interaction between Net Non-Permanent Resident Ontario Residential has a negative relationship with columns (1) through (3), significant at the 1% levels. Therefore, a 1% increase in exposure to Net Non-Permanent Resident results in Rental Revenue-to-Asset decreasing by 5.932%, Rental Operating Expense-to-Asset decreasing by 2.661%, and NOI-to-Asset decreasing by 3.25%. No significant results are observed in Column (4). Similar to Bill-28 impact on REITs operational performance, these findings suggest that REITs holding more residential properties in Ontario suffer declines in their operational performance when there is a high level of net non-permanent residents flowing into Ontario.

6. Conclusion

Immigration continues to be a driving factor for nations. Immigrants entering Canada play a vital role for the economy, especially in the real estate market (Akbari and Aydede, 2012; Akbari and Haidar, 2018). This research studies the impact of international migrants on the operation performance of Canadian REITs. Initially, I begin by creating a sample set using Canadian public

REITs and immigration figures from S&P global market intelligence and Statistics Canada, respectively. I obtain my exposure-to-migration metrics to represent the impact of migration from Q2 2010 until Q4 2022. I discover that immigrants have a positive but slightly significant impact on net operating income and adjusted FFO. Emigrants, on the other hand, have no impact across most operational metrics, apart from Adjusted FFO. Net non-permanent residents indicate there to be a positive impact in rental revenue, net operating income and adjusted FFO. Additionally, I explore this relationship with net non-permanent residents by studying the impact of policy implication on the operational performance. A negative relationship is observed post-implementation for both REITs holding residential properties in Vancouver and Ontario.

Although findings in this paper provide insight of the impact of net non-permanent residents on Canadian REITs, limitations are to be considered. One limitation was the limited availability of international migration data on a city level. Currently, Statistics Canada only has quarterly data on a provincial.

Future research can explore the impact of various types of migration on specific property types held by REITs. While my research studies the impact of policy on the operational performance, examining whether there might be a spillover effect in a neighbouring province, would be interesting, similar to Mussa et al. (2017).

This research contributes to literature regarding factors impacting REIT operational performance. More specifically, my research looks to provide insight on how international migration contributes to these institutions as the topic has, to the best of my knowledge, little to no research conducted on it. Furthermore, this research could help REITs in selecting the appropriate asset allocation strategies. Should they choose to rebalance a specific segment of their property portfolio, it would be wise to consider a location favoured by international migration. Finally, these findings indicate a complex dynamic with regards to policy implementation. The findings would prepare REITs in the event that policy implementation becomes a topic of discussion.

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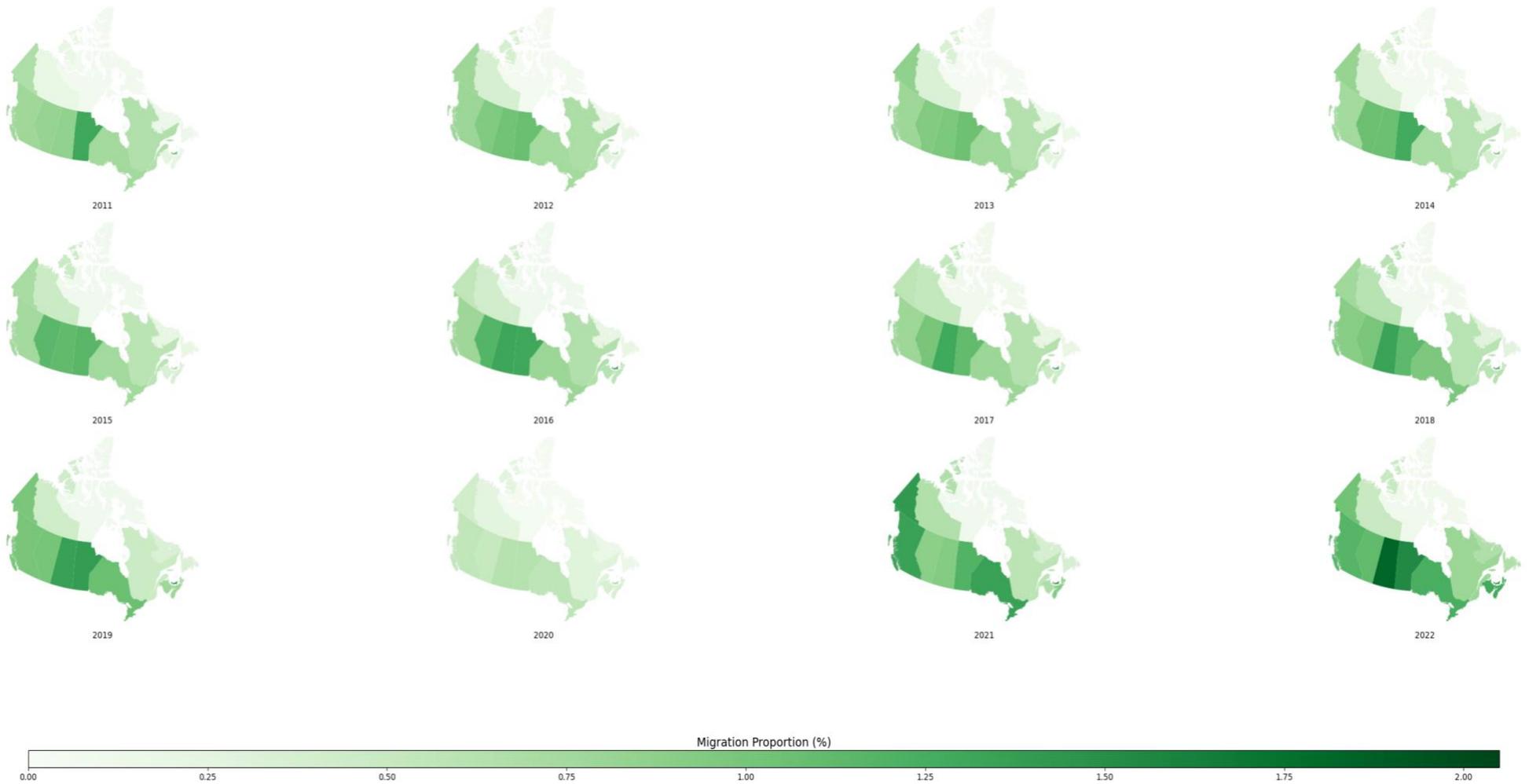
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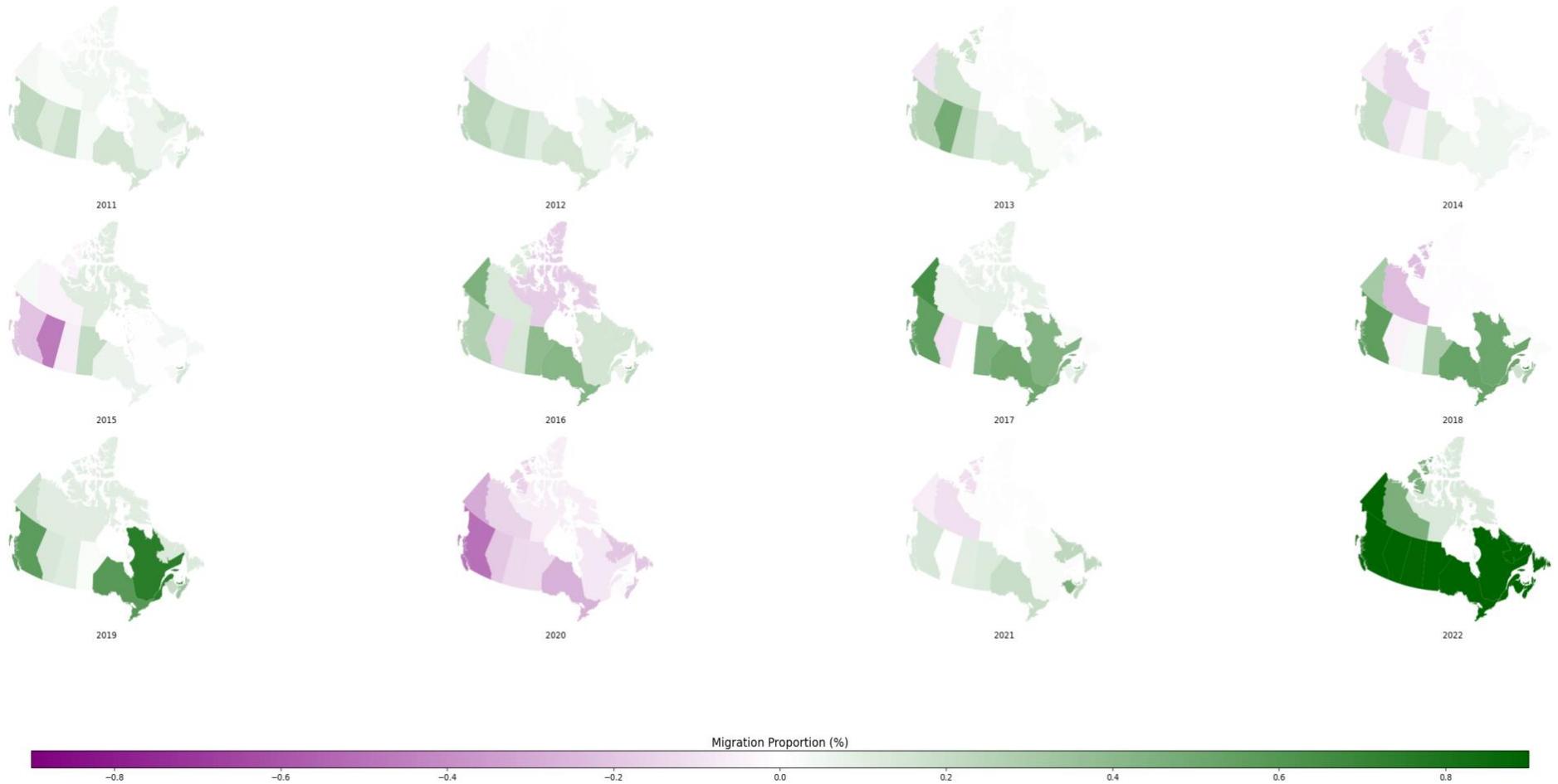
Appendices

Figure 1. Yearly Immigration Proportion from 2011 and 2022



The figure presents the Immigration Proportion from 2011 until 2022. A darker shade of green indicates greater immigration to that province.

Figure 2. Yearly Net Non-Permanent Residents Proportion from 2011 and 2022



The figure presents Net Non-permanent Resident Proportion from 2011 until 2022. The dark green shade represents an inflow of Net Non-Permanent Residents. The purple shade represents an outflow of Net Non-Permanent Residents. The darker either shade is, the greater the magnitude.

Table 1. Descriptive Statistics

Variable	N	Mean	SD	Min	Max
Exposure to Immigration (%)	1236	0.18	0.08	0.01	0.41
Exposure to Emigrants (%)	1236	0.03	0.01	0.01	0.07
Exposure to Returning Emigrants (%)	1236	0.02	0.01	0.00	0.06
Exposure to Temporary Emigrants (%)	1236	0.01	0.01	0.01	0.03
Exposure to Net Non-Permanent Residents (%)	1236	0.06	0.13	-0.19	0.65
Total Assets (\$ Billion)	1236	4.36	4.37	0.01	18.12
Debt-to-Asset (%)	1236	54.37	22.88	0.03	221.49
Cash-to-Asset (%)	1236	2.31	6.64	0.00	72.04
Market-to-Book	1236	1.00	0.19	0.25	2.46
Rental Revenue-to-Asset (%)	1236	2.23	0.48	0.41	4.51
Rental operating Expense-to-Asset (%)	1236	0.82	0.36	0.02	3.00
NOI-to-Asset (%)	1236	1.41	0.30	0.12	2.90
Adjusted FFO-to-Asset (%)	1063	0.73	0.40	-6.64	1.60

This table represents the descriptive statistics of REITs for each quarter of my sample between Q2 2010 and Q4 2022.

Table 2. Immigration impact on Operational Performance

Variables	(1) Rental Revenue	(2) Rental operating Expense	(3) NOI	(4) Adjusted FFO
ExptoMig _{Immigration}	0.102 (0.729)	-0.445 (0.524)	0.544* (0.310)	1.471** (0.558)
Ln(Total Asset)	-0.025 (0.041)	-0.002 (0.039)	-0.026* (0.013)	0.033* (0.017)
Debt-to-Asset	0.008** (0.003)	0.010*** (0.003)	-0.002 (0.001)	-0.013*** (0.004)
Cash-to-Asset	-0.004 (0.005)	0.005 (0.004)	-0.010*** (0.003)	-0.030** (0.012)
Market-to-Book	0.029 (0.340)	-0.165 (0.269)	0.200 (0.130)	1.480*** (0.375)
Time-Period FE	Yes	Yes	Yes	Yes
Property Type FE	Yes	Yes	Yes	Yes
Observations	1236	1236	1236	1063
R-Squared	0.489	0.591	0.533	0.523

The table presents the regression results for the exposure to immigration, Total Assets, Debt, Cash, and Market-to-Book value on REIT operational performance for the period between 2010 Q2 and 2022 Q4. Firm clustered robust standard errors are shown in parentheses. Significance is denoted by: * p<0.1; ** p<0.05; *** p<0.01.

Table 3. Operational Effects of Emigrants

Variables	(1) Rental Revenue	(2) Rental operating Expense	(3) NOI	(4) Adjusted FFO
ExptoMig _{Emigrants}	0.017 (4.616)	-2.224 (3.774)	2.200 (1.849)	9.261** (3.389)
Ln(Total Asset)	-0.026 (0.041)	0.001 (0.039)	-0.028** (0.013)	0.022 (0.016)
Debt-to-Asset	0.008** (0.003)	0.010*** (0.003)	-0.001 (0.001)	-0.012*** (0.004)
Cash-to-Asset	-0.004 (0.005)	0.005 (0.004)	-0.010*** (0.003)	-0.030** (0.012)
Market-to-Book	0.019 (0.348)	-0.138 (0.281)	0.163 (0.124)	1.388*** (0.357)
Time-Period FE	Yes	Yes	Yes	Yes
Property Type FE	Yes	Yes	Yes	Yes
Observations	1236	1236	1236	1063
R-Squared	0.489	0.590	0.529	0.525

The table presents the regression results for the exposure to emigrants, Total Assets, Debt, Cash, and Market-to-Book value on REIT operational performance for the period between 2010 Q2 and 2022 Q4. Clustered robust standard errors are reported in parentheses. Significance is denoted by: * p<0.1; ** p<0.05; *** p<0.01.

Table 4. Operational Effects of Returning Emigration

Variables	(1) Rental Revenue	(2) Rental operating Expense	(3) NOI	(4) Adjusted FFO
ExptoMig _{Returning Emigrants}	0.534 (5.753)	-3.085 (4.574)	3.499 (2.440)	13.082*** (4.316)
Ln(Total Asset)	-0.026 (0.041)	0.001 (0.039)	-0.028** (0.013)	0.025 (0.016)
Debt-to-Asset	0.008*** (0.003)	0.010*** (0.003)	-0.001 (0.001)	-0.012*** (0.004)
Cash-to-Asset	-0.004 (0.005)	0.005 (0.004)	-0.010*** (0.003)	-0.030** (0.012)
Market-to-Book	0.023 (0.346)	-0.143 (0.279)	0.171 (0.127)	1.426*** (0.363)
Time-Period FE	Yes	Yes	Yes	Yes
Property Type FE	Yes	Yes	Yes	Yes
Observations	1236	1236	1236	1063
R-Squared	0.489	0.590	0.531	0.529

The table presents the regression results for the exposure to returning emigrants, Total Assets, Debt, Cash, and Market-to-Book value on REIT operational performance for the period between 2010 Q2 and 2022 Q4. Clustered robust standard errors are reported in parentheses. Significance is denoted by: * p<0.1; ** p<0.05; *** p<0.01.

Table 5. Operational Effects of Temporary Emigrants

Variables	(1) Rental Revenue	(2) Rental operating Expense	(3) NOI	(4) Adjusted FFO
ExptoMig Temporary Emigrants	0.153 (9.254)	-5.355 (7.843)	5.417 (3.722)	21.996*** (7.551)
Ln(Total Asset)	-0.026 (0.041)	-0.000 (0.039)	-0.027** (0.013)	0.027 (0.015)
Debt-to-Asset	0.008*** (0.003)	0.009*** (0.003)	-0.001 (0.001)	-0.012*** (0.004)
Cash-to-Asset	-0.004 (0.005)	0.005 (0.004)	-0.009*** (0.002)	-0.029** (0.012)
Market-to-Book	0.019 (0.346)	-0.125 (0.283)	0.149 (0.121)	1.314*** (0.348)
Time-Period FE	Yes	Yes	Yes	Yes
Property Type FE	Yes	Yes	Yes	Yes
Observations	1236	1236	1236	1063
R-Squared	0.489	0.591	0.531	0.540

The table presents the regression results for the exposure to temporary emigrants, Total Assets, Debt, Cash, and Market-to-Book value on REIT operational performance for the period between 2010 Q2 and 2022 Q4. Clustered robust standard errors are reported in parentheses. Significance is denoted by: * p<0.1; ** p<0.05; *** p<0.01.

Table 6. Operational Effects of Net Non-Permanent Residents

Variables	(1) Rental Revenue	(2) Rental operating Expense	(3) NOI	(4) Adjusted FFO
ExptoMig _{Net Non-Permanent Residents}	0.865** (0.417)	0.186 (0.390)	0.662*** (0.226)	1.133** (0.433)
Ln(Total Asset)	-0.024 (0.041)	0 (0.039)	-0.025* (0.013)	0.033* (0.018)
Debt-to-Asset	0.009*** (0.003)	0.009*** (0.003)	-0.001 (0.001)	-0.011** (0.004)
Cash-to-Asset	-0.004 (0.005)	0.005 (0.005)	-0.009*** (0.002)	-0.029** (0.012)
Market-to-Book	0.002 (0.345)	-0.123 (0.283)	0.132 (0.122)	1.334*** (0.372)
Time-Period FE	Yes	Yes	Yes	Yes
Property Type FE	Yes	Yes	Yes	Yes
Observations	1236	1236	1236	1063
R-Squared	0.495	0.588	0.535	0.506

The table presents the regression results for the exposure to Net Non-Permanent Residents, Total Assets, Debt, Cash, and Market-to-Book value on REIT operational performance for the period between 2010 Q2 and 2022 Q4. Clustered robust standard errors are reported in parentheses. Significance is denoted by: * p<0.1; ** p<0.05; *** p<0.01.

Table 7. Policy impact of Bill 28 and NRST on the Canadian Housing Price Index

	(1) HPI Composite Returns	(2) HPI Composite Returns
BC	1.108*** (0.125)	
BC x Post-Bill 28	-1.777*** (0.419)	
ONT		1.632*** (0.130)
ONT x Post-NRST		-2.332*** (0.517)
Time FE	Yes	Yes
Province FE	Yes	Yes
Number of Observations	312	312
R-squared	0.365	0.372

The table presents the regression results for Ontario, British-Colombia on the HPI Composite returns for the period between 2010 Q2 and 2020 Q1. Clustered robust standard errors are reported in parentheses. Significance is denoted by: * p<0.1; ** p<0.05; *** p<0.01.

Table 8. Operational Effects of Net Non-Permanent Residents post Bill 28 in British Columbia

Variables	(1) Rental Revenue	(2) Rental operating Expense	(3) NOI	(4) Adjusted FFO
Exposure to Net Non-Permanent Resident	2.045* (1.054)	1.218 (0.735)	0.817 (0.655)	0.82 (1.061)
Exposure to Net Non-Permanent Resident BC Residential	25.491*** (9.132)	7.943** (3.573)	17.026** (7.711)	30.220** (13.246)
Exposure to Net Non-Permanent Resident x Post-Bill 28	-1.341 (1.337)	-1.124 (0.874)	-0.209 (0.680)	0.634 (1.088)
Exposure to Net Non-Permanent Resident BC Residential x Post-Bill 28	-29.150*** (7.665)	-12.907*** (3.249)	-15.739** (6.844)	-31.400*** (11.073)
Ln(Total Asset)	-0.019 (0.040)	0.002 (0.039)	-0.021 (0.013)	0.037* (0.019)
Debt-to-Asset	0.005 (0.003)	0.007* (0.004)	-0.002 (0.002)	-0.012*** (0.004)
Cash-to-Asset	-0.006 (0.005)	0.003 (0.005)	-0.009*** (0.003)	-0.032** (0.014)
Market-to-Book	-0.134 (0.323)	-0.234 (0.270)	0.102 (0.152)	1.559*** (0.449)
Time-Period FE	Yes	Yes	Yes	Yes
Property Type FE	Yes	Yes	Yes	Yes
Observations	923	923	923	814
R-Squared	0.442	0.535	0.526	0.545

The table presents the regression results for the exposure to Net Non-Permanent Residents, British-Colombia Residential exposure to Net Non-Permanent Residents, Total Assets, Debt, Cash, and Market-to-Book value on REIT operational performance for the period between 2010 Q2 and 2020 Q1. Clustered robust standard errors are reported in parentheses. Significance is denoted by: * p<0.1; ** p<0.05; *** p<0.01.

Table 9. Operational Effects of Net Non-Permanent Residents post NRST in Ontario

Variables	(1) Rental Revenue	(2) Rental operating Expense	(3) NOI	(4) Adjusted FFO
Exposure to Net Non-Permanent Resident	1.919** (0.926)	1.297 (0.792)	0.613 (0.534)	0.691 (1.094)
Exposure to Net Non-Permanent Resident Ontario Residential	2.900 (2.130)	0.168 (0.935)	2.715* (1.418)	5.497 (3.322)
Exposure to Net Non-Permanent Resident x Post-NRST	-1.067 (1.135)	-1.175 (0.796)	0.113 (0.550)	0.653 (1.110)
Exposure to Net Non-Permanent Resident Ontario Residential x Post-NRST	-5.932*** (1.674)	-2.661*** (0.903)	-3.250*** (1.068)	-2.176 (1.945)
Ln(Total Asset)	-0.019 (0.040)	0.002 (0.040)	-0.021 (0.013)	0.037* (0.018)
Debt-to-Asset	0.005 (0.003)	0.007* (0.003)	-0.002 (0.002)	-0.012*** (0.004)
Cash-to-Asset	-0.006 (0.005)	0.002 (0.005)	-0.009*** (0.003)	-0.032** (0.014)
Market-to-Book	-0.145 (0.318)	-0.241 (0.268)	0.098 (0.149)	1.532*** (0.453)
Time-Period FE	Yes	Yes	Yes	Yes
Property Type FE	Yes	Yes	Yes	Yes
Observations	923	923	923	814
R-Squared	0.447	0.542	0.527	0.550

The table presents the regression results for the exposure to Net Non-Permanent Residents, Ontario Residential exposure to Net Non-Permanent Residents, Total Assets, Debt, Cash, and Market-to-Book value on REIT operational performance for the period between 2010 Q2 and 2020 Q1. Clustered robust standard errors are reported in parentheses. Significance is denoted by: * $p < 0.1$; ** $p < 0.05$; *** $p < 0.01$.