

A SYSTEMS APPROACH TO HOUSING POLICIES

PAPER 2

HOUSING AS A SPATIAL, ECONOMIC SYSTEM: KEY OUTCOMES.

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PART I.

SCOPE AND PURPOSE

1. SYSTEMS, SCOPE, AND PURPOSE

This series of papers has adopted a complex systems approach (CSA) to understanding housing processes, outcomes, and effects (Maclennan and Long, 2023a). That approach is critical to understanding the economic, environmental, and social outcomes of housing systems and the consequences of the design and delivery, or governance, of housing policy.

A complex systems approach to policy can be as difficult as it is desirable. ‘Big’ systems, such as a nation or an economy, consist of a multiplicity of connected systems and sub-systems and cutting into that ‘Gordian Knot’ of complex connections can be done at different angles and different magnitudes of slice. The best approach, which will always retain a background recollection of where sub-systems were disconnected or isolated for more detailed assessment, will depend on purpose and perspective. The purpose here is assessing how housing outcomes shape economic change.

Housing connections that shape system effects can be conceptualised in different ways. They can be seen as allocation and resource systems, such as market versus planned systems, or as links from housing into major sectors of economic activity such as the labour market or the financial system. These are, as noted further below, important ways of exploring housing system effects. Here the concern is with housing systems as geographic or spatial systems that can be addressed at quite different geographic scales, from neighbourhood to national and global levels. This spatial lens on housing issues is particularly important because not only is housing, literally, grounded, and the centre of a household’s daily geography of activities but governments impose boundaries, often multiple boundaries on this complex, functional spatial system.

A preliminary report on the impacts of housing outcomes on economic change reviewed a wide range of literature on housing-economy connections (Maclennan et al, 2022). That literature review largely drew on either national (macro) or household (micro) scale research conclusions to draw attention to the need for more integrated housing system perspectives and policies. The core purpose of this follow-on paper is to understand better how housing processes and outcomes impact sub-national economic development (and how they might be best governed is discussed in Paper 3).

As housing systems demonstrably cohere with economic systems at sub-national scales, and particularly at regional/metropolitan and neighbourhood scales, then, within the CSA framework, sub-national, especially metropolitan and community, scales of understanding and governance become vital. Yet the roles of housing in shaping economic development at neighbourhood, metropolitan and regional scales often remain unrecognised and, still prompt surprise when their potential significance is recognised (Globe and Mail, March 2023). Housing is the key infrastructure in which daily economic lives are lived and integrated and it shapes our economic activities and their effectiveness in critically important ways.

Report Structure.

After the above introduction, PART I, and prior to drawing brief conclusions in PART V, three broad sets of questions exploring a systems perspective on the economic consequences of sub-national housing systems are addressed in the successive parts II, III, and IV of this review¹.

PART II. CANADIAN HOUSING AS SPATIAL SYSTEMS: CONNECTED DIFFERENCES

Is Canada's Housing System reasonably described, on the basis of evidence, as a connected System of Different Geographic Sub-Systems, with different nested scales, and might that matter in housing policy governance?

PART III. CONNECTING HOUSING TO ECONOMIC SYSTEM THINKING

Can we draw together, from existing housing-economy thinking, a conceptual framework that allows us to address questions of housing effects on local economies coherently and clearly?

PART IV. HOUSING, STABILITY, WEALTH, AND PRODUCTIVITY.

Using the framework developed, is there evidence regarding the economic consequences of housing outcomes at sub-national scales, especially metropolitan areas and does the nature of effects differ within types of spatial systems (metropolitan areas, towns, rural areas)?

PART II explores Canadian housing as a complex system of local and regional housing sub-systems (Section 2). PART III outlines the ways in which housing systems are typically understood in economic thinking and economic development policy (Section 3) and then develops a looser, heuristic framework to make more effective research and policy links between housing outcomes and metropolitan and regional growth drivers. This comprises an expansion of the definition of housing and outlines a heuristic framework to capture short and long-term housing effects on metropolitan (or local) economic growth (Section 4). PART IV, using the framework developed, reviews international and Canadian evidence on how housing outcomes impact economic stability (Section 5), the distributions of incomes and wealth (Section 6), and growth and productivity (Section 7). A short, concluding PART V, briefly summarises how the absence of a housing-economy systems perspective undermines an appropriate consideration of housing effects in local and national economic development strategies (Section 8).

¹ The research underpinning the paper involved reviewing literature (academic and non-academic; for Canadian and other advanced economies) and undertaking discussions with Canadian experts, national and local, in government, academia and business.

PART II.

CANADIAN HOUSING: SPATIAL SYSTEMS of CONNECTED, DIFFERENCES.

2. HOUSING: ALWAYS LOCAL, ALWAYS MORE THAN LOCAL

i. Housing as Spatial Systems

Housing: Spatially Fixed with Wide Geographies of Impact.

Housing (the noun, the physical object), is an inherently spatial structure or stock of capital (MacLennan & Long, 2023). It is embedded, literally, at a particular location and constitutes, with the exception of tents and mobile homes, spatially fixed capital. Housing is always going to be local but the outputs and activities that it generates are not confined to the home nor the near vicinity. A critical determinant of the value of any home, in addition to all the attributes of size, design and dwelling quality, are its locational attributes. Accessibility ('location, location and location') to the main activity sites used by a household matter as they use time, financial resources, and 'carbon'.

Such connections also take the outputs and outcomes from the home well beyond its curtilage, beyond the neighbourhood and into wider ranges of spatial impact. Most obviously, the greenhouse gases that arise in your street impact the global environment, and equally, if less obviously, locally induced housing outcomes beneficial or detrimental to the economy may have reach to metropolitan and national levels.

Housing is always local in its impact but never only local and these connections to wider and different sub-systems in the metropolitan and regional economy may matter greatly. This is an important observation in understanding the appropriate geographical scale of housing government and governance. When policy refocuses on housing outcomes, what particular investments do rather than where they are made, then housing is an obvious and natural concern of multiple levels of government. Communities, municipalities, and Federal Governments have legitimate housing policy interest as well as Provinces. This recognition of more than social impacts and recognition of metropolitan, regional, national, and even global outcomes is a critical issue in reshaping housing policy and how it should be governed and resourced.

The different spatial reach of housing effects or outcomes means that different spatial scales for 'housing effects' need to be considered. And there is a strong case to understand how each geographic level interacts and coheres with both more local and wider scales of function.

The Imperative of Understanding the Local Basis of the National Housing System.

Recognition of these cross-regional and intra-metropolitan differences and dimensions (as well as neighbourhood nuances), or what might be called a 'sub-national' systems approach to understanding housing-economy relationships is appropriate for three reasons. First, different types of regions, ranging from metropolitan to remoter rural regions, and even regions of a similar economic scale/standing, may have different kinds of housing system-economy interactions; there is, as outlined above, always (but not only) a local dimension to housing systems. A second consideration is that economic theorising about and modelling of macroeconomic systems is inevitably reductionist, so that important local influences (particularly where data is not readily available) may be 'assumed away' as simplifications.

Often, important aspects of land, housing, infrastructure, and environment are subject to such reductionism, so that policy debates focus on aspects of capital, labour, and innovation rather than generally defined 'land'. This bias in understanding national growth performance is particularly worrisome where significant economies have large proportions of their GDP produced within a small number of metropolitan areas, so that urban effects will matter in 'aggregate' performance. Canada and Australia are, for instance, both economies where more than half of national output is produced in three metropolitan agglomerations.

A further consideration is that, despite improving econometric techniques, the collinearity of shifts in patterns of housing investment and outcomes with shifts in highly linked systems in the economy, such as other infrastructure, means that clear identification of the effects of residential investment on growth and productivity are rarely possible and seldom credible. The over-riding aim of the review is to understand how real scale housing systems shape economic outcomes and why they are important. In the next section global, regional, metropolitan, and more local suburban or neighbourhood scales are used to describe Canadian housing, not as a statistical artefact but as a connected set of different, and similar, scale spatial systems. In stylised, simplified form, the Canadian housing system is not described as a set of numbers, but as an interaction of multiple, different level systems, as illustrated in Figure 7. Can a reasonable attempt be made to give some empirical content to that notion?

ii. Canadian Housing: Different but Connected Local Systems?

Indicators of Difference and Connection.

There are substantial data and analytical challenges involved in moving from conceptual illustrations that Canada is a multi-housing system entity to revealing the broad empirical structures and connections of the system. A powerful auto is a complicated system but if driven into a wall at speed it may be difficult, ex post, to readily reconstruct that system. Revealing, empirically, the Canadian housing system requires agreement on the system nodes (regions, cities, neighbourhoods) to be highlighted, an identification of measures of the flows of connection between these key nodes and agreed measures of signs of pressures and adjustments, that is changing system outcomes, as a result of evolving demands and costs (for example). Flows and pressures demonstrate how connected nodes are reacting to secular change processes, evolutions and external to system shocks.

There is a well-developed, and useful, economic perspective on revealing housing systems structures, used by mainstream urban economists (Gyourko et al., 2013) and other applied economists (MacLennan, 2012). In housing system analysis, at regional and local scales, movements of households, and changes in prices and investment construction patterns, when data is available, are widely used to both identify sub-national market structures and system changes. These are reflected in economics research on econometric modelling of regional house price divergences, the identification of sub-market structures in metropolitan area/rural regions and estimates of sub-national supply changes associated with house price changes.

However, Canadian data of adequate quality and coverage has not been widely available to researchers and there has been no systematic multi-level exploration of the national housing system. For the last quarter century Canada appears not to have supported the development of an applied economic competence in housing system/market analysis. In housing market analysis we are left, metaphorically, sifting through fragments of the system. The development of national-regional data and of GIS based local housing market data now exists, if somewhat patchily, but is not widely available in the public domain and Canada

contrasts poorly with the multi-level housing data systems and recurrent national, regional and local reports that emerge in Australia (CoreLogic) and the UK (National Statistics).

Canadians do, however, already have an awareness, even if they have never considered the notion of a spatial housing system, that there are significant differences in housing structures (physical and social) and outcomes across the country. The Census provides important physical and social data about housing that highlight important variations across Provinces, CMAs, and other spatial groupings as well as municipalities. However, because the Census contains scant economic information, for instance in relation to household incomes and housing expenditures, it is much more useful in identifying demographic drivers of change and broad indicators of traditionally defined housing needs. It reveals little of the economic and environmental features associated with housing patterns. Awareness of market outcomes (prices, sales, vacancies) usually comes from the accumulated, and often fiercely protected, databases of the real estate industry, or the wider regional and national data collected by major mortgage lenders. Regional price indices, that emphasise differences and can reveal divergences, are regularly published but their focus is not revealing the structure of the national housing system.

CMHC has for long reported, and modelled, differences in housing patterns and outcomes across the nation at provincial, regional, and metropolitan scales (and CMHC's 2018 analysis of metropolitan price changes provides a robust analysis that shifting demand and supply side influences underpin the substantial differences in long term real price growth across metropolitan areas). That is, metropolitan scale sub-systems are clearly identified and important. Provinces also provide overviews for their jurisdiction. There is an awareness both of the spread and scale of needs and that housing outcomes differ across provinces, for instance CMHC (2022a) highlights the persistent affordability pressures extant in British Columbia, Ontario, and Québec. Meanwhile, there are also a large number of one-off research studies on housing research that focus on census metropolitan areas/ census agglomerations (such as Hulchanski's (2016) long running and seminal programme of work assessing neighbourhood scale shifts in housing patterns within Toronto; or Pixao's (2022) work at the Bank of Canada revealing the important differences in supply responsiveness across 14 major CMA's). There is a diverse but scattered body of research that confirms the complex, multi-scale nature and diversity of the Canadian housing system.

The recognition that these spatial differences and spatial systems are driving quite different economic outcomes both for their localities, and the nation, is weak. For instance, one can tell from the Census, and supplementary local population estimates, that over the last decade all but one of the counties in Nova Scotia have, for the first time since a century ago, increased in population. However, one can neither accurately identify the system drivers nor the local housing consequences and, if housing is to be better governed, these are key first steps. Are these Atlantic Province changes, or similar shifts in other rural areas of Canada, simply local events or are they driven by wider, multi-level shifts and pressures elsewhere in the national housing system? Answering these questions is important to improving local and national economic performance.

There is evidence that multi-level, connected shifts are taking place. Is Canadian housing, as claimed above, a connected system of sub-systems, or a collection of local places with different outcomes. And is it changing? The answers are important in shaping the collaborative governance of housing for the nation. In the next section, combining census results and recent published academic there is an attempt to illustrate more systematically the changing spatial organisation of the Canadian housing system.

iii. Changing Housing System Connections: From Global Markets to Cities and Neighbourhoods

Global Flows and Processes.

Until the start of the Covid-19 pandemic in early 2020 and the military hostilities and diplomatic tensions emerging in Eastern Europe and the Northern Pacific, technological change, with near ubiquitous fast transmission of data and images, deregulation of capital markets and increases in the trade of goods and services, reinforced ‘globalisation’ of the world economy. In consequence, there were increasing flows of housing demand (both short and long-term, for instance the number of overseas students in Canada rose from 123,000 in 2000 to 638,000 by 2019) across national boundaries, and there was a rising flow of transnational housing investors (both individuals and companies) and increased financial flows to support investment. National housing systems became more open. In Canada, as for other advanced economies, inward flows of both financial and human capital were not evenly spread but were usually highly concentrated in particular localities, at both metropolitan and neighbourhood scales. This is an important reminder that flows from one level do not necessarily trickle down from larger to more local systems but may go directly from global to neighbourhood systems (and this raises important issues about the appropriate policy instruments to deal with such flows). Post 2020, in a time of what the IMF have labelled as ‘slowbalisation’, these flows have reduced but they have not disappeared, and it is important to consider them in more detail.

There has been a growing research recognition that since the 1970’s major metropolitan markets, especially those regarded as ‘world cities’ that have strong, financial and business strategy, innovation and advanced education economic bases, can be more linked to global networks of similar, pressured cities than to their own national settings (Katagiri, 2018). These global housing connections are initially driven by flows of skilled labour and trade and innovation processes. However, where the cities involved develop sustained signs of housing price pressures (or excess demands) there may be reinforcing effects when there are globally mobile flows of residential capital seeking ‘hotspots’ or ‘safe havens’ in core (Canadian) metropolitan markets that frequently have the most unresponsive supply systems (Pixao, 2022). The Canadian pattern is broadly similar to Australia and the UK, with Vancouver and Toronto appearing to diverge from other Canadian metropolitan areas, though after 2018 there appears to be more diverse metropolitan destinations for inward flows of overseas housing investment capital with particular increases in the Atlantic Provinces (Alter et.al., Gordon, 2020; Maclennan et al., 2019). Du et al. (2022), who accept some cross-national synchronisation of house prices across ‘global cities’, conclude that econometric analysis of house prices in Vancouver and Toronto after the introduction of foreign buyer taxes, in 2016 and 2017 (respectively) suggests they cooled price increases in these major metropolitan markets by 5-10 percent. StatsCan data suggests that by 2022 foreign buyer shares of housing ownership were increasing in metropolitan areas, including Toronto and Vancouver over the period 2016-22, with concentration in new housing, especially condos, and in Ontario, British Columbia and Nova Scotia-new Brunswick.

These outcomes have to be seen as global connections between metropolitan housing systems rather than between nations. But the flows involved reflect policy decisions and outcomes at national scale that facilitate (or now inhibit) these inter-metropolitan flows. The determinants of housing market ‘globality’ reflect global interest rates, exchange rate flexibility, bilateral

financial linkages, global financial conditions, business cycle synchronicity, and macroprudential policies (Alter et al., 2018; Katagiri, 2018). Global liquidity also plays an important role and Canada's real estate is particularly attractive to global investors and speculators. There are few regulations on ownership and very weak disclosure requirements regarding the beneficial owners are, or where money comes from (Hulchanski, 2021). In addition, real estate investment and speculative activities benefit from the fact that Canada's housing system suffered little in the 2008-2009 global financial crisis, enhancing (at least outside of Canada) investors' perceptions of the safety and stability of the system (Walks, 2014). Strong prudential regulation of mortgage markets may have the unintended effect of attracting international investors into Canada's supply-short metropolitan housing markets.

The inflow of global capital decouples local housing prices from local wage rates and may inhibit labour mobility from Canada's less housing pressured places. This is a growing concern across Canada as domestic and foreign investor ownership has risen significantly over the years (Kalman-Lamb, 2017), especially in certain parts of Metro Vancouver and Toronto region (Gordon, 2020). From 2007 to 2011, for example, 64 per cent of investor immigrants had British Columbia as their intended destination, whereas 32 per cent had Ontario (Citizenship and Immigration Canada, 2014).

Punwasi (2022a) highlights some more recent changes to these patterns. Non-resident participation in homeownership soared in 2020 and, in the four provinces tracked, about 1 in 10 recently built condominium units have a foreign owner. The median rate of housing with non-resident participation in ownership was 2.4% in 2020, up from 2.1% the year before (Punwasi, 2022b). He also highlighted that Canada's coastal regions, both Pacific and Atlantic, attracted the highest rates of foreign buyers, as a share of stock. Figure 1 displays disparities in these rates for cities in different regions of Canada. St. John's, Newfoundland, topped the list with 6.4% of homes having non-resident owners in 2020. It was followed by Vancouver (6.2%), and Campbellton, New Brunswick (5.9%).

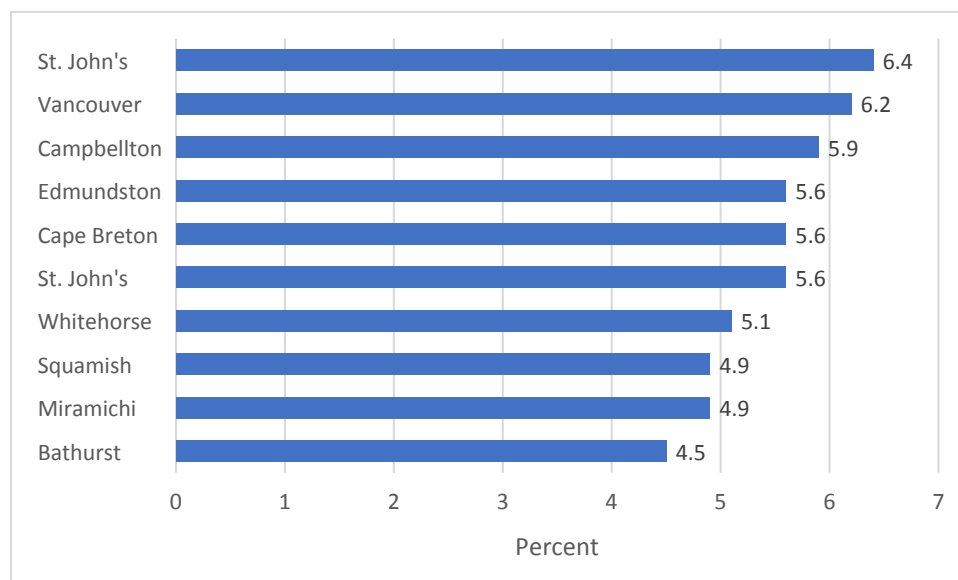


Figure 1. Canadian foreign ownership rate by city for 2020.

Source: <https://betterdwelling.com/here-are-canadas-top-cities-where-foreign-investors-are-dropping-capital/>

While Chinese money has comprised the largest capital flows into the Vancouver market, in Victoria the foreign buyers are largely Americans. According to the Victoria Real Estate

Board surveys, in 2018, 60% of all buyers moving from overseas were coming from the U.S., continuing a decade long pattern.

Figure 2, for Victoria, below, highlights that half of new purchasers in Victoria come from elsewhere in Canada. Whilst overseas purchases are very visible inflows into the system and highlight the global connection, they typically constitute a small share of the inflows pressurising markets. There is variety in the foreign ownership purchase rates reported (largely attributable to studies using different definitions of foreign and different study time periods, see Du et al. (2022) and they cite ownership rates of 3-5 percent. The highest concentration of foreign-owned condos was reported as 6.9 per cent in specific areas of Montreal (Campbell, 2022). However, the StatsCan figures reported above suggested that Vancouver, Toronto, and Halifax were the markets most affected by foreign ownership of new housing, especially condos, after 2016.

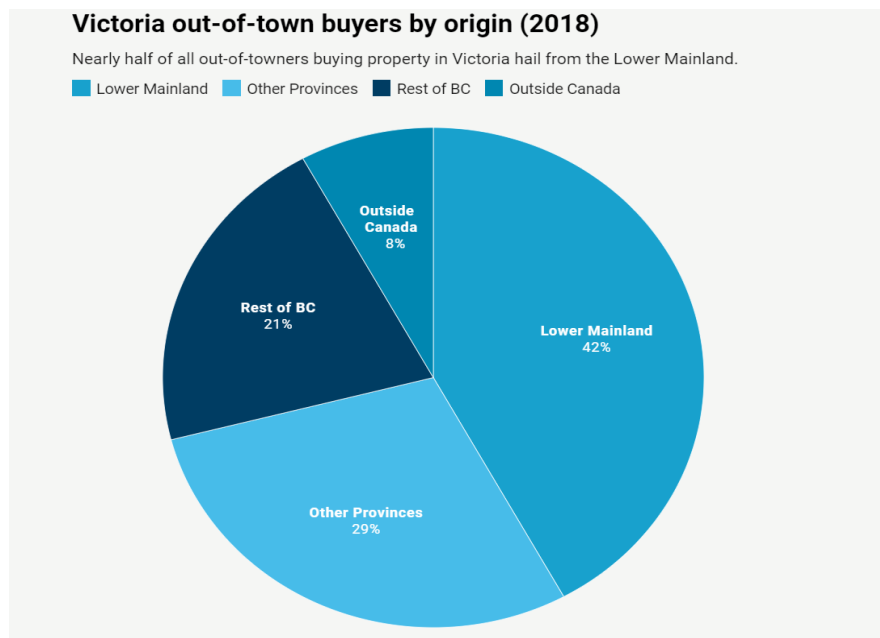


Figure 2. Buyers in Victoria

Source: <https://www.capitaldaily.ca/news/foreign-capital-money-laundering-victoria-real-estate>

It is important to keep the ‘foreign purchaser’ impact on metropolitan housing markets in perspective (particularly given the different statistical claims made). The overall housing market in Toronto is numerically dominated by new immigrants to Canada, and they are often renters. The major investor buyers are not from overseas but, for the period 2011-21, over a quarter of Toronto's real estate was bought by domestic rental investors (who own multiple properties) in the period from January 2011 to August 2021 (Tetranet, 2021). Global inflows of ‘residential investor capital’ clearly shape and diversify Canada’s major metropolitan housing markets but housing pressures are largely driven by domestic Canadian flows and intendedly permanent immigration to Canada.

Regional, Urban, Rural Housing System Destinations of Immigrants.

From 2016 to 2021, immigration accounted for four-fifths of labour force growth (Statistics Canada, 2022c). In 2021, close to half (46.6%) of the population living in the Toronto CMA were immigrants, followed by Vancouver. A vast majority (92.2%) of immigrants by 2021 lived in a CMA. The fact that most established immigrants and recent immigrants choose to

settle in large urban centres has had a profound impact on Canada's cities and housing markets. Family, friends, jobs, housing, and lifestyle are some of the key factors that immigrants consider when selecting their new home and the neighbourhood it is set within. Instead of the relatively balanced distribution throughout CMAs like internal migrants, international migrants tend to move to well-defined neighbourhoods in core areas (City of Vancouver, 2022).

Albeit the dominant destinations remain the 3 largest CMAs, increasing shares of recent immigrants have settled outside of Toronto, Montreal and Vancouver (Statistics Canada, 2022c). The data calculated by Statistics Canada suggest that 4.4% of recent immigrants settle in small urban areas (CAs) and 3.2% of recent immigrants settled in rural areas (outside CMAs and CAs) in 2021. Over the 15-year period, the share of recent immigrants rose in Nova Scotia, New Brunswick, Prince Edward Island and Newfoundland and Labrador (Statistics Canada, 2022c) and especially in the large urban centres and towns of the Atlantic provinces. These patterns undoubtedly reflect the higher housing costs and lower availability of affordable homes in Canada's traditional immigration destinations.

The question of immigration flows into housing and labour markets is arguably a core issue facing the future of economic growth and housing system outcomes in Canada. It reflects the importance of the systems approach. With housing costs and availabilities diverting immigrants to previously slower growing localities what will be the effect on productivity growth and employment of these housing choices. And, in smaller markets, modest scale inflows of new demand may constitute relatively large shocks to local housing supply systems. What will be the effect on housing prices, rents and affordability in the new immigration destinations? Will existing low-income Canadian renters be better or worse off from changing destination patterns and much enhanced immigration targets to 2030 and beyond? How well aligned are Federal immigration aims and municipal and Provincial housing programmes to house the new Canada?

Metropolitan-Regional Scale Changes.

Global flows of rental investors, but particularly inflows on new Canadians, shape metropolitan and local housing outcomes. However domestic movers, from rural to urban, and interurban are critically important housing system flows. For instance, in 2016, almost half of Vancouver households had moved at least once in the five years prior to Census (City of Vancouver, 2022). Among these mover households, 56% moved within Vancouver (predominantly younger renters seeking apartments), 27% moved from another municipality in Canada and another 17% from abroad (City of Vancouver, 2022).

Over the last decade, and reinforced through the pandemic period, there has been growing attention to flows of households from larger metropolitan areas to nearby towns, to second tier cities and to remoter rural regions, spreading core city pressures across the Canadian housing system. This can create an impression of relative metropolitan and core city de-emphasis or decline, but it is a misleading understanding. Canada is growing and spreading rather than relocating away from metropolitan areas. In this millennium metropolitan areas have increased in scale (and number), with a short pandemic hiatus in some, and OECD forecast that growing proportions of population will, in Canada and elsewhere, live in metropolitan areas. And within these metropolitan areas the relative growth of city cores versus remainder of metro areas has varied over space and time.

Statistics Canada (2022a) notes that from 2011 to 2016, the population of downtowns grew at a slower pace compared with CMAs as a whole but that there was a reversal of that trend from 2016 to 2021, when the downtown population of the CMAs grew faster (+10.9%) than

the CMAs as a whole (+6.1%). This was especially true of the largest CMAs in Canada, where the population of downtowns rose relatively faster from 2016 to 2021 and this may reflect policy efforts to increase downtown housing density and supply of downtowns whilst the desire to live in central neighbourhoods remains strong (Statistics Canada, 2022a), see Figure 3.

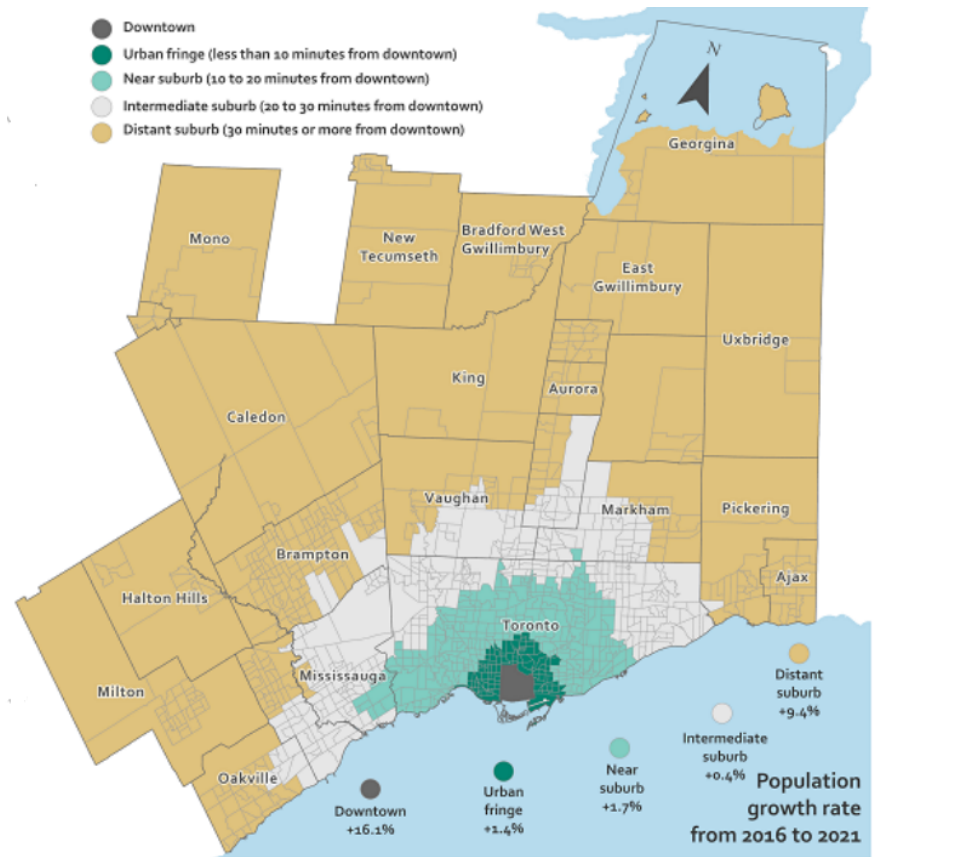


Figure 3. Population growth within CMA: Metro Toronto.

Source: Statistics Canada (2022a), Map 1, Page 4.

Nevertheless, in some CMAs such as Nanaimo, Ottawa, Chilliwack, Barrie, Saskatoon, the population of downtowns grew at a slower rate than the population of the entire CMAs from 2016 through 2021 and, further, the population of downtowns fell in some CMAs such as Quebec, Edmonton, Saguenay, Regina, Red Deer and Lethbridge (Statistics Canada, 2022a).

Clearly, in the most pressured CMA's core and suburban populations increased and that growth more than offset decline in lagging metropolitan areas. The COVID-19 pandemic ended, at least temporarily, the rapid population growth that occurred in Canada's downtowns from 2016 to 2019 (Statistics Canada, 2022a). By 2021 there were fewer people living in the downtowns of Montreal and Vancouver compared with a year earlier. Population growth also slowed in the suburbs with the onset of the pandemic, albeit to a lesser extent than in downtowns. There, are however, preliminary signs by mid-2022 onwards that turnover patterns and price change relativities are reverting more towards pre-covid patterns.

Data, see Table 1, from OECD were used to calculate changes in the share of the Canadian population located in metropolitan core areas from 2001 to 2020, and to identify the changing structure of flows between CMA core areas and their hinterlands. Two opposing trends can

be identified. In Montreal, Calgary, Quebec City, Victoria, Windsor, and Saskatoon, the increase in metropolitan population is more likely to occur in suburbs and hinterlands, whereas in Ottawa, London, Halifax, and Sherbrooke population growth is mainly in metropolitan core areas. In other metropolitan areas, the trends were more or less reversed during the period of 2016-2020.

Table 1. Population concentration in metropolitan core areas

	2001-2005	2006-2010	2011-2015	2016-2020	Trend
Toronto	89.06%	89.30%	89.36%	89.04%	
Montreal	77.77%	76.59%	75.80%	75.36%	Decreased
Vancouver	88.10%	88.36%	88.54%	88.46%	
Ottawa	83.34%	83.43%	83.54%	83.74%	Increased
Calgary	84.36%	83.09%	82.09%	81.18%	Decreased
Edmonton	81.68%	81.43%	80.93%	81.08%	
Quebec	64.68%	63.82%	62.90%	62.20%	Decreased
Winnipeg	83.73%	83.30%	83.10%	83.21%	
Hamilton	86.25%	85.99%	86.12%	85.93%	
London	67.48%	67.65%	68.19%	68.98%	Increased
Kitchener	83.99%	84.00%	83.58%	83.89%	
Halifax	87.38%	87.65%	87.95%	88.58%	Increased
Victoria	64.59%	63.29%	61.77%	60.70%	Decreased
Windsor	59.93%	58.96%	58.67%	58.55%	Decreased
Saskatoon	89.13%	88.15%	87.06%	86.36%	Decreased
Sherbrooke	62.07%	62.32%	62.44%	62.81%	Increased

Source: OECD Statistics

Canada's main demographic changes and migration, and immigration patterns, still primarily drive metropolitan growth, albeit it in more diverse patterns. These patterns particularly reflect changes and flows in the housing system, and with more and more of the Canadian housing system driven by growth and shortages in the major metropolitan locations. This is reflected in sustained patterns of price change. In this millennium real house price growth in Toronto and Vancouver has generally outpaced other localities. Before the pandemic, housing demand, driven by economic growth, low unemployment rates and population growth (largely due to immigration) outpaced additional housing supply (see Siatchinov et al., 2020; CMHC, 2018)). Patterns shifted through the pandemic peak period.

Patterns Within Metropolitan Regions.

The previous two sections highlight that system changes in global and national economic and migration systems may have 'concentrated' impacts at other housing system levels. General economic/demographic changes have favoured metropolitan development. Global city synchronisation, driven by city-level connectivity between large and international cities, impacts particular neighbourhoods and sectors. For example, the Real Estate Board for Greater Vancouver divides the city and reports market trends for "Vancouver East" and "Vancouver West" (City of Vancouver, 2022) that are presented in Figure 4. It depicts the extent to which Vancouver West 'unlinked' itself from Vancouver East and Metro Vancouver over the last decade.

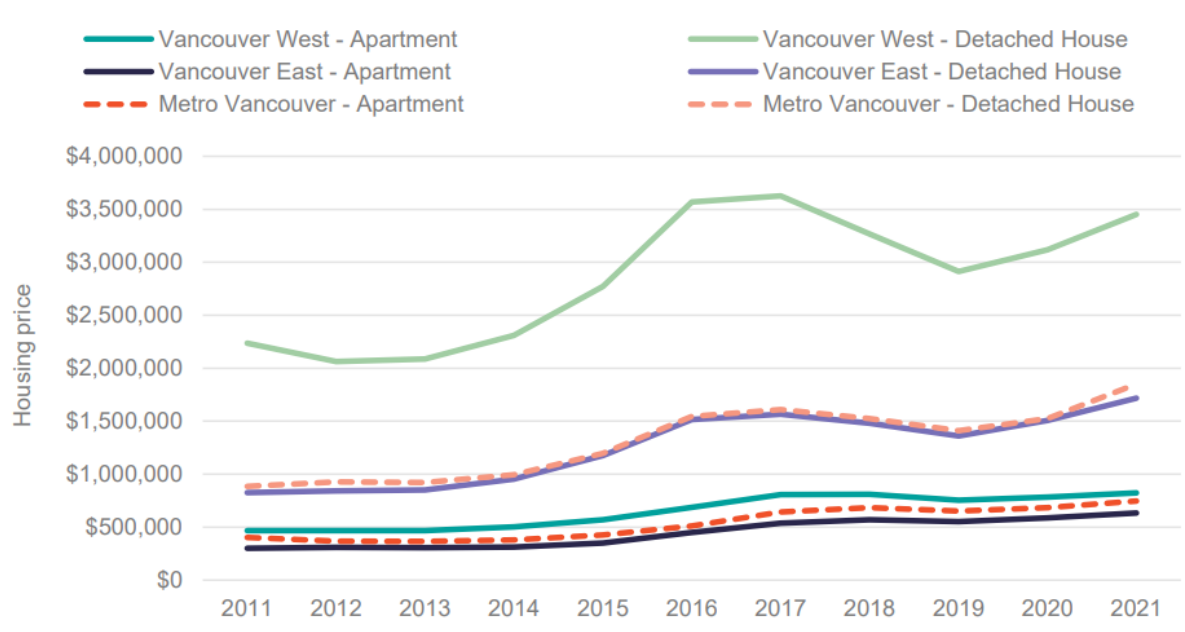


Figure 4. House prices, Greater Vancouver

Source: Real Estate Board of Greater Vancouver (City of Vancouver, 2022), figure 15, Page 29.

The delinking of housing submarkets within metropolitan areas, and indeed rural areas when more affluent in-movers and second home-owners concentrate may have long term effects on long-term economic and social segregations and mobilities in Canada and it as question that requires more attention than at present. The origins and destinations of capital inflows may be one source of the potential difficulty but there are others. Morel (2022) reports that prior to Covid-19, suburban house prices were lower than in city cores and that the gap was narrowing over time. The Covid-19 search for space, he reports, led to much more rapid closing of the suburban city core gap and this would imply ‘relinking’ rather than ‘unlinking’. What will that spatial difference look like after direct Covid-19 effects dissipate. But does a spatial only definition of housing attributes capture the more complex reality. There are rich and poor neighbourhoods at all distances from the CBD and it may be that there is unlinking within and across these different distance bands from the city. The interactions of house prices and prudential regulation in a long period of unconventional monetary policy, we suggest below, made wealth rather than income a critical influence in housing market choices and decisions to move, so that the likelihood is that gaps between richer and poorer housing submarkets have grown. The extent causes and implications of unlinking/structural shifts in housing markets needs urgent policy and research attention as long as the problem is permanent, extensive and damaging.

The Bank of Canada notes that there have been significant shifts in intra-metropolitan price during the COVID 19 pandemic (Morel, 2022). Morel calculates the average distance between neighbourhoods and the closest city centre among Canada’s 15 major CMAs. Using the average price of houses sold in these neighbourhoods (using Tetranet and National Bank (between 2019 and 2021), Morel finds that during the pandemic, house prices have increased more in suburbs than downtown (see Figure 5). The stronger growth in suburbs than downtown also applies to Metro Toronto and Metro Montreal, with even greater growth difference between city centre (around 10%) and rural fringe (round 50%) (Morel, 2022).

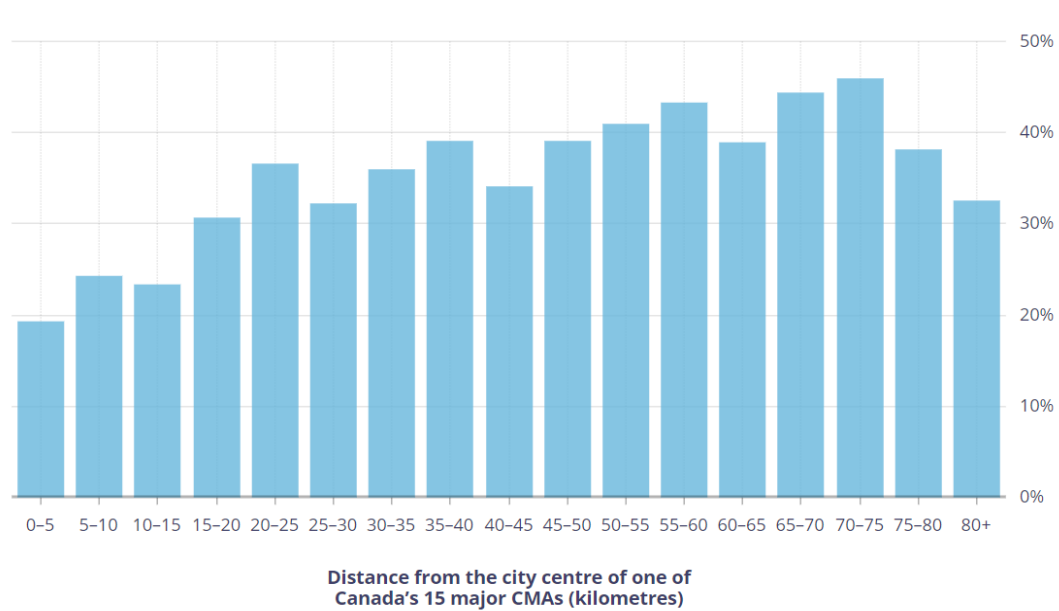


Figure 5. House price increases 2019-21 by distance from CBD (km).

Source: Morel (2022), Chart 1.

Employing the price data from 2014 through 2021, Morel’s empirical results also suggest (reinforcing the observations above that sustained metropolitan price pressures are being more widely spread as metropolitan centres continue to lead growth) that the catch-up of suburbs emerged well before the pandemic, and this house price gap narrowed faster during the pandemic, see Figure 6. This implies a weakened price premium for access to city centres.

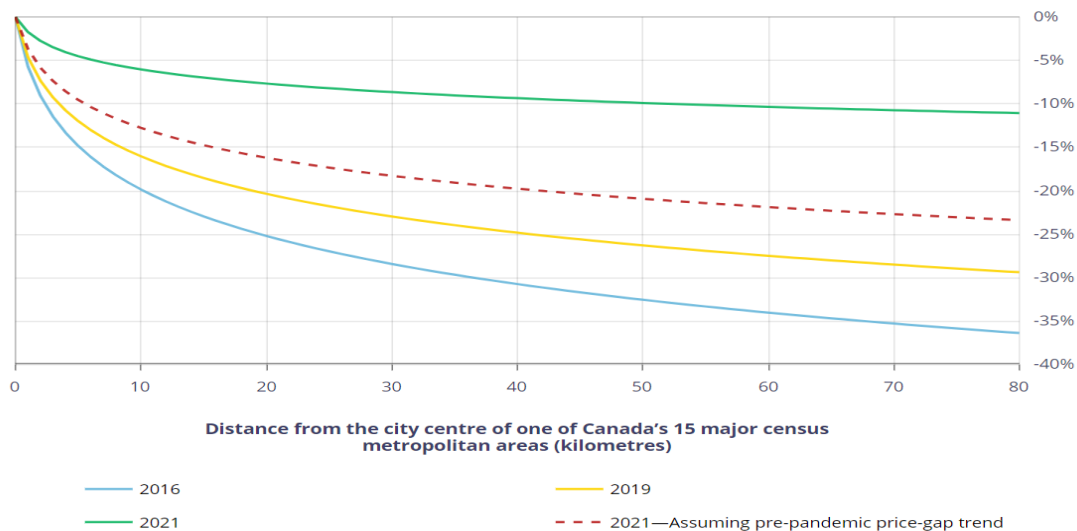


Figure 6. The premium associated with living close to downtown fell considerably during the pandemic.

Source: Morel (2022), Chart 3.

Vancouver illustrates particularly well the changing nature of metropolitan and regional housing systems in Canada. In 2016, almost half of Vancouver households had moved at least once in the five years prior to Census (City of Vancouver, 2022), an exceptionally high turnover rate. Among these mover households, the majority, 56%, moved within Vancouver.

However, reflecting the dynamism of the economy, 27% moved from another municipality in Canada and 17% arrived from abroad (City of Vancouver, 2022).

At the same time as new households arrived, between 2011 and 2016 (pre-pandemic), approximately 40,000 households moved out of Vancouver city, half of them to another municipality within Metro Vancouver (these households tended to be of working age, couples) (City of Vancouver, 2022). These families are moving to places where they can afford to purchase suitable housing (64% of households who moved to another part of Metro Vancouver owned their new dwellings in 2016), although personal preferences may also play a role in choosing to locate further from the urban core. Prior to the pandemic, Toronto was also experiencing middle class families leaving to surrounding cities (Siatchinov et al., 2020).

The 2018 Canadian Housing Survey (CHS) asked a sample of Canadians about their reasons for moving in the 5 years prior to the survey. These data are only available at the regional level for Vancouver but provide important insights on movers. Overall, the main reason cited among Metro Vancouver residents for moving was to upgrade to a larger or better-quality dwelling. A desire for more living space, first-time buyers looking for a more affordable home, and a good alternative choice for elder peoples may all contribute to this phenomenon in Canada (Morel, 2022; Verma & Husain, 2020).

Statistics for commuting to work in and around metropolitan areas recorded in the 2016 Census highlighted that more Canadians were undertaking longer daily commutes from suburban homes to metropolitan job concentrations, often in or near city cores. These data suggest that shortages of suitable or affordable housing in more central metropolitan localities substantially raised commuting in this millennium, with consequences for productivity and greenhouse gas and other traffic pollution effects.

More recent figures (collected in 2021) suggest sharply changed patterns during the pandemic. For instance, continuing the Vancouver example, 40 percent of Vancouver jobs are held by commuters from outside the city (City of Vancouver, 2022), yet car commuting in 2021 was 1.7 million trips lower than in 2016 (Statistics Canada, 2022d, p. 19). The drop in car commuting mainly occurred among those working in professional service industries, while the number of front-line workers commuting by car increased. That sharp decline in car-commuting occurred across almost all of Canada's CMAs saw fewer car commuters, (Ottawa-Gatineau (26.4%), was the largest and Winnipeg (-7.6%) the smallest. More widely, by 2021, the decline in car commuting was less pronounced in rural and small-town Canada (-5.7%), compared with Canadian CMAs (-15.8%) and CAs (-7.4%) (Statistics Canada, 2022d, p. 19).

By May 2022, with the economy more open and most public health measures related to the pandemic removed, the number of car commuters had already exceeded 2016 levels (Statistics Canada, 2022d, p. 19). However, reversion to pre-pandemic home-work location changes may not have entirely reversed and pre-existing pressures to move to suburban edges may have continued. As long as metropolitan growth continues to lead patterns of spatial change, with core city pressures transmitted within metropolitan regions and down the urban hierarchy Federal governments and subnational governments will have to pay, arguably, much more attention than in this millennium to date, to the economic (mismatches of home and job locations), social (income segregation by area) and environmental (rising commuting consequences) of the emerging patterns in national, metropolitan and local housing systems. It is important not to see the housing system in bits and pieces but as a dynamic, complex system connecting and shaping Canadian changes, and creating difficulties as well as

opportunities, across the nation, from pressured downtown to remote rural village. There is clear, if patchwork evidence, that housing policymakers are dealing with a system of sub-systems. But it is also reasonable to review why these spatial sub-systems might matter and how they shape the outcomes that housing policies deal with.

iv. Why Might These Levels Shape Outcomes That Matter?

The Spatial System as a Whole.

The discussion above of diverse and separate, but connected, spatial housing markets suggests that, for most policy and research purposes, seeing Canada's housing as an aggregate system serves only as a statistical artefact rather than a conceptual framing to explore and reveal housing-economy processes. The case is made that Canada's housing system may often be more appropriately viewed as comprising a linked array of local, grounded, and more or less open local housing systems. This is not to deny the need for an aggregate view but there is a danger that typical macroeconomic reporting and modelling discards (assumes away) much of what matters in housing and land markets. The conception of the housing system used in policy making, and especially the level of geographic disaggregation, should depend on the questions we wish to ask both to understand and to govern.

The merit of seeing larger territories, such as Provinces or Federal Canada, as a connected set of local sub-systems is that it allows a recognition and exploration of housing system influences and outcomes, such as metropolitan agglomeration economy effects and neighbourhood social spillovers, that matter in economic change but that usually disappear in more reductionist 'macroeconomic' perspectives.

With policy modelling at the macroeconomic scale, whilst short-term aggregate employment and income effects can be predicted, it is often difficult to model and disentangle the impacts of housing investment on growth outcomes as system collinearities and recursive effects prevail. Similar caveats apply in relation to many forms of infrastructure investment and regional and metropolitan perspectives are often required to explore difference and causality effects. If housing-economy interactions are to be recognised in policy design, then research and review requires the correct 'focal length' and that focal length will often be metropolitan regions, in addressing economic system linkages, and neighbourhoods, for best probing social consequences of housing outcomes. In the integrated (housing system) perspective advocated here it is always important to hold the multiple scales of system operation in mind. But more than scales, the functional systems, and sectoral connections that operate.

Interregional-Metropolitan Connections

There is a high level regional/metropolitan logic to the changing geography of economies as well as the housing systems that connect them. Regional and metropolitan resource differences in economic bases, different national or global economic 'standing' (and strategic functional corporate roles) of regions mean that differences in employment growth, incomes and productivity exist and, usually, persist. Typically, although the dominant paradigm for economic analysis of regional, or spatial, growth implies that flows of goods and factors of production tend to equalise regional incomes in the long term, the observed reality is that cross-regional/metropolitan convergence in real incomes or house prices does not (fully) occur. That is, at any time, there may be global and national demand and supply side influences (either sudden shocks or secular trends) that may impact each city and regional housing market differently. Further, more local/regional drivers, shocks and cycles can mean idiosyncratic factors complicate system 'rebalancing'. In the section above it has already

been recognised that inter-regional/inter-urban differences in housing prices and rents may inhibit labour mobilities that might be required to sustain or spread economic growth.

Since the long boom of the 1990's there has been an increased awareness that the largest cities have agglomeration economies and scale effects that raise productivity and that have favoured them through decades of technological change and growing global trade and capital and labour mobilities. Now, there is a growing concern that housing system outcomes, and especially the sustained rise of house prices and rents above metropolitan income growth may now be eroding agglomeration gains.

The extent to which differences in housing market (system) performance persist over time depend on how 'open' a housing market is. More 'open' systems, on the demand side, see faster immigration and emigration effects. However, the predominance of housing moves is within rather than between local/metropolitan systems and there are significant inter-urban mobilities in the construction sector, so that 'closed' and 'local' effects are important. Spatial variety and persistence of difference are typical features of a national set of regional or metropolitan systems (differences assumed in macro-modelling). Yet, as discussed in Paper 3, regional differences in housing amenities, accessibilities and costs rarely feature in national discussions of spatial economic policies.

Patterns within Metropolitan/Region Areas

This paper is primarily concerned with the wider than neighbourhood spatial scales at which labour and housing markets interact. Regions and cities have recurrent geographic patterns of jobs and homes, or mosaics, of sets of neighbourhoods, usually referred to as spatial structures (that underpin the commuting patterns referred to above). The locational structure of urban, and especially metropolitan, areas have an economic logic that shapes specialised zones of employment and concentrations of higher-order (non-local) private and public services. Daily household movement patterns connect homes and these activity sites that may be spread over significant distances (best proxied by commuting behaviours) beyond the home and its immediate neighbourhood. It is these specialised locations and their interactions with individual housing choices that creates the geography, and shapes the efficiency, of an urban or regional economy.

Travel from home to work, and related patterns, are widely used to identify 'labour and housing market areas' and define their broad boundaries (see further below, Section 6). Such areas contain multiple neighbourhoods, and often multiple municipalities, and are often the best practical delineation of metropolitan and regional housing markets, or local housing systems, and represent the scales at which travel, and related, behaviour suggest housing and labour markets function interdependently. They also never have, unlike governments and governance entities, sharp, closed boundaries and are always partly 'open' systems. Partnership across governments are then inevitably required if policy actions are to match real, functioning housing systems.

For half a century, at least from 1950-2000, there was a conventional wisdom, especially applied to North American cities, that metropolitan areas consisted of a series of concentric rings of successively higher income, longer commuting, and Central Business District (CBD) employed residents as one moved from the city core to suburbs (Muth, 1966; Alonso, 1969). Changing patterns of employment locations (shifting post-war from city cores to suburbs), increasing two adult households and female participation in labour markets, wider social change and shifts in housing and producer preferences (Florida, 2008) had already made these structures fuzzier by the 1970's (Straszheim, 1976; MacLennan, 1982). The 'old bones' of city ring structures can still be discerned in metropolitan structures, but they are now

buried beneath a more complex set of spatially dispersed employment localities within metropolitan areas.

As Phelps et al. (2023) have written of Toronto, the geography of neighbourhoods and suburbs in metropolitan areas is now more complex than ever. Households now have to balance not a simple trade-off between CBD employment and lower suburban land costs, but accessibilities to dispersed employment localities, major service, and retail concentrations. The CBD is now a much weaker, centralising focal point for the organisation of the metropolitan housing system, and preferences, technologies and work arrangements induced by the Covid pandemic are potentially significantly resorting the functioning of metropolitan housing systems and the hinterland of rural areas and towns that they set within. New socio-economic structures have emerged within Canada's metropolitan areas (Hulchanski, 2016) since the 1980's and local housing system shift possibilities now seem acute. The policy thinking to deal with them, perhaps less so.

In essence, Canada's economic geographies of housing, central to understanding its spatial economic systems, of growth and disadvantage, have become considerably more complex over the last half century. These patterns both are shaped by and shape local housing systems. They may reflect random (self-organising) growth effects (Krugman, 1992) but also myriads of new social and economic influences working through path dependencies to new housing geographies and housing systems.

The effective alignment of labour markets, employment opportunities, housing opportunities, and transport systems in these more complex *local* systems has become crucial to the achievement of *national* inclusion, carbon reduction and productivity goals. Yet, as in other similar countries (MacLennan & Long, 2023) the role of housing systems in these key economic and environmental processes appears to receive little thinking in metropolitan and regional economic development strategies. There is missing analysis and thinking and as new patterns of living and working emerge, enabled by new technologies and accelerated by the Covid-19 pandemic, metropolitan and regional decisions takers are increasingly uncertain of how housing systems are changing. A starting point for provincial, metropolitan, urban, and rural Canada is to develop a much more robust contemporary understanding of how, where, and why their local housing systems are changing.² A reading of provincial and metropolitan housing strategies reveals how patchy the state of housing system understanding, and its economic drivers and consequences, currently is.

Home and the Neighbourhood (Community)

The neighbourhood scale is not the primary focus in this paper, but it is important to recognise that it matters and needs further policy attention. The amenities of home that relate to neighbourhood, (such as social, infrastructural, and social attributes) usually mean that the neighbourhood is a scale at which household choices about daily organisation and much

²Governments, at all levels, the real estate industry, and academic research funders have left Canada short of the databases (there is no national panel study to analyse and track housing effects on individual and families over time, there is not one integrated GIS based metropolitan housing market data system in Canada), and skills (the academic economics professions have devoted little time or graduate student development to understanding housing markets and the metropolitan housing economy).

social contact cohere. In consequence neighbourhood household behaviours create social, economic, and environmental spillovers at that scale (van Ham et al, 2013; Galster, 2015). The evidence that particular styles and densities of neighbourhoods can fashion social capital, and that particular kind of capital may have micro-economic effects (such as supportive childcare that facilitates second-adult earner workforce participation, or positive reinforcement on teenage learning behaviours, or facilitate the effective integration of new immigrants to the nation) is well established in socio-economic research (Reuschke and Mason, 2016).

The UK government's recent White Paper on 'Levelling-Up' (HMSO, 2022) provides a useful and innovative review of the different kinds of 'capital' that can shape productivity, incomes and housing assets, at local scales, contributes to them. Yet, in the UK and Canada, and elsewhere, such 'capitals' resolutely fail to be articulated and accounted for in housing and economic development policy statements at metropolitan and municipal scales. This is a particular concern in lower income communities, where there may be locally important neighbourhood economy-housing interactions (and such issues have received recent prominence in arguments for enhancing Community Wealth (McInroy, 2022), even where they may have modest effects on overall metropolitan incomes. Housing costs and outcomes are critical in shaping local 'socio-economic capitals' but such effects are largely missing in economic development strategies.

Housing-neighbourhood effects need to be considered not just in poverty places. For instance, more thought needs to be given to how different kinds of neighbourhoods actually become important elements in the package of 'net advantages' attracting particular kinds of skilled employees to particular places. Florida (2006) made the point in relation to the neighbourhood locations and amenities that would attract the 'creative classes', Glaeser (2011) notes similar effects in relation to skill mixes, and Miao (2017) and others have emphasised the importance of highly accessible and high quality neighbourhoods to attracting skilled individuals and households to innovation districts. The neighbourhood housing offer can clearly influence the supply of high skills available for the metropolitan economy as a whole. This point illustrates well how systems thinking encourages exploration of how housing attributes that exists at one spatial scale (the neighbourhood) have their economic impact at wider, metropolitan system scales. Diverse housing types and sizes of housing within neighbourhoods may influence the structure of the labour force living locally and thereby influence the extent to which neighbourhoods remain stable in the face of cyclical downturns or even the propensity for the formation of small firms (Maclennan et al., 2015; Reuschke & Houston, 2016).

Recent discussions of planning and provision for cities seeking to move towards net zero in the next two decades strongly emphasise the importance of the 10-15 minute neighbourhood as a key organisational concept for urban and housing planning in OECD cities. That discussion draws welcome attention to the benefits of more locally accessible and spatially compressed patterns of public (and private) service provision. It also connects to the carbon reducing benefits of active travel and public transport.

There is an attractive case to argue for 10-15 minute neighbourhoods. However, there is a danger that, without refinement and consideration of the implications for employment, incomes and productivity, this new conventional wisdom will impose a new 'fracture' in metropolitan thinking and potentially reduce rather than enhance 'wellbeing'. Too often concept advocacy ignores questions of accessibility to employment and higher order services that cannot be efficiently provided in a multiplicity of neighbourhoods. In understanding housing effects on metropolitan economic outcomes, it is essential to see neighbourhoods as

subsystems within the wider spatial structure of metropolitan housing, transport and labour markets and not just points of service delivery. Dealing with this dilemma, discussed further in Paper 3, will become a growing concern for CMHC and an urgent policy issue for the Infrastructure, Transport, Economic and Social Development and Energy Departments of Federal Canada.

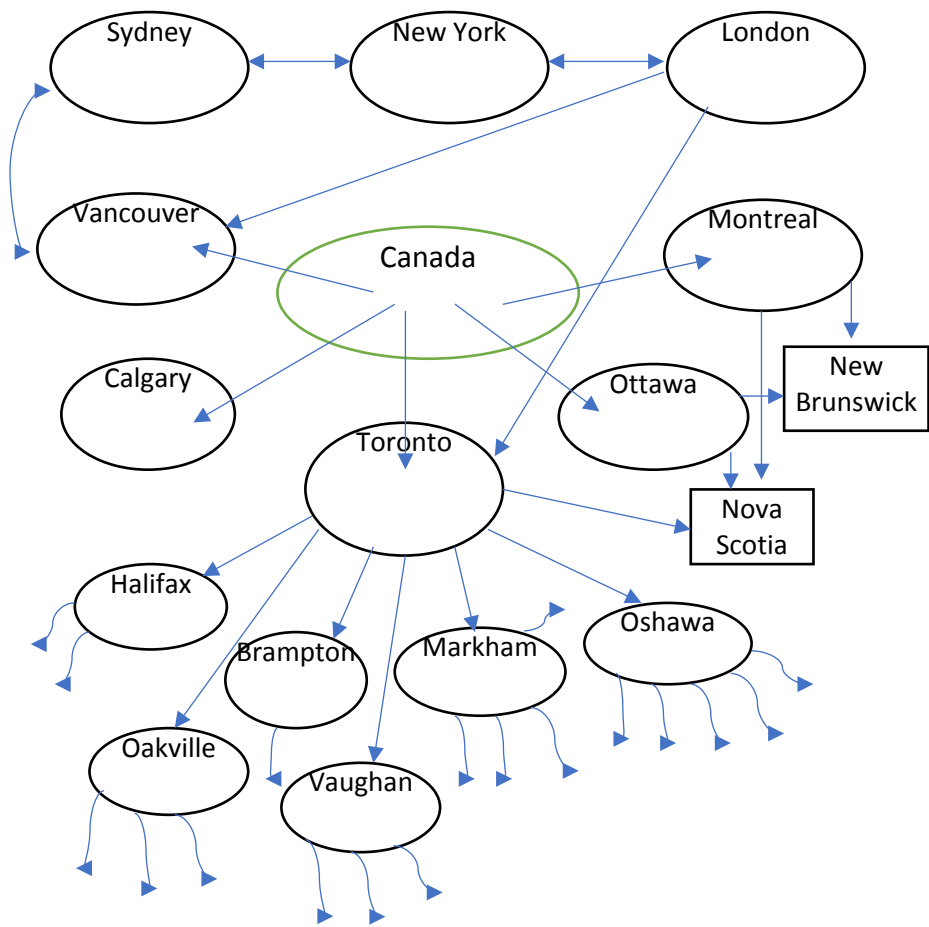
v. Housing as Connected, Multi-Scale Spatial Systems: Essential Perspective

This review emphasises that whilst local or sub-national markets (defined at a particular scale, for example metropolitan areas) may be distinct and separate they are also connected. The likely range of system levels and their connections is illustrated in Figure 7. These separate spatial housing systems are connected, or ‘opened-up’, by flows of people and capital. Some of these connections, as discussed above, are global in nature and, at least up until the onset of Covid-19 and subsequent ‘slowbalisation’, there was evidence in this millennium that the largest ‘world cities’ were, at least in showing signs of price convergence and, at the same time, unlinking from their national pressure and price patterns.

Major cities compete with each other, and market adjustments may cross regional boundaries where households and firms are sensitive to different patterns of ‘net advantages’ that can be partly determined by housing costs and quality. Where pressured metropolitan cores persist households, and firms, may choose to relocate to less pressured cities (Hsieh & Moretti, 2019) or move to metropolitan edge suburbs. Any metropolitan (or rural) region is likely to contain multiple local sub-markets nested within the broader spatial system. These interconnections, and how they change over time, both reflect and shape economic change.

In scanning literature for the economic effects of housing outcomes at metropolitan, and neighbourhood scales, for these scales clearly appear to matter as organisational levels within spatial housing systems, are there already existing frameworks that ask key ‘housing outcome’ questions. In the section that follows the new wider definition of housing developed in Maclennan, Long, Pawson, et al. (2021) is used and the core existing economic approaches to metropolitan economic change are reworked, or rewired, to capture significant housing effects on the economy of places that they currently miss.

HOUSING: AS A SPATIAL SYSTEM



AS A SECTORAL SYSTEM

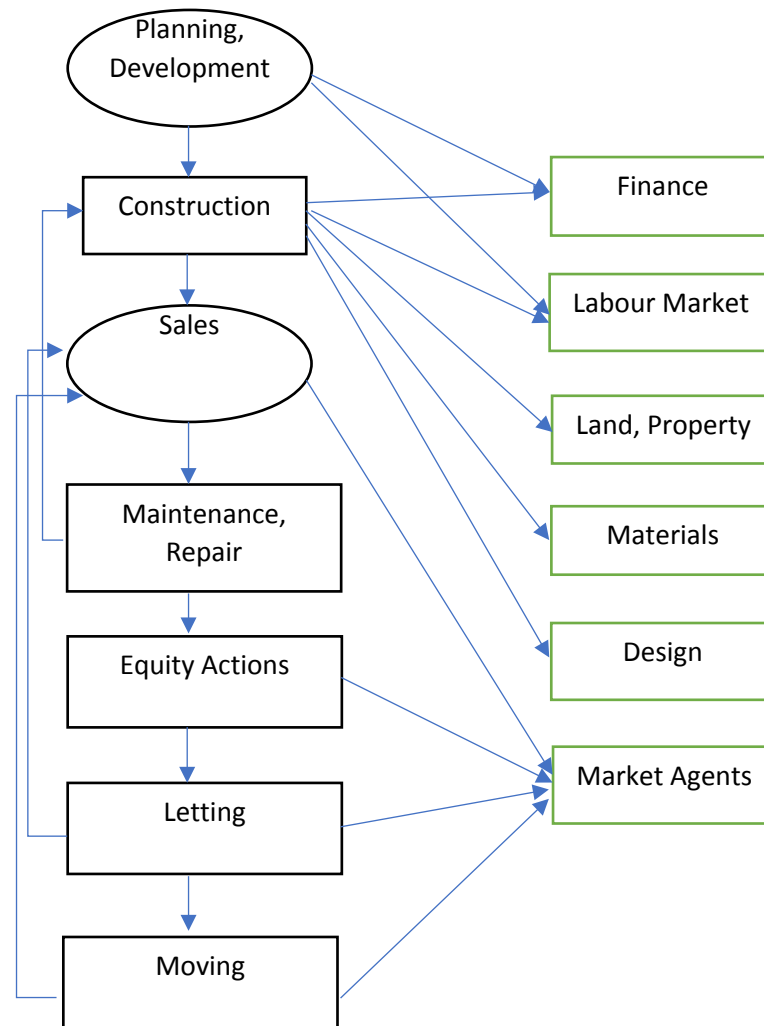


Figure 7. Housing as a spatial system and sectoral system

PART III.

CONNECTING HOUSING TO ECONOMIC SYSTEM THINKING.

3. HOUSING SYSTEMS AND CONVENTIONAL ECONOMIC ANALYSIS

A Modern Definition of Housing

A broad definition recognises that ‘Housing’ is used as a verb/adverb to highlight the processes that are involved in designing, planning, financing, constructing, selling and repairing housing. That is, the economics activities associated with delivering these tasks. A definition also includes ‘Housing’ as a noun or object. Housing is spatially fixed capital and it has multiple attributes or characteristics, that we identify as housing attribute outcomes. These attribute outcomes play important roles in the consumption and investment activities that households undertake. An adequate understanding and assessment of the economic (and environmental and social) outcome effects of housing has to include the consequences of both activities and attribute outcomes.

Conventional Approaches.

Few conceptual or policy analyses of economic effects of housing outcomes include both activities and attribute outcomes, and indeed they are dealt with in different conceptual framings. They can be generalised as Keynesian approaches (focussing on income and employment effects of activities) and General Spatial Equilibrium framings (that stress how consumers and producers change decisions about housing, amenities and incomes as markets and prices change, so concerned with a sub-set of attribute outcomes). Both these approaches have an inherent, underlying ‘systems’ view of the economy embedded but really fail to deal with adequately identifying complex, metropolitan housing system effects.

Urban economic export base models essentially have a focus on relatively short-term effects on urban employment and incomes, rarely extending beyond a single economic cycle. They focus on overall magnitudes of investment, in new housing starts or renewal (or now energy retrofitting expenditures) and, recognising the metropolitan economy as an open system, focus on how and injection of housing spending creates not just homes but jobs and incomes, in turn these incomes are spent on locally produced goods and services that induce further local spending. This is the ‘multiplier’ (often the only serious economic idea used in the housing sector) and it is reduced in scale by purchases of imports and by households saving rather than investing, so that estimated values differ in the range 1.5 to 3.5 (NHFIC, 2021) Almost invariably multiplier estimates fail to go beyond construction activities, so underestimate the impacts of housing spending, but also ignore price rather than output effects they induce. Such approaches pay little regard to the supply side of the economy nor to the housing attributes produced by investments and that simply disregards the growth cases.

How housing market systems interact with the economy beyond the short-term and impacts on the supply side of the economy is conceptually captured in general spatial equilibrium models of the housing system (Glaeser et al, 2010). The model gives an important role to housing and environmental attributes. In effect, households choose the best residential location possible, including choice of city as well as location within it, considering housing attributes, amenities, travel costs, housing costs and wage rates. Such formulations have been at the heart of economists’ views on migration and spatial choice as reflecting ‘net advantages’ from the work of Adam Smith onwards. Glaeser also includes behaviours of

profit maximising employers sensitive to wage rates and available skills mixes and completes his 'spatial economic system' by including a development sector responding to property prices, demand, wage rate and employment influences.

Stated in these general terms the GSE model suggest a wide range of housing outcome and their interactions that could impact metropolitan economic development. It is a 'systems' model that assumes that there are producer and consumer behaviours and an absence of any market frictions that will prevent housing systems being essentially self-regulating (equilibrating) in reasonable time periods. They also lean to an ideological bent that housing problems are exacerbated by planning and policies but never market incoherence or monopolies of one kind or another.

However, there are two problems. First, at a practical level, metropolitan economic planners seem to little use the model to think about attribute outcomes. Second, connecting the basic model to mainstream economic growth theory makes hugely simplifying assumptions about housing systems actually operate. Much of the conventional wisdom of housing markets as 'well-functioning systems that we don't need to worry about' within government circles comes from that abstract theoretical framing. It is not, the evidence suggests, how housing markets actually work. And because economic policy makers too often assume the housing market is 'well-functioning' important market faults and failures are not corrected. More prosaically it is difficult to understand why any analysts or policymaker with a critical realist perspective would embrace the 'well-functioning' trope after the last twenty years of metropolitan market outcomes in Canada. Or indeed sparse rural systems.

This is not a dismissal of the neoclassical economic growth project. It has huge conceptual insights. But policy relevant models need to be more grounded in market structures and behaviours, real systems. Timothy Taylor, writing in the *Conversable Economist Blog* on 10th March 2023 noted, in relation to monetary policy, noted that,

...it's all too easy to slip into treating maximising behaviour on the part of individuals and equilibrium in the sense of clearing markets not as strategic simplifications but as true descriptions of how the world works, not to be questioned in the face of contrary evidence. Notably ... perfectly clearing markets wouldn't have involuntary unemployment. So, if you're a neoclassical economist who doesn't know when to stop, you end up denying that there can be recessions, or that, say, monetary policy can have real effects, even though it takes only a bit of real-world observation to see that these propositions are just false. So part of the art of producing useful economic models is knowing when and where to place limits on your neoclassicism...

In what follows such limits are placed by: assuming that markets are often out of equilibrium, for sufficiently sustained periods that they shift the growth path of the economy; that there are housing and, especially, important land market failures; and that a wide range of attribute outcomes impact the economy. It is accepted that markets are our main housing allocation systems, that housing production has inherent lags, and that governments, in order for markets to function effectively, require evidence based interventions. We need to design policies for real systems and not the conceptual framings that assume away some of the real difficulties in delivering affordable housing. We return to these issues in Paper 3. So how can we present a workable framework for auditing the urban economic effects of housing outcomes?

4. AN EXPANDED FRAMEWORK FOR RECOGNISING ECONOMIC EFFECTS OF HOUSING SYSTEMS

Diverse Theoretical Framings of Urban/Regional Growth.

Applied economists more concerned with longer term spatial economic development patterns than mainstream conceptual neatness have long suggested a variety of drivers and processes of metropolitan growth, such as Myrdal's work on unbalanced development and Kaldor's regional growth models. Economic geographers have highlighted smart specialisation, agglomeration, and even evolutionary economic models. Despite these different approaches, reflecting different system adjustment processes, wider reviews of spatial economic growth tend to stress similar drivers, essentially different forms of capital, of growth and productivity. For instance, Glaeser (2015) and Storper (2013), express different views on spatial change processes but identify quite similar key drivers of regional/metropolitan economic growth. Human capital (skills), business capital availability, innovation systems and infrastructure are typically emphasised. Land and commercial real estate are sometimes given minor attention within 'infrastructure' headings, but housing is rarely mentioned in such approaches. In this paper the aim is not to develop and new model economic growth incorporating explicit housing systems but to identify the growth influences that policymakers need to take account of. The focus is on beginning to develop a framework for capturing the productivity effects of metropolitan housing outcomes.

A Workable Framework to Capture Housing Effects on Productivity

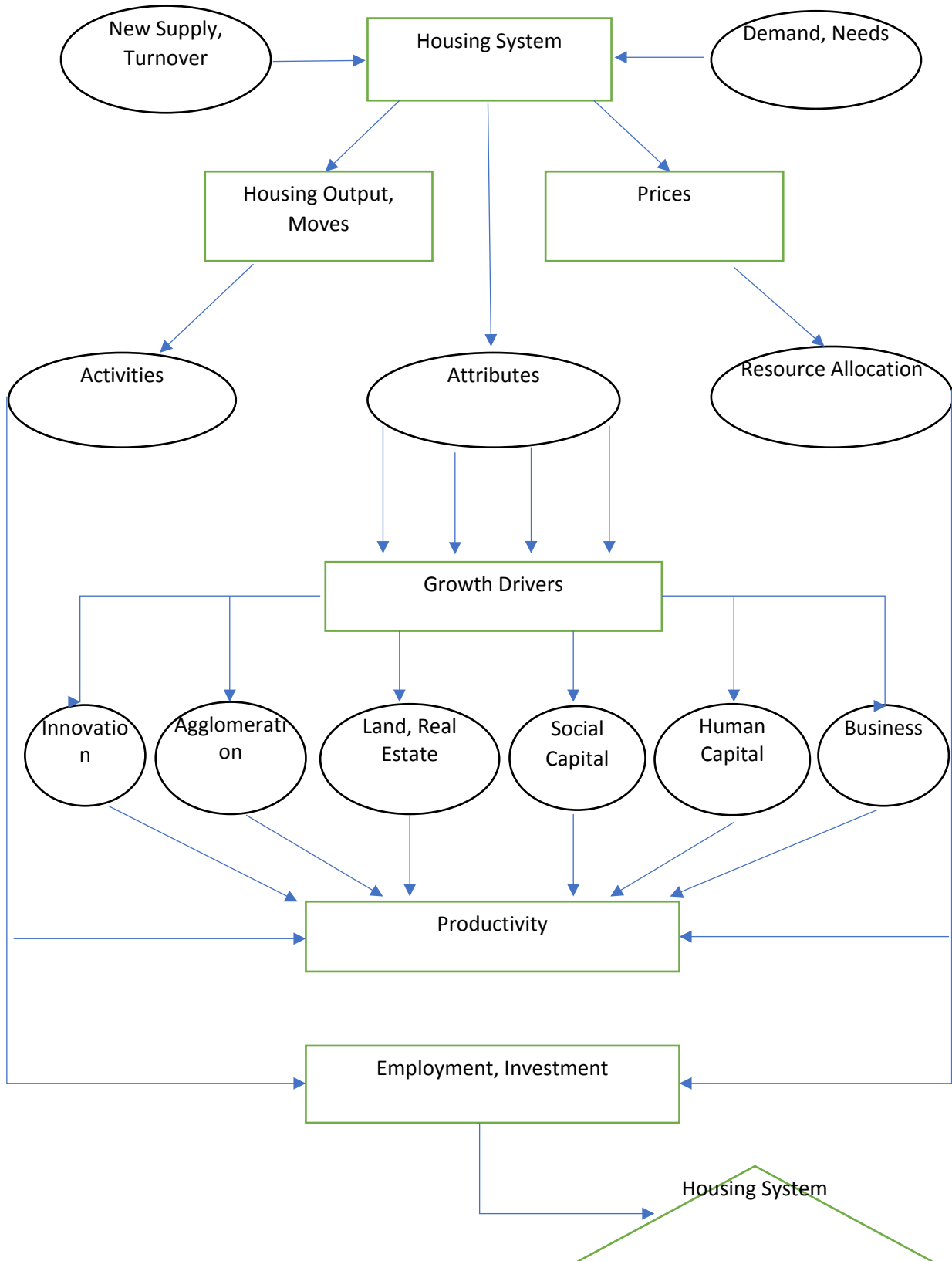
A broad heuristic model, or mapping of the potentially significant connections between Metropolitan housing system functioning and the major outcomes in the economy are identified in Figure 8. The links of housing to short term income/employment and wealth are already quite well developed but the 'Productivity' box in Figure 8 is often empty in the policy process and needs much greater attention to make growth and productivity connections.

A relatively simple but useful heuristic 'Housing-Productivity' framework can be set out. The interactions of the housing demand (and needs) and supply systems in the housing market (THE HOUSING SYSTEM) generate adjustments through changing prices and turnover that induce HOUSING ACTIVITIES, but they also induce housing choices defined by their attributes (including housing size, type, quality, amenity, neighbourhood, locational accessibility and their prices). Housing ACTIVITIES and ATTRIBUTES were identified above as having potentially weighty economic effects, but a third effect on growth and productivity also needs to be recognised. Housing attributes and prices influence how households, and some firms, allocate their capital and borrowing power to the residential investment sector of the economy rather than to other investments, such as investing in education and human capital or in business investment. Capital ALLOCATION effects are important in shaping economic growth.

Housing induced activities, attributes and allocations will all matter in growth processes. Housing Activities will have direct effects on employment in income, but also impact aggregate productivity through their own relative productivity (as housing construction is usually identified as a relatively low labour productivity sector then a bigger share of housing construction in GDP will lower short-term productivity). Housing attributes, when used with other household resources, influence productivity through the established 'growth driver' capitals, particularly human capital, infrastructure, business capital and innovation systems (in ways described below) but also through the urban 'capitals' of agglomeration effects and neighbourhood social capital. Allocation effects directly impact short-term investment but

longer term economic system efficiency. The stylised flows of connections are represented in Figure 8.

With these broad, stylised sets of connections in place it is possible to begin to consolidate a stronger picture of housing system effects in metropolitan and regional economies.



PART IV. HOUSING, STABILITY, WEALTH, AND PRODUCTIVITY

5. HOUSING, THE ECONOMY AND SYSTEM STABILITY

i. Modified Keynesian Macroeconomic Perspectives

Housing and Aggregate Demand.

The Keynesian perspective on the economic system, though influenced by more recent thinking, has remained the important starting point for thinking about how major components (economic aggregates such as consumption and investment, or regions or industrial/occupational sub-systems) of the economic systems impact overall output, employment, and incomes in the economy. This macroeconomic system perspective is, arguably, the only approach that actually thinks of the role of the housing system in the aggregate economies of Canada and its major regional sub-systems. There is, for instance ‘industrial economics’ perspective on the housing system. Although the typical use of the macro-framework is too narrow in focus and fails to consider long-term and significant housing system output effects it still offers important insights into immediate recursive effects of housing ACTIVITIES on the overall economy. In particular, it shapes the economics discussion of the vulnerabilities arising from the housing system that trigger or reinforce wider economic instabilities. Whilst enhancing and de-risking national economic progress is the core remit of monetary and prudential regulatory authorities there has to be a concern that their actions may have significant ‘unintended consequences’ on the housing system that run well beyond their oversight and remit. That is, a critical consideration for well-designed housing system policies is for monetary and regulatory authorities to have a systems perspective on housing as well as the economy. This critically important issue is discussed further below.

Housing Activities, Output, Employment, and the Multiplier Effect

The traditional (Keynesian) economic perspectives on the importance of housing construction and other ‘activity’ processes, such as higher turnover, as a stimulus for economy recovery are widely understood and empirically estimated at Canadian and more local scales. The overall weight of housing in the economy can be estimated in different ways, but all the measures confirm the importance of the sector and its growing significance in this millennium.

One of the most frequently used ‘activity’ indicators is the contributions of residential real estate to Gross Domestic Product (GDP) or Gross National Product (GNP). In Canada, from January 2022 to the end of September 2022, the overall construction sector, along with real estate, rental, and leasing sector has contributed around a 20 per cent share of GDP (construction 7%; real estate, rental and leasing 13%) (Statistics Canada, 2022e). It has been noted that Canada's economic output around a fifth more reliant on housing than the US at the height of the housing bubble (Wong, 2022a). With current, early 2023, residential construction levels near record levels nationally it is unsurprising that housing demand levels, and their likely enhancement through significantly raised immigration inflows and major energy retrofits of existing homes, cause continuing concerns about medium term construction sector and house price inflation, and potential system instability.

At the subnational scale, although the residential construction output data was unavailable for the CMAs and municipalities, the share of provinces and territories presented in Table 2 indicates the importance of residential real estate at the regional level. In British Columbia, the share of the combined construction and residential sales/lettings industries was greater than 25% of GDP in the past five years and has been increasingly significant over time. The combined housing ‘activity’ contribution to regional GDP fluctuates around 20% in other provinces and territories. Marked decline of the housing ‘activities’ share of GDP can be found in Saskatchewan, Newfoundland and Labrador, and Nunavut (though the mainly regionally undifferentiated nature of monetary and prudential regulation policies means that housing sectors in these localities are impacted, possibly at the wrong time and in the wrong direction, but measures directed at pressured regional-metropolitan housing systems. This emphasises an important question as to how national system macroeconomic policy tools can take into account the different economic trajectories of different regional sub-systems.

Table 2. Percentage share of construction sector and real estate, rental, and leasing sector in GDP (%)

	2017	2018	2019	2020	2021
British Columbia	25.93	25.92	27.22	29.04	28.36
Yukon	24.69	26.32	25.54	22.93	23.46
Nova Scotia	22.43	21.77	22.13	22.80	22.97
Prince Edward Island	18.96	19.38	19.99	21.72	21.91
Ontario	19.95	20.00	20.24	21.63	21.34
Manitoba	20.04	20.18	20.31	20.88	20.54
New Brunswick	19.26	19.55	18.82	19.84	19.96
Alberta	21.08	20.32	19.71	21.39	19.44
Quebec	17.90	17.93	17.99	18.90	18.67
Northwest Territories	17.08	17.37	16.19	17.77	17.09
Saskatchewan	19.20	18.35	17.55	18.56	16.99
Newfoundland and Labrador	21.92	18.55	17.76	18.35	15.54
Nunavut	21.13	23.44	20.67	15.20	14.12

Source: Statistics Canada. Table 36-10-0400-01 Gross domestic product (GDP) at basic prices, by industry, provinces and territories, percentage share.

The recent extreme, by OECD norms, Canadian reliance on the share of housing sector activities to drive GDP growth raises two further concerns (Wong, 2022a). Growth in household mortgage debt has been central to raising the housing ‘Activities’ share in GDP and this complicates the conduct of conventional monetary policies when higher interest rates are required to slow inflation. Canada, and the OECD economies, are in the process of transitioning back to conventional monetary policies and there has to be a question as to whether non-conventional monetary policies deployed over the 5 years to 2021 had major housing system effects that macro-economic policy makers either did not anticipate or fell beyond their remit.

As posed in the paragraph above, do summative national statistics shaping monetary policy, such as the housing cost index, adequately capture important real operational features Canada’s major regional and metropolitan systems? And in a nation of spatially unbalanced housing systems, is monetary policy acting alone too blunt instrument to deliver effective housing policies? of Second, as household debt or residential investment, that proportionately

raises existing dwelling prices faster than new construction output grows, substantially rises the long-term productive growth capacity of GDP is slowed. In more general terms, accommodating monetary policies over the decade to 2022 have boosted the return on investment in interest rate sensitive sectors such as housing and real estate and discouraged investment in productive capital stock.

The conventional monetary policy wisdom into the 2020's was that central banks should target the overall inflation rate but not individual asset prices. Many central banks still lean to that orthodoxy so that piecemeal policy decisions do not distort growth. However, it has become clear that wicked issues such as heightened income inequalities, investments with major GHG effects and now, housing system outcomes can be exacerbated by 'asset blindness'. Looking at housing outcomes across the OECD, and not just Canada, it is not unreasonable to ask 'has macro-system policy too long adopted a neutral or permissive position into raising the 'rentier' share of the economy. Slower productive economic growth and leaving the country, and especially its growth engine cities and regions, more vulnerable to an economy correction, unless ever more restrictive prudential regulation and stress testing are deployed, is an experience of the last decade that Canada should seek to avoid in the next. What institutional arrangements could be made to ease these difficulties. This may require rethinking a range of fiscal and macro-policy arrangements, and indeed a restructuring of housing supply side policies rather than, unrealistically arguing for a Bank of Canada house price inflation target. The problem will not go away without better policy coordination within and between Canadian governments.

The macro-system upside of housing 'activities' is that they increase employment GDP. Statistics Canada state that the residential building construction industry had 312,255 employees in 2021, and the real estate sector 289,230. Table 2 presents the share of employment in residential building construction sector (2361) and real estate sector (531) in 2021. This figure also presents that in CMAs, the percentage of employment in these two sectors varies from 2.12 per cent to 5.07 per cent.

The scale of the housing sector, that macro-economic policymakers for too long have understated by focussing primarily on the 'construction' effects and not wider 'Activities' makes it an important system in the economy. And this has, in policymaking, been long given and enhanced significance in stabilisation policies designed to mitigate overall economic downturns (whether induced by cycles or shocks). This between housing and economic policy arises because housing construction is labour intensive, has (at least historically) a low import content, and can also be regionally spatially targeted (say to where unemployment is growing fastest). That is housing spending has a high 'multiplier effect' as money spent on construction generates incomes that are quickly recycled into regional and local economies. Housing is linked to the land market and a variety of professional services, including real estate brokers, attorneys, and engineers, as well as assessors and advertisers. Construction and renovation, through backward and forward linkages, is connected to other industrials too. In consequence policy expenditures on new housing construction and renovation are usually comparable to, or even larger than, other types of infrastructure spending, such as construction of highways and streets (Doling et al., 2013; NHFIC, 2021).

The Canadian Home Builders' Association records, for 2021, that new home construction, renovation, and repair, meant \$182.7bn of investment, supporting 1.44 million on- and off-site jobs, and paying \$95.6 billion on wages. They found that employment is split between 59 percent in renovation and repair and 41 percent in producing new units (Canadian Home Builders' Association, 2022). Figure 9 displays the increasing investment in residential construction, provided by Statistics Canada (2023) and Figure 10 presents their estimate of

job creation in all CMAs in Canada. Although this figure only accounts for residential construction sector (including new home construction, renovation, and repair), the proportion of overall employment ‘attributable’ to these housing activities is much higher. High housing multiplier effect of housing construction generate the additional ‘attributable’ jobs.

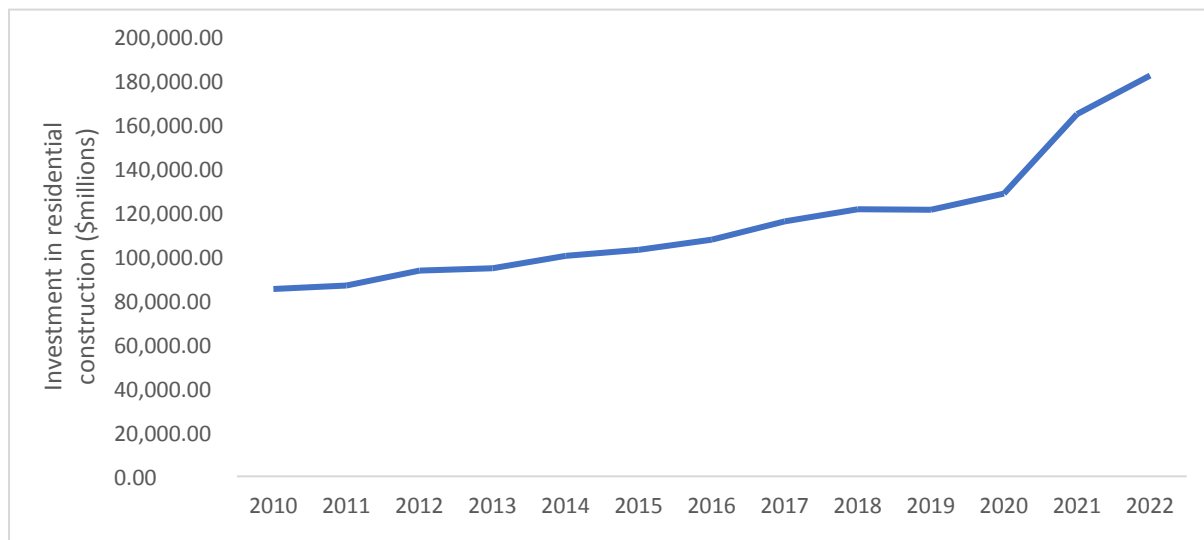


Figure 9. Investment in Residential Construction (\$millions: seasonally adjusted - current)

Source: Statistics Canada (2023).

In traditional macro-economic policy thinking, rising incomes drive increased housing demand with consequent feedback effects through the multiplier. Since the mid-1990’s there has been a growing literature on how housing wealth, discussed further below, can be ‘released or withdrawn’ given modern mortgage regulation and capital markets. That is the economic interface between housing assets, and the housing system, and the economy has become more complex and recursive as homeownership and net housing assets have increased. It is now well recognised that housing equity withdrawal (through re-mortgaging and home equity lines and a general sense of feeling wealthier) can reinforce upswings in the economy and, when prolonged flat prices or negative equity prevail, prolong recessions and downswings. These, and related issues, are widely discussed in Smith and Searle (2010) and in Duca et.al. (2021). Canadian research, not least by the Bank of Canada, was at the forefront of this corpus of knowledge. It is estimated that in upswings each additional \$ of home value induces between 0.12 and 0.05\$ of additional household spending.

Housing assets, as discussed in the sections below, can be used as collateral by households to provide finance for business investment through home equity extraction and personal guarantees, and that in turn generates employment and income for small businesses. The connection between housing and small business development has been widely examined (for instance, Bahaj et al., 2020; Chakraborty et al., 2018; Reuschke & MacLennan, 2014; Schmalz et al., 2017), nevertheless, this strand of literature is almost entirely missing in Canada and is surprisingly absent in research and economic policy in the large metropolitan areas.

Housing wealth effects impact macroeconomic performance and further recognition of these effects flowing from the housing system need to be recognised. It is noteworthy how, below the national level, sub-national entities (Provinces and major metropolitan areas appear to relatively scant attention to how housing scale, instability and wealth effects impact their local economies.

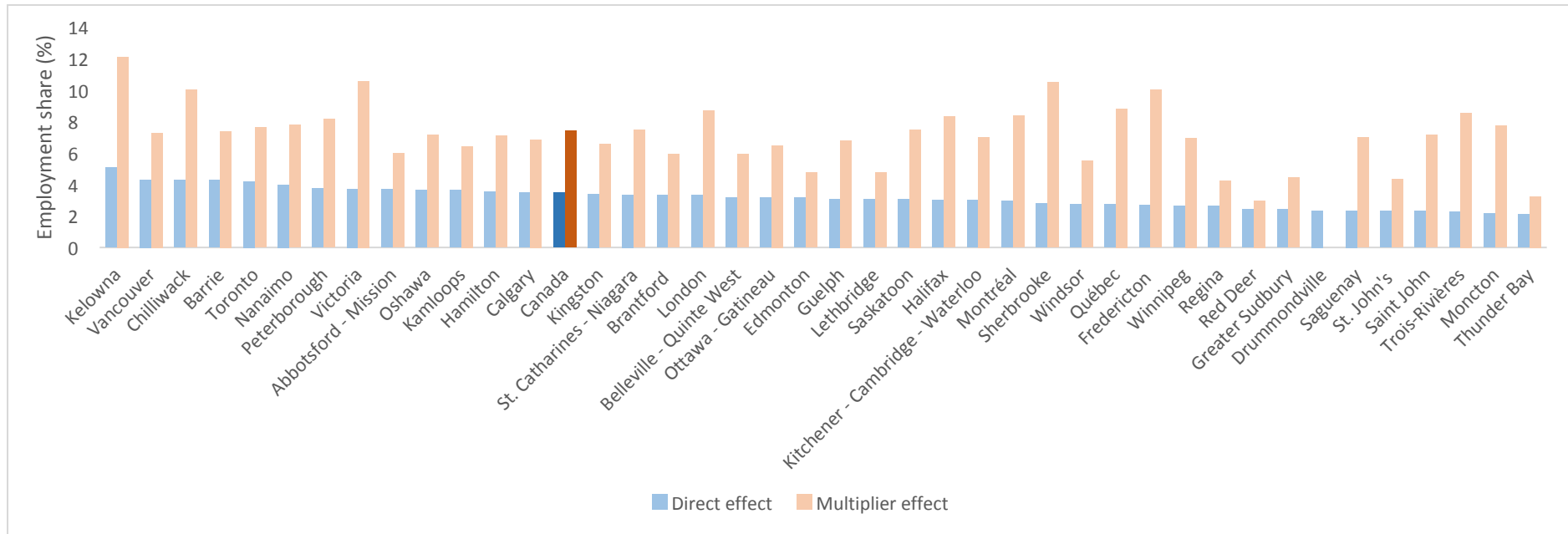


Figure 10. The percentage of residential building construction sector (2361) and real estate sector (531) in 2021

Source: Statistics Canada. Table 98-10-0448-01 Industry groups by class of worker including job permanency, labour force status, age and gender: Canada, provinces and territories, census metropolitan areas and census agglomerations with parts; Canadian Home Builders' Association

Note: The multiplier effect only reports the employment in residential building construction sector; no data available for Drummondville.

ii. Housing System Outcomes and Financial and Economic System Effects.

The vulnerabilities to stability in the national housing market, that threaten to exacerbate economic (growth) cycles and, more rarely, the stability of the financial system grow, not in the abstract, but in real local regional and metropolitan housing systems. They do so with variations in magnitude and timing and from place to place, in ways that make monetary policy (with its nationwide parameters) a less than ideal instrument to cool particular regional or metropolitan housing markets. Instabilities emerge, or are reinforced, from rising household debt and housing market demand-supply imbalances (August et al., 2022; Pittis, 2021). The Bank of Canada uses two indicators to track the evolution housing related vulnerabilities in the Canadian economy, namely the ‘elevated’ level of household indebtedness and house price changes. The latter, usually, largely drives the former.

High Household Indebtedness and Systemic Financial Sector Risks.

Financial crises differ in their causes (Rogoff, 2012). Housing finance circuits always play a significant role in downturns, invariably with reinforcing effects but, in around half of major downturns, a more leading role. For instance, worries about systemic financial sector difficulties in March 2023 are a consequence of a limited number of bank failures in the US and Switzerland and do not arise from housing system functioning. But such bank failures would impact housing market stability if ‘crisis’ policy response measures are insufficient. In contrast, the causes of the global financial crisis (GFC) of 2007-8, lay in housing finance, market, and policy systems. The GFC originated not in Canadian, nor in most OECD, housing systems, but in poor mortgage lending practices, inadequate regulation, and over-enthusiastic policy promotion of homeownership to low income households in the US. Low quality loans in bundles of securitised US mortgages led to defaults on payments that sharply reduced the value of mortgage backed securities (MBS) held by investors but particularly commercial banks. Throughout the OECD, some banks, without due diligence, held large tranches of MBS in their reserve assets (as they offered apparently high returns with low risks). When these banks lost substantial parts of their asset base as the value of MBS assets plummeted, a major systemic crisis sharply developed across global banking networks. That financial crisis quickly became a recessionary economic difficulty as interest rates increased. These recessionary effects were minor in Canada (and Australia) relative to other OECD economies.

After the GFC emergency OECD governments had a suite of policy responses that shaped global economic progress until the onset of Covid-19. Some, such as the UK, adopted an ‘austerity’ approach to fiscal and budgetary policies (many did not) but monetary policy adopted less conventional means, with very low interest rates and quantitative easing (QE) to stimulate demand. Most central banks, following the lead of the IMF, developed more regular scrutiny of housing and mortgage market trends. National agencies adopted much tighter rules around mortgage lending (stress testing) as part of a marked increases in prudential financial regulation. Prudential regulation, usually run by a government body other than the Central Bank, in the Canadian case OFSI, became (by 2015) a critical influence in housing finance and in lending to individual borrowers, both as homeowners and investors, and to non-profit organisations.

Non-Conventional monetary policies and low interest rate strategies became even more important with the onset of the Covid-19 pandemic, with the Bank of Canada (BOC) cutting the key (overnight) interest rate to 0.25% and the scale of QE during the COVID-19 crisis far surpassed 2008 levels (August et al., 2022). A case can be made that housing investment has been more impacted than all other major sectors by these policy changes.

Figure 11 plots the evolution of the debt-to-income ratio (DTI) for Canadian households in the past 10 years. The ratio remains historically high, having declined marginally since 2021. This suggests that the vulnerability of mortgage borrowers, and hence overall economic stability, has increased as a growing share of Canadian households have accumulated high debt levels relative to their incomes over the last decade.

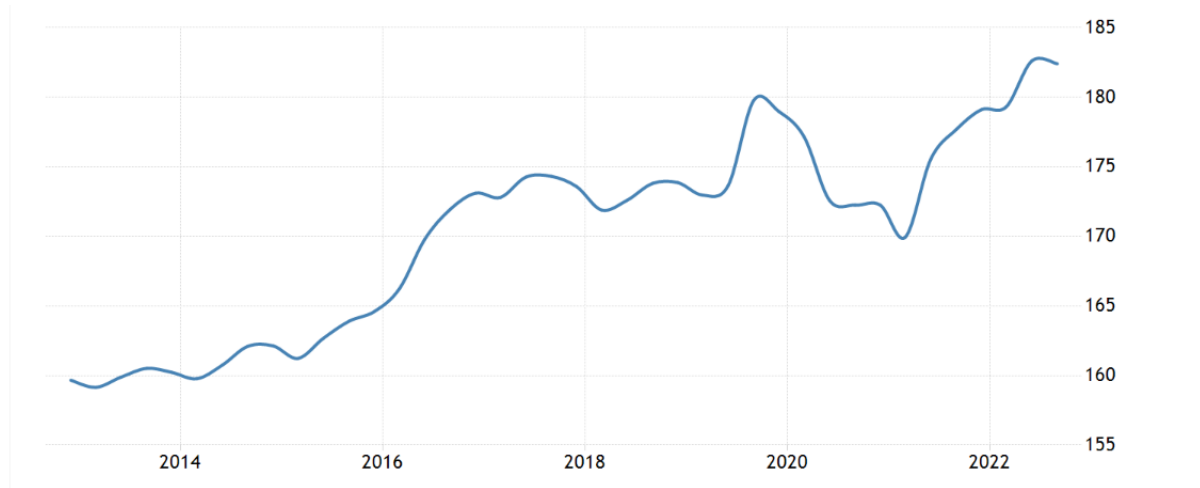


Figure 11. The ratio of credit market household debt-to-income for Canadian households

Source: Trading Economics; Statistics Canada. Available at: <https://tradingeconomics.com/canada/households-debt-to-income#:~:text=Households%20Debt%20to%20Income%20in,the%20first%20quarter%20of%201990.>

The past upward movement of the DTI is now problematic with the onset of the monetary tightening (interest rate increasing) cycle, in March 2021, see Figure 12 and Figure 13. One direct consequence of the tightening cycle was a decrease in housing transactions and mortgages originated after mid- 2021 (Bank of Canada, n.d.). Moreover, the share of new mortgages with a debt service (mortgage repayment to income) ratio greater than 25% increased from 12% in 2021 (Q4) to 27% in 2022 (Q3). Obviously, the increase in mortgage rates (including 5-year variable mortgage rate and 5-year fixed mortgage rate) has directly impacted both recent purchasers and owners refinancing mortgages. The DTI ratio, see 10), ratio means that Canadians owe \$1.83 for every \$1 they take home.

Since mid-2020, new borrowing patterns have become more problematic (August et al., 2022). Some households have taken on significantly more mortgage debt leading to overall household debt rising despite a steady decline in other consumer debt (Macklem et al., 2021; UBS, 2022). Rising mortgage debt reflected rising house prices during the pandemic. Existing Canadian owners, supplemented by overseas investors, all with large tranches of housing equity, faced both low mortgage rates and a low real user cost of housing capital, chose to increase the value and number of homes they owned. These purchasers, along with the children of more affluent owners with access to the Bank of Mum and Dad, could rationally, and readily, borrow more mortgage finance and still negotiate stress tests comfortably as existing wealth became a more important driver of effective housing demand,

More detailed analysis suggests that two important features of the mortgage market have amplified the risks associated with high household indebtedness. New mortgage debt in 2020 was issued primarily to households with a high loan-to-income ratio and a high loan-to-value ratio (Macklem et al., 2021) and this proportion reached 26% in 2022 (Q1) (Yang et al.,

2022). This period also witnessed an increasing share of mortgage-based home purchases by investors in 2021 (Macklem et al., 2022) (though this ratio has dropped to 20.3% in 2022 Q3). This higher proportion of mortgages taken out by borrowers with high loan-to-income ratios increases the risk to macro-financial stability (Macklem et al., 2022), unless of course they were deploying asset-backed leveraging strategies.

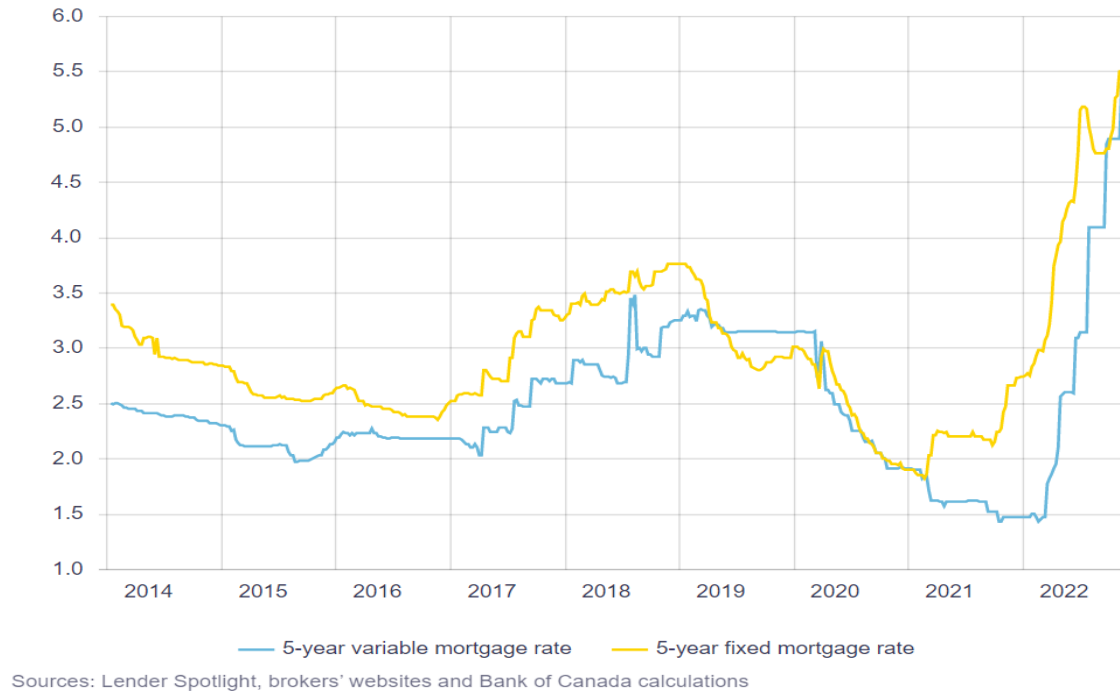


Figure 12. 5-year variable mortgage rate and 5-year fixed mortgage rate

Source: Bank of Canada (n.d.).

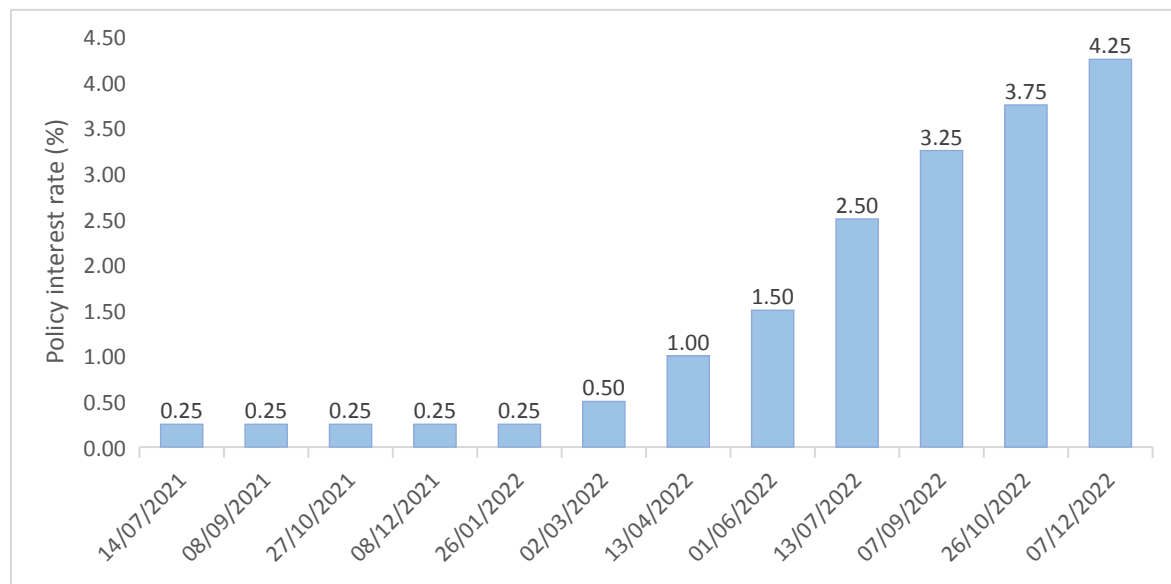


Figure 13. Target for the overnight rate

Source: Bank of Canada. <https://www.bankofcanada.ca/core-functions/monetary-policy/key-interest-rate/>

With the rapid increases in the policy interest rate by the Bank of Canada, since March 2022, borrowers with variable-rate mortgage, see Figure 12, have faced large interest rate increases that make payment difficulties a significant possibility (Murchison & teNyenhuis, 2022) and current difficulties are also recognised by The Bank of Canada, in their Financial System Review-2022, as they expressed a concern that higher interest rates will increase the vulnerability of highly indebted households. Although the financial health of households has generally improved since the start of the pandemic, the increase in liquidity buffers is smallest for highly indebted households (Macklem et al., 2022). The faster accumulation of debt than income indicates more risk since households are promoting economic growth with future income, in contrast to business debt (Wong, 2022b). Furthermore, high household debt leaves households highly exposed to future interest-rate increases and economic downturns (Pittis, 2021), which would ultimately be reflected in a decline in private consumption during an economic downturn (Macklem et al., 2022). Excessive levels of household debt also negatively impact future GDP growth in the medium and long term, primarily due to debt overhang effects (Mian et al., 2017). The Bank of Canada's Financial System Reviews—2021 and 2022 point that the current financial system vulnerabilities have increased the downside risk to future GDP growth in the medium term in Canada (Macklem et al., 2021, 2022).

These housing to finance system connections were outlined in some detail, because, with the wisdom of hindsight, it is becoming apparent that the interaction of non-conventional monetary policies and prudential regulation, through stress testing and the enhanced importance of borrower equity/down-payment requirements, significantly changed how local housing systems operated. It is reasonable to pose the question whether the policy fractures in the understanding and governance of housing systems within the Federal Government have shaped unintended, but not unknowable consequences, in the Canadian housing system, in both rental and homeowner sectors. Changing the transmission mechanism between financial markets and local housing systems may have calmed systemic financial sector risks but these changes, may have exacerbated systemic housing sector risks and increased rental sector burdens and pressures, frustrated ownership ambitions and condemned more less capable Canadians to hopeless homelessness, at rates beyond the National Housing Strategy could ever catch up with them.

Financial stability is a core goal of governments. Whilst not advocating riskier long-term economic strategies, there have to be some reservations regarding the management of the interface between housing and finance systems and housing outcome policies. Reviewing the last decade, indeed two decades, of financial policy there is sense of imbalance in policy attention between housing market upswing and downswing periods. There appears to be little apparent macroeconomic policy action to forestall high house price appreciation. Much more financial and monetary policy effort and attention is apparent in the downswing. Monetary and prudential regulation policies focus on chasing the horse that has bolted rather than prudently fixing the stable door. Arguably the really prudent long term financial policy for the economy and the housing system would be to bear down on rising house prices. Arguably inattention to house price inflation and the performance of the housing system, rather than reckless lenders and feckless borrowers lies at the core of the dilemmas Canada, and indeed many other countries, now face.

There is a lesser question facing policymakers. Namely, existing notions of vulnerability may no longer be as useful a measure of borrowing riskiness than in the past. For all owners, mortgage exposure has been also associated with significant increases in their asset values (Daoust et al., 2021). A much more fine-grain assessment of the housing system changes

arising from the long period of non-conventional monetary policy allied to mortgage prudential rationing is overdue. It is likely that average debt to income ratio no longer represent the same distribution of mortgage borrowing as in the past. Once again, established housing wealth has reshaped traditional income related magnitudes, such as overall housing spending and mortgage borrowing for older and above middle-income households. Whilst mortgage borrowing may, on average, become safer over the last decade, there must be a reasonable concern that the mortgage market has become safer by serving Canadians with assets and foreign investors looking for a ‘safe haven’ whilst excluding younger Canadians with ownership aspirations. Clearly, however, the growing share of difficult mortgage cases associated, as discussed above, with the interest-rate tightening process require continuing policy scrutiny.

OFSI have recently called for tougher mortgage loan stress testing, but any such action needs to be based on a wider, longer scan of what prudential regulation does to the housing system. Prudential regulation, as noted above, has also rationed hundreds of thousands of younger Canadians out of homeownership since 2016 and shifted them into already pressured rental housing sectors. Neither the BoC nor OFSI have a policy responsibility for rental housing market outcomes, other than the safety of landlord loan repayments. And nobody seems to have Cabinet responsibility for the rising real house prices that appear to sit underneath the problems of risky mortgage borrowing. With mortgage arrears and defaults reduced by prudential lending the housing system is safer for the Canadian financial system but more attention needs to be paid to the housing ‘systemic’ costs of that enhanced safety and the short and long term distributional consequences of these outcomes. There is a case for reviewing the governance of financial sector/monetary policy links with the housing system as a whole and not merely ‘mortgage vulnerability’.

Metropolitan Dimensions of Instabilities

The range of issues discussed above reflect, in part, a misalignment of the geographic scales at which different real functional systems operate and where autonomies for effective system management lie at different scales. In effect, monetary policies have to be conceived at macro-aggregate system scales (capital markets, in contrast to housing systems, can be fast, global, swift systems) whereas much of housing change takes place in sub-national, and as illustrated in the first sections of this paper, and unbalanced, out of equilibrium systems that have both fast and slow sub-systems operating. Monetary policy making has to be high-level and reductionist. Has it become too reductionist in having little more than an ad hoc interest in housing systems. Or has it been made a less effective policy instrument because other policies, either fiscal policies, the weakness of regional policies or inattention to real supply systems have created a plethora of diverse, slow regional/metropolitan systems that frustrate monetary policy management?

Are there important empirical insights regarding the spatial incidence of monetary and prudential regulatory effects? Average household indebtedness varies across CMAs. Unfortunately, unlike the detailed information on the MSA-level DTI in the USA, where this ratio ranges from 0.576 in Elkhart-Goshen, IN to 3.364 in Prescott, AZ (The Federal Reserve, 2022), data to illustrate the evolution of the household debt-to-income ratio (or debt service ratio) by CMAs over are absent in Canada.

The Canadian Council on Social Development & Prosperity Canada (2019) looked at Canada’s 35 CMAs, ranking and grouping CMAs based on their overall household financial health. The study found 10 cities with total DTI ratios greater than 150%: Saskatoon, Calgary, Guelph, Victoria, Kelowna, Barrie, Oshawa, Toronto, Abbotsford-Mission and

Vancouver (see Table 3 below). This table indicates that household indebtedness is not evenly distributed within CMAs, with households in some areas struggling to balance their income, debts, and assets while households in other areas living comfortably and suffering less risks. At these scales, and with such variable geographic impacts monetary and regulatory policies have markedly different implications for housing outcomes and economic development. Perhaps it is time to strengthen the national understanding of more local system impacts on housing market stability and performance by developing coherent, appropriate scale of national to local system effects.

That sentiment, for harmonising, national, monetary policy better with real, sub-national, housing market change requires government thinking across system levels. Recent econometric and modelling research for the USA, R. Gupta et al. (2022) and Bahaman-Oskooee et al. (2023) explores national to sub-national connections between monetary policy changes and macroeconomic shocks with more local housing system outcomes. R. Gupta et al. (2022) exploring the synchronisation of house price changes across the USA, decomposed the drivers of house price changes in the USA into explanations at Federal, Regional (dividing the nation into 4 macro-regions) and State levels (noting in their conclusions that more local and metropolitan scales would have been a more appropriate local dimension). They explored the house price responses of different levels systems to macroeconomic shocks and changes. They concluded that national level changes (macroeconomic shocks and policy changes) explained over a third of the space-time variation in house price inflation. Regional factors also mattered. A subsequent study of the impacts of monetary policy on housing permits at state level demonstrated significant, strong relationships between the demand for housing permits and monetary policy changes and emphasises asymmetric effects with contractionary monetary policy having faster and stronger effects in reducing permits (Bahaman-Oskooee et al., 2023).

Such research appears to be missing for Canada and that gap should be remedied quickly, with perhaps a focus on metropolitan and rural-region scale modelling and analysis. It is important for Federal policy discussions for two reasons. First, it further debunks the mantra that ‘housing is a local problem caused by inadequate planning authorities’ and places the design of monetary policy as part of the suite of changes required to reduce house price inflation. Secondly, it speaks to the need for Federal Canada to have an informed multi-level assessment of how policy actions are likely to impact local systems and in different ways. At present there is a serious gap, at Federal and other levels, in policy relevant modelling for the Canadian housing system. Arguably, a policy research network within Federal Government, comprising experts from the Bank of Canada, The Departments of Finance, Infrastructure and Labour and CMHC should be established to review the issues and ways to resolve them, working with other orders of government, SSHRC, major banks and others.

The Canadian Council on Social Development & Prosper Canada (2019) also constructed a Neighbourhood Financial Health Index (NFHI) that takes into account critical factors such as household income, consumer debt, mortgage debt, liquid assets, real estate assets and neighbourhood poverty. This report argues that western CMAs tend to have above-average levels of financial health, whereas cities in Quebec and the Maritimes tends to score below the average. There is significant variation between Canadian cities, mirroring the influence of regional and local factors shaping household financial health. Within CMAs, the household indebtedness used to concentrate in downtown, as now spreading throughout the CMA.

Relatively few cities or other sub-national entities have emulated the CCSD sub-national work, and this is a missing element in local housing system analysis that could improve both

local housing performance and national monetary policy if undertaken systematically across the country.

Table 3. Distribution of CMAs by total debt-to-total income ratio, all households 2016

Ratio	CMAs
0.00-1.00 (8.6%)	Trois Rivières, Thunder Bay, Greater Sudbury
1.00-1.25 (34.3%)	Kingston, Saguenay, Ottawa, Belleville, Peterborough, St. Catherine's-Niagara, London, Québec, Saint John, Windsor, Sherbrooke, Brantford
1.25-1.50 (28.6%)	Winnipeg, Halifax, Regina, Lethbridge, Moncton, Hamilton, Kitchener-Cambridge-Waterloo, Montréal, St. John's, Edmonton
1.50-2.00 (25.7%)	Saskatoon, Kelowna, Toronto, Calgary, Barrie, Abbotsford-Mission, Guelph, Oshawa, Victoria
2.00+ (2.9%)	Vancouver

Source: Canadian Council on Social Development & Prosper Canada (2019), Figure 5.

Imbalances in the Housing Market

Realities versus Expectations

Although it has no formal remit to specifically target housing sector changes or balance national and regional housing systems, the BOC, in addition to concerns about mortgage market vulnerability arising from interest rate increases (a concern that may be driven by financial market interests more than housing outcomes), has become an informed analyst of major shifts in national housing markets. That housing system interest, unlike the weight of policy actions, is concerned with boom and upswing price outcomes, not least when OECD and IMF predict unsustainable Canadian metropolitan booms, even bubbles (that, ex post, usually fail to unfold in the ways predicted).

This paper's concern about present BOC arrangements, building on the comments above on missing research, is not regarding the depth housing system knowledge but the narrowness of their remit in policy decisions to manage housing upswings. The core concerns of BOC and OFSI are not general housing affordability but financial market instability. Over the last decade the Bank has conducted a growing volume of research on regional and metropolitan housing system changes. Their broad conclusion, that squares with CMHC reports and the limited academic research available, is that potential instability stems from imbalances, and their consequences, in particular local/metropolitan housing systems. Put another way, as is self-evident at present, pressured local housing systems have past outcomes that have significant, direct effects on the formation of macro-policy. That is, the BOC has no remit to focus on housing market outcomes, but their major policy choices can be severely constrained by past housing outcomes. There seems to be an important missing link in this approach to housing systems and instability.

The Bank of Canada, based on their evidence, argues that imbalances in the housing market arise as housing demand is fast changing in response to changes in drivers but that supply responses are relatively slow and price inelastic. Demand increases trigger rapidly rising prices, and these prices increases boost expectations of further house price inflation so that house price rises, for at least some period, induce demand increases and not demand suppression. These periods of 'non-equilibrium' behaviour of local housing systems appear to

be neither short-lived nor infrequent in major metropolitan areas (MacLennan and Miao, 2019). Badly-behaved housing markets often prevail in metropolitan Canada with housing demand and prices becoming disconnected from underlying fundamentals. ‘Market Correction’ means potential financial instability. ‘Non-Correction’ means a semi-permanent housing affordability problem. BOC tend to focus on the former (Macklem et al., 2021, 2022) rather than the latter.

Metro Toronto and Metro Vancouver have been regularly ranked among the ‘biggest property bubbles in the world’ (UBS, 2019, 2020), with Toronto topping the index in 2022 (UBS, 2022) and exhibiting pronounced bubble characteristics (see Figure 14). CMHC (2021) also reports that the degree of vulnerability of the housing market is high in Toronto and Montreal. It has been argued that part of the increase in house prices may reflect extrapolative price expectations (Macklem et al., 2022), consistently dissociating house price growth from fundamental and making it more likely to become self-fulfilling (Yang et al., 2022). Emenogu et al. (2021) constructed an indicator of house price exuberance. Using this indicator, Bank of Canada shows that after early 2020 extrapolative expectations have increased in most Canadian cities (Yang et al., 2022). The Canadian Survey of Consumer Expectations conducted in 2022 (Q3) revealed that even as house prices began to decrease compared to the previous year, many Canadians were still anticipating that house prices would increase over the next year (Bank of Canada, 2022). Extrapolative expectations at some local areas, such as Toronto, Hamilton and Montreal, have gained impetus (Macklem et al., 2021). If these extrapolative expectations (or what Shiller labelled, ‘irrational exuberance’) persist through 2023 they may become self-fulfilling as the Canadian economy recovers as predicted.

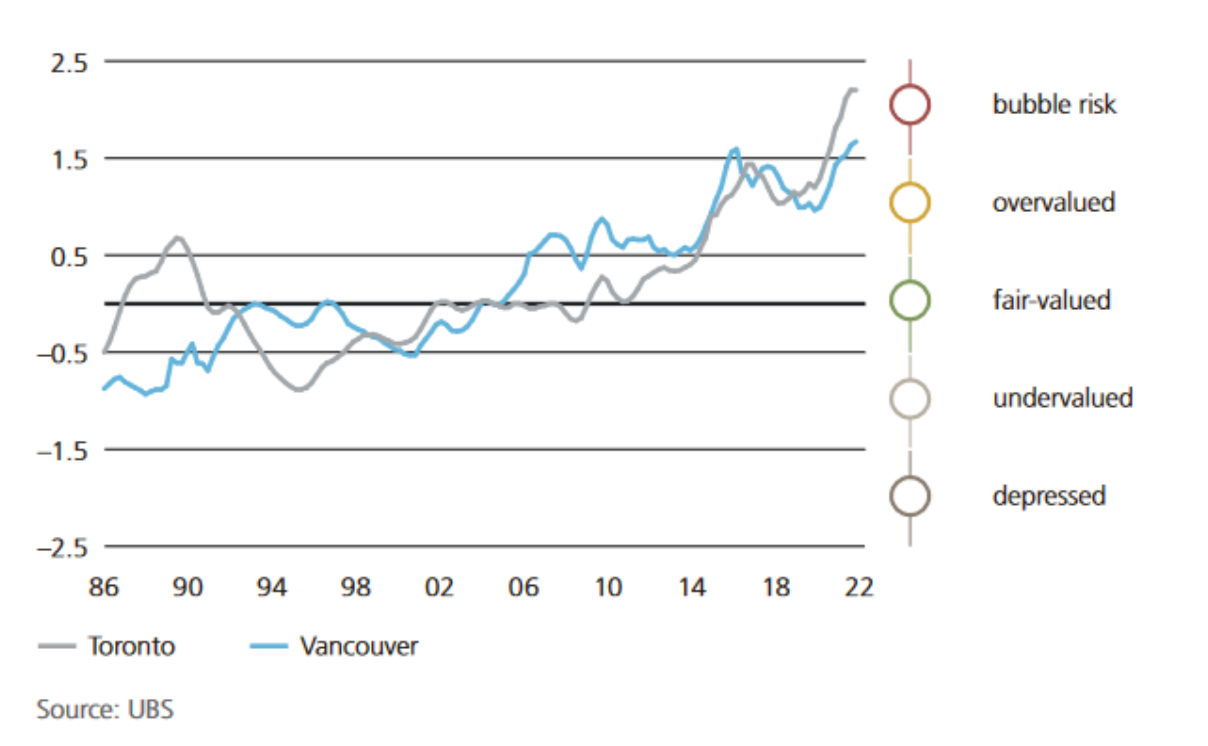


Figure 14. Historical development of bubble risk in UBS: Toronto and Vancouver

Source: UBS (2022).

One indicator of ‘extrapolative expectations’ is the increasing share of investors in homebuyers (Macklem et al., 2022). The Bank of Canada has calculated the share of

mortgage-financed home purchases associated with three types of buyers: first-time homebuyers, repeat homebuyers and investors (in order to identify financial vulnerabilities associated with different types of homebuyers) (Khan & Xu, 2022). They report that, in Canada since 2014, first-time homebuyers are usually the largest group, comprising almost half of homebuyers, followed by repeat homebuyers (31%) and investors (19%). However, there appears to have been a displacement of first-time purchasers by investor purchasers in recent years. Punwasi (2022) argues that cities in Ontario, British Columbia, and Atlantic Canada have seen around 1 in 3 of recently completed homes go to investors. The share of investor-owned housing is highest, in general, in the most pressured metropolitan areas and regions. For instance, in Bay Roberts, 49.9% of the total stock and 92.1% of new construction was purchased by investors³.

Extrapolative expectations, particularly among investors, could amplify the vulnerability associated with elevated house prices (Khan & Xu, 2022; Macklem et al., 2022). Investors' demand for housing is argued to be more sensitive to shifts in market sentiment than that of other homebuyers, which suggests that they tend to push up house prices in hot markets and exacerbate price decline during a downturn (Punwasi, 2022c). Did prudential borrowing have perverse effects? More recent data on repeat sales from Tetranet suggest that property 'flipping' of the earlier boom period is no longer prevalent.

Alter and Mahoney (2021) quantify downside risks to housing markets using a sample of 37 cities across the United States and Canada (*from 1983 to 2018: pre-COVID era*). Their model shows that Canada's housing market was about 30 percent overvalued as of 2018Q3. Moreover, while the downside risks to housing markets have fallen in the US, they have increased in Canada post the GFC.

The post 2021 interest rate tightening cycle has led to substantially decreased housing system transactions and the housing prices in Canada with most CMAs experiencing price and volume declines though at different rates. House prices are declining more in Ontario and parts of B.C. than they are nationally (Canadian Real Estate Association, 2022). House price reductions in Canada through 2022 were in the upper half of the OECD set but with further significant interest rate increases unlikely, augmented immigration targets, and near full employment there is a widespread expectation that housing activities and housing prices are set to expand through 2023. (Canadian Real Estate Association, 2022). The Bank of Canada are more cautious and are uncertain whether recent market pressure decline is temporary or likely to be more persistent decline. If there is now a temporary pause in upward market pressure this may be a time for the Bank and the Government to rethink the governance of the housing market system, address the apparent policy 'fractures' in the management of housing system policies and develop a mission to treat house price inflation with the seriousness and radical action that wage inflation attracted almost half a century ago.

Supply and Demand Imbalances

Academic research (Glaeser and Gyrko, 2012) suggests that booms and bubbles are more likely in markets with inelastic supply. It is only in the last decade that the notion of local housing supply shortages has come to be regarded as a significant problem in mainstream economic policy thinking. Indeed, the almost universal international 'groupthink' in economics ministries has become that 'housing supply is the problem'. Most policymakers

³ In recent years, investors purchased nearly 20% of all newly built and existing homes in Canada. Punwasi's definition includes homes that are 'vacant, rented out to others, or used as a secondary property'.

believe that the problem lies on the supply side of the housing system, and this paper concurs with the view that active supply side policy is required. But the majority of policymakers see supply difficulties as someone else's 'problem', most likely attributing blame to restrictive, slow municipal or metropolitan housing planning. This paper profoundly disagrees with that conclusion. This, rather lazy, policy-belief set is not evidence-based and needs to be challenged.

Housing supply is indeed a problem in some Canadian housing systems, but not everywhere and always. 'Under-supply' is a relative notion, and it may reflect over-stimulated demand as well as sluggish supply. Finally, housing supply chains are complex, and it is inherent in market systems, in contrast to 'fast' demand systems, that they are 'slow' systems. Poor and slow regulation may matter in some, even many, instances but the slowing effects may reflect materials shortages, absence of skilled labour, missing infrastructures, and the behavioural choices of heavily localised housebuilding firms.

Whereas 'housing' policy has long emphasised the identification of needs and demands in local systems prior to public investment support, there has been no supply side equivalent of auditing the blockages and potential flexibilities of local supply chains. This imbalance in the 'infrastructure' of policy thinking and making may arise from the 'merit good' framing of traditional housing policies that is no longer adequate for framing 'local housing market strategies'. Housing supply chain audit should always have been as much of interest to housing policymakers, at national and local levels, as housing needs and demands. Without that strategic audit there can be no effective local housing market strategy and too often housing strategies focus solely on low income needs, thus focussing on symptoms rather than causes. Yet again policy is fractured by the absence of a housing systems perspective. And this fracture has to be fixed at regional, metropolitan scales where supply systems function.

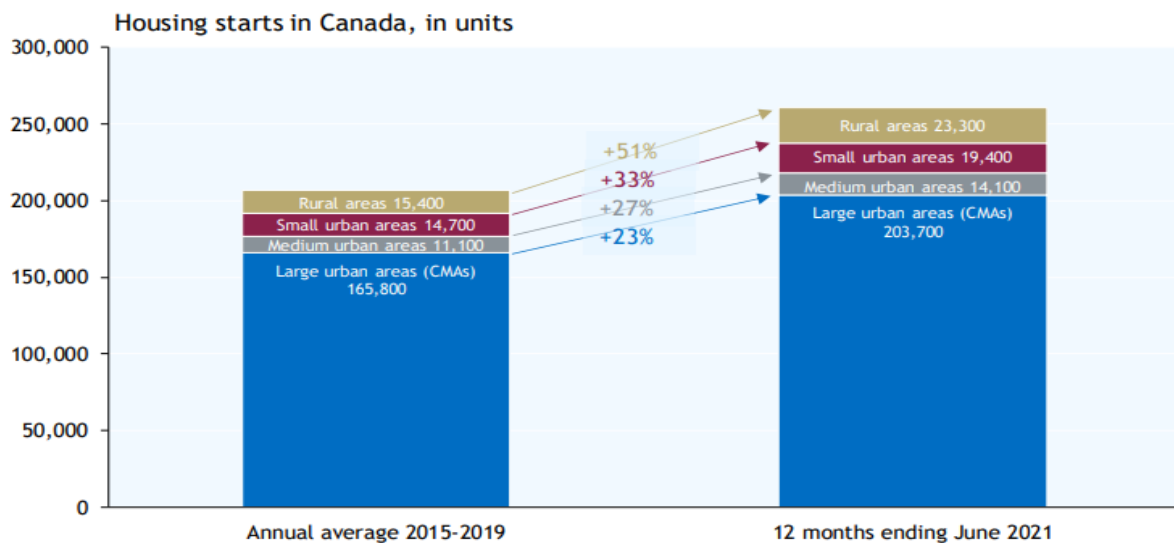
What does evidence say about Canadian housing supply systems? Although there had been relatively few detailed studies of housing supply economics prior to 2000, Reynaud (2015) notes that previous research believed that the completion of new housing units outpaced household formation from the start of the millennium until the GFC (Bank of Canada, 2013; Dupuis & Zheng, 2010; Lewis, 2008). Reynaud assessed development of the housing stock in 10 Provinces from 1982 to 2013 and concluded that sustained excess demand had not characterised Canadian housing markets through that period. Things have changed, and over the last decade Canada's housing supply consistently fell short of demand growth from mid-decade onwards until the onset of the Covid-19 pandemic (Hogue, 2021).

The RBC (2021) conclude that a continuing undersupply of market (and non-profit) housing does not reflect increasing planning delays, indeed they suggest that planning permission times have been reduced to 2021, but that average completion times to complete dwellings has doubled and this may be attributable to other market issues, and not planning, such as the persistent shortages of materials and labour, supply chain-disruptions, and a higher proportion of slower-to-build multi-unit dwellings in construction totals (CMHC 2022c). This is not to suggest that slow planning approval processes are not problematic in some localities (recognising that the planning issues associated with some projects may be much more problematic than others). Using a different survey method and time period, the Canadian Home Builders Association (2023) report for 20 CMA's spread across the regions of the country that average permission time, 14 months, had not changed, for their sample average, between 2020 and 2022. Of the 20 markets analysed, 9 had become speedier since 2020 and 9 slower. Of concern, only 3 of the slowest 10 permissions systems in 2020 had improved their pace by 2022. Permission delays varied from relatively fast in Winnipeg and Calgary, both 5

months, to moderate in Ottawa and Vancouver, with times of 13 and 15 months respectively, to markedly slower, such as Hamilton with 25 months and Toronto, the slowest in the sample, at 32 months. Presently the number of homes under construction is at an all-time high, continuing the patterns depicted in Figure 15.

There needs to be a renewed national and local understanding of local housing shortages and supply systems. Since mid-decade (Reynaud) there have been sustained shortages. CMHC suggest, with the supply system already at near peak capacity, that output will have to double to 2030 accommodate household growth at pre-2022 immigration norms if prices are to remain relatively stable. Now immigration targets have been significantly raised and the challenge facing most localities in Canada is whether they have the capacity to more than double housing starts and completion rates by 2030. This seems an unrealistic view on the adjustment capabilities in local housing systems, and arguably a significant lack of understanding of how housing systems work and how long the ‘slow’ system takes even if operated with by skilled planners and providers. Believing that the problem is solely a municipal mess leads to an assumption that it can be cleared up quickly, and another complex system problem mistaken for a tame difficulty.

Smaller markets saw the biggest growth in new construction



Source: CMHC, RBC Economics

Figure 15. New construction in Canada

Source: Hogue (2021).

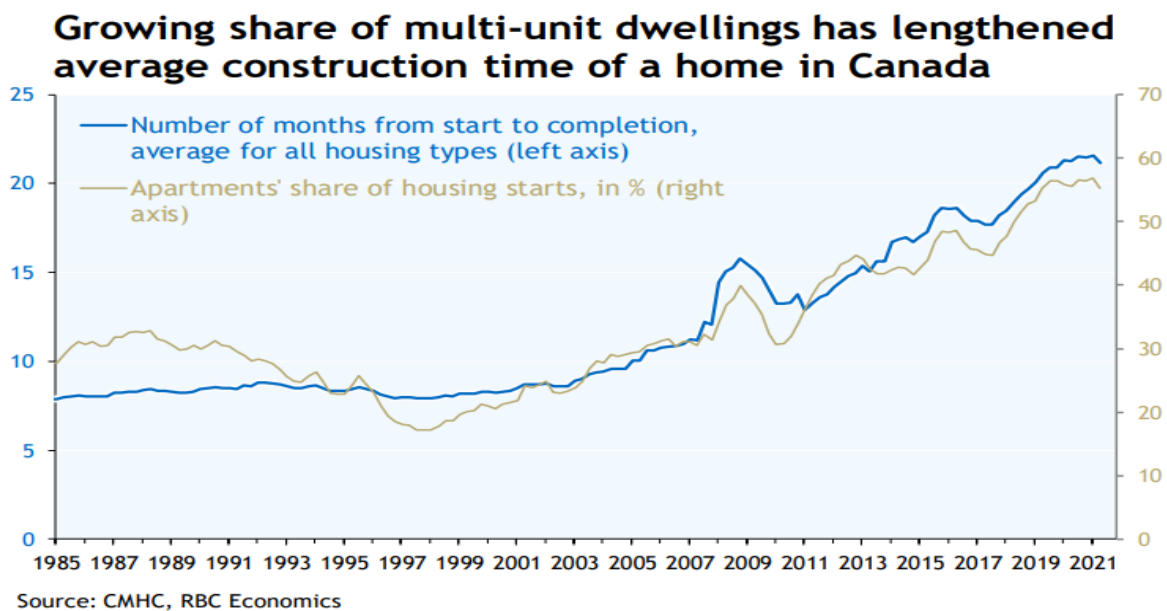


Figure 16. Lengthened completion time for multi-unit dwellings in Canada

Source: Hogue (2021).

The most recent, and convincing econometric analysis of housing supply elasticities in Canada is by Paixão (2021), and was commissioned by the Bank of Canada. He estimated housing supply elasticities for 14 major Canadian metropolitan areas using a ‘state of the art’ econometric approach. He developed a panel approach that included a range of city specific trends, industry structure and business cycle sensitivities and used local cycle effects to estimate housing supply elasticities. And he did so without having to resort to proxy measures of regulation and physical land constraints proxies for Canadian cities. Paixão’s estimates are, arguably, the best available for Canadian cities. They recognise a range of local economic factors in addition to regulation and physical constraints. His results are a basis on which to identify more or less elastic local/metropolitan supply systems.

Paixão (2021)’s results, as for metropolitan levels studies across the OECD, indicate significant heterogeneity in the estimates of supply elasticities across cities. Paixão estimates that a 1 percent increase in house prices in the median Canadian city (in that case, CMA) is associated with an increase in housing supply of 2.2 percent. The results in this paper also show that house prices in some cities are systematically more sensitive to regional cycles than house prices in other cities. Elasticities in Vancouver, Toronto and Winnipeg are 0.63, 0.63 and 4.34, respectively, although the distribution of elasticities in Canada is more skewed to the right, which indicates that a large share of cities in Canada have very elastic housing supplies.

Regretfully, little evidence of housing supply (or elasticities) within metropolitan can be found. The evidence from Australia shows intriguing results. Ong, Dalton, et al. (2017), and Ong, Phelps, et al. (2017) indicate that most of the growth in new supply has occurred in mid-to-high price segments (inner-city areas) rather than low price segments. As a corollary, many regions located in the middle and outer rings of major capital cities face modest housing shortages. Nonetheless, more recent evidence shows the concentration of new residential construction (especially units and apartments) in inner-city areas may be true in cities such as Sydney and Melbourne, but in all cities, significant amounts are constructed in

lower-value outer areas when using weighted price deciles and taking housing stock/population into consideration (Coates & Wiltshire, 2018).

Pixiao's results invite us to ask, city by city, how flexibilities vary, what shapes flexibility and to what extent. This poses the interesting question of how the BOC, within its mandate, would actually use such superior information on local supply elasticities. Monetary policy cannot, as noted above, be effectively designed to target specific localities. So, what will shape movement of migrants and others towards the flexible metropolitan housing system. This implies some inter-urban or regional policy for housing investment. Is this another policy fracture? Is there any thinking about housing within regional economic policies or about regional effects in housing policies?

iii. Dealing with Differential Stability Policy Effects in Housing Systems

The Central Bank, and indeed the central agencies of Canada's Federal Government, must meld and weld the multiple interests and multiple sub-systems that constitutes Canada's housing system. In practise this will never be perfect, but the question is whether present approaches are adequate. This section presents reasons to doubt the adequacy of present approaches to merging macro-concerns with major local systems and there are emerging concerns in mainstream economics literature.

There is an emerging debate on whether monetary policy tends to dampen or reinforce economic inequality that has centred concern on the impact of monetary policy on income, consumption and wealth inequality at the household level (Ampudia et al., 2018; Coibion et al., 2017; Lenza & Slacalek, 2018). More recently, and more apposite to our spatial array of local housing systems, researchers have begun to focus on the spatial effect of monetary policies. For instance, Fratantoni and Schuh (2003) argue that the effectiveness of monetary transmission depends on the extent and nature of regional heterogeneity. Eichenbaum et al. (2022) show that the overall efficiency of monetary policy is dependent on the state of the systems it impacts. Sokol and Pataccini (2022) directly argue that central banks have clear distributional effects on regional and urban-scale inequality. In earlier sections this paper has drawn attention to how disregarding sub-national housing systems may distort monetary and regulatory policy outcomes.

Emerging research, that lacks any Canadian content, is impressive, and these studies focus on America and European countries. In addition to the previously noted national to sub-national effects studies of Gupta et al. (2021) and Bahaman-Oskooee et al.(2023), Francis et al. (2012), in researching city-level responses to monetary policy shocks in the US, find strong evidence that population density and the size of the local government sector (usually associated with city size in Canada) mitigate the effects of monetary policy on local employment. Further, Di Maggio et al. (2017) suggest that areas with a larger share of adjustable-rate mortgages were more responsive to lower interest rates and saw a relative decline in defaults and an increase in house prices and employment. Recently, Beraja et al. (2019) argue that regional distribution of housing equity influences the aggregate consequences of monetary policy through its effects on mortgage refinancing. Hauptmeier et al. (2020) used data on economic activities at the city and country level to investigate the impact of monetary policy on regional inequality. The finding of their study suggests that in poorer regions, monetary policy shocks (short-term interest rate changes) are more persistent in terms of the slower response in employment and labour productivity. It takes poor areas a longer time to return to their pre-shock level than areas in the upper part of the GDP distribution. As a consequence, policy tightening aggravates regional inequality and policy

easing mitigates it. This is an important finding that may well resonate with the poorer and rural regions of Canada.

When shifting the focus from Canada as a whole to subnational scope, it is more meaningful to further our understanding of the spatial distributional effects of central bank interventions, and especially those transmitted through the housing system. In the context of Canada, it has been argued that the interregional variation is neglected in the Bank of Canada's technical literature (Mann, 2010). August et al. (2022) imply that the focus should not solely be on whether central bank interventions stabilise the economy, but also on the distributional and political effects of how they do so. In fact, August et al. (2022) examine the unequal spatial and social effect of QE in detail. They suggest this policy did not work in supporting an evenly distributed recovery and that QE liquidity supported the fossil fuel and financial sectors and supercharged the Canadian real estate market. In effect a major policy instrument of the last decade exacerbated housing system inequalities and potential instabilities. In terms of spatial disparity, the results show that QE programs, via supporting people who are already wealthy or own assets, and harming those who already need support, have contributed to, and deepened, pre-existing divides in places like Toronto. And it is straightforward to connect to the earlier assertion in this paper that QE and prudential regulation have made local housing outcomes more unequal and the market systems potentially more unstable.

Recently, as reported above, scholars have highlighted the spillover effect of housing demand from big cities to neighbouring cities and connected towns and rural markets. Since the GFC, Canadian Federal and provincial governments have implemented several policies to prevent housing bubbles, such as (noted above) tightening the criteria for mortgage lending qualifications and stress testing (Rherrad et al., 2021). Following the federal government, some provincial governments introduced measures to reduce overheating in the their respective real estate markets, such as an additional property transfer tax for foreign purchasers in Vancouver CMA, the implementation of the non-resident speculation tax and, more recently, the promotion of housing supply in Ontario (Rherrad et al., 2021). It was argued above that prudential regulation had reduced systemic financial risks but increased housing system risks. Rherrad (2021) also argues that one of the consequences of the new Canadian housing market regulations is the transfer of risks of overheating from the most active real estate CMAs to their neighbouring connected neighbouring cities, towns, and rural areas, that is through the spatial system of housing markets. Additionally, they suggest that identifying specific markets that are more vulnerable to price tensions and market inflexibility would shed more light on real estate bubbles and manage their contagion in the Canadian real estate market. The time for a sub-national system articulation of monetary and regulatory policy transmission mechanisms is now.

6. HOUSING AND THE DISTRIBUTION OF INCOME AND WEALTH.

i. Distributions of Income and Wealth.

The distribution of incomes and wealth are core concerns for policy makers and, after some de-emphasis from the 1970's onwards, have been restored to a central concern in modern economics (Fitoussi et al, 2007; Piketty, 2014). In discussions of housing policies and the housing economy the implicit assumption has usually been that these distributions drive housing choices and affordability outcomes, but there is a growing awareness that housing markets shape wealth outcomes and, it is argued below, residual income distributions. These can no longer be second order concerns in research and policy analysis, with housing wealth the most widely distributed asset in the economy and high housing costs eating, differentially for different groups, into the post-housing cost residual incomes that households have left for spending and saving.

An earlier paper (MacLennan et al, 2022) explored some of the aggregate patterns of wealth and housing wealth in Canada and outlined its changing scale and distribution and highlighted wealth effects in the national economy. This paper does not repeat that discussion and focusses on urban and metropolitan wealth and inequality patterns.

ii. Income Inequalities

Federal Canada cares much about incomes. For instance, in 2020, largely due to COVID-19 lockdowns and their impact on wages, average incomes actually declined, but that income was boosted by pandemic benefits and other income supports, with almost 7 Canadians in 10 receiving support from a provincial or federal pandemic program (Zimonjic, 2022). Yet income inequalities have increased in this millennium, with larger urban centres greater income inequality than smaller population centres. Indeed, it has been argued that rising income inequality in Canada is a phenomenon of only urban areas (Fong, 2017), who found that the national increase in inequality since the mid-1970s is largely due to the four largest metro areas: Toronto, Montreal, Vancouver, and Calgary. Fong concludes that in Canada's larger provinces, rising inequality in the largest CMAs explain almost all of the increase in inequality at the provincial level. Zimonjic (2022) finds that Toronto, Calgary and Vancouver experience greater inequalities compared to smaller cities such as Quebec, Drummondville and Saguenay (see Figure 17).

These observations build upon Walks (2013) earlier assessment of changes in income inequality, at metropolitan and neighbourhood scales in Canada's largest CMAs, that found metropolitan areas have trended toward greater inequality over the period 1970 through 2005. Clearly four decades of rising income inequalities within metropolitan areas will have exacerbated problems of housing costs for less affluent households and would have done so even if housing costs had risen in line with wage rates. Nonetheless, the census data for 2021 shows that income inequality decreased in every CMA from 2015 to 2021, whether measured in terms of the Gini index on adjusted household after-tax income and P90/P10 ratio on adjusted household after-tax income (Statistics Canada, 2022b). This is a major disruption to a long established trend, though it may reflect Covid-19 Policy effects prevailing in 2021.

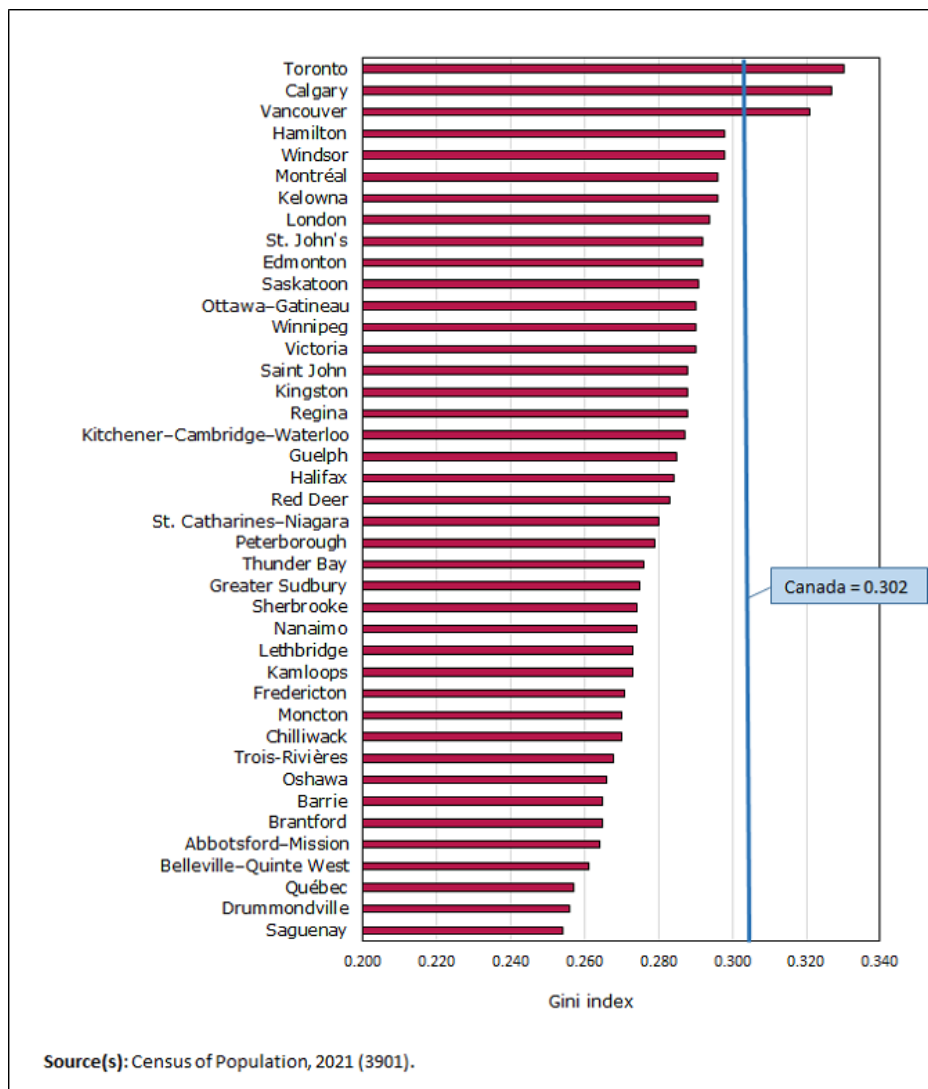


Figure 17. Income inequality highest in Toronto, Calgary and Vancouver

In the systems approach to housing policy conventional measures of affordability that relate some measure of housing costs to some measure of income need to be discarded. The home, as outlined above, has to be used with other major expenses to produce ‘comfort’ (especially energy costs) and ‘accessibility’ (travel costs). Ideally all three costs should be combined into a ‘housing related’ affordability measure. But in the absence of that measure, looking at incomes in conjunction with housing costs is important in identifying residual incomes after housing costs. On that residual income measure, once housing costs are recognised, income inequalities are found to be much greater by researchers in Germany (Dustmann et al., 2022), the United States (Albouy, 2016) and in the UK (Belfield et al., 2015). For Canada, Sopchokchai & Zhou (2020) similarly find that the Gini coefficients of Canadian CMAs and CAs using residual income are higher than those of total income (0.3707 compared with 0.3191).

Rising housing costs, increasing faster than incomes, are clearly consuming discretionary income and undermining living standards. Housing costs are exacerbating Canadian poverties. Shelter costs as a share of income increased by 7.2% across the full sample of Canadian cities over 2006-2016 (Filipowicz et al., 2020). According to data from the Canada Mortgage and Housing Corporation, shelter cost as a share of disposable income for average homes across Canada reached 60% of the median income in 2021 (Filipowicz et al., 2020).

Moreover, reflecting the necessity of housing, the income share of housing expenditure rose disproportionately for the bottom income quintile and fell for the top quintile. This high income burden of rents is borne by households who also do not enjoy the upside wealth gains of rising housing prices enjoyed by owners. It is well documented for Canada that low-income families spend a higher share of their budgets on necessities and housing compared to families with higher incomes (Uppal, 2023). Regionally, Nova Scotia and Newfoundland and Labrador had a higher proportion of its population living in the bottom income quintile families, where Alberta had the least. Living in the bottom income quintile families was more common among women, the young and old, those with lower levels of education, lone parents, Indigenous people and recent immigrants (Uppal, 2023). Those are the Canadians who have suffered, as opposed to gained, most from rising housing costs and often flat incomes. The feedback effects, the wider system effects, shape the neighbourhood contexts in which poorer, older Canadian's end their lives and the young struggle to accumulate the human capital to build their future incomes. It is only a local systems perspective to housing provision that will contribute to the resolution of the 'wicked problems' reflected in and shaping these adverse income inequalities.

iii. Housing and the Distribution of Wealth

Unlike the abundant research on income inequality, relatively little attention has been paid to wealth inequality in Canada. A recent OECD report (Causa et al., 2019) has highlighted, for Canada, that wealth inequality has been rising, the capital share of income has been increased in relative to labour, and wealth inequality is much higher than income inequality.

Although high, wealth inequality is reported to have narrowed slightly in Canada between 2005 and 2019 (Caranci et al., 2022). Caranci suggests that rising real estate values have not contributed to a widening in wealth inequality. By contrast, rising homeownership among the lowest wealth Canadians has helped to lean against it. This result was typical for homeownership growth in the 'Anglo' economies after the 1950's, at least until the start of this millennium but not since. In the overall period studied by Caranci those driving the increase in homeownership were primarily young Canadians between the ages of 25 and 34 and they were achieving homeownership at similar rates as previous generations at that equivalent age.

This, relatively comforting view on the wealth outcomes of homeownership in Canada, does seem to be now significantly 'out-of-date'. There are multiple studies, and reported experiences, that suggest these patterns began to change a decade ago. Age specific homeownership rates for younger Canadians are now following patterns established in New Zealand and Australia in the 1990's and in the UK (and the US) a decade later. Homeownership rates among those aged 25 to 29 years fell from 44.1% in 2011 to 36.5% in 2021, while for those aged 30 to 34 years, rates fell from 59.2% in 2011 to 52.3% in 2021 (Cox, 2022b). Cox concludes that with these shifts that wealth inequality in Canada has been increasing since 2011 (Cox, 2022a). The shift from the Caranci to Cox understanding of homeownership in Canada is fundamentally important in formulating housing system policies for the future.

There is, in these figures, a key fracture occurring not only in housing tenure patterns but in the ways younger Canadians save and accumulate for the future, for owners paying for housing now shapes their assets when they retire. There is also recent evidence that Canadians 25-40 are incurring higher credit card debts and reducing their overall savings. Is this, in any way, related to wealth-based mortgage rationing with mortgage stress testing under prudential regulations. Is it another unintended consequence?

A recent Australian paper, by Ong Vitorj & Phelps (2023), finds that there is a widening intergenerational housing wealth gap driven by lower rates of homeownership and lower property value growth among younger cohorts, with the reduced rates of homeownership access the more significant driver. Younger cohorts spend more on rental housing and save less than older cohorts did at the same age, which will affect future wealth accumulation, particularly at the bottom of the income distribution (Dustmann et al., 2022). Work needs to be done on these patterns in Canada.

A growing body of research points to the role of parental wealth in perpetuating unequal access to homeownership (and hence reducing social mobility). There are gaps in homeownership rates between millennials whose parents were homeowners relative to those whose parents were renters, after controlling for age, household income, education level, marital status and ethnicity. The cross-national evidence shows that about one-third of first-time homebuyers received a gift or a loan from relatives to help with the down payment, such as in the USA (Lautz et al., 2020) and China. Households without a starting point of a high income and/or an intergenerational wealth transfer face a high barrier into homeownership (Caranci et al., 2022), whilst declining ratios of mortgage loan approvals to application in recent months show it is increasingly difficult for potential borrowers to get qualified for loans subject to the stress test (CMHC, 2022b).

After the 1980s, financial deregulation across the OECD countries brought housing finance circuits closer to their national capital market and, further, these previously national markets closer to a more globally integrated financial system (Fernandez & Aalbers, 2016). Despite a more prudential attitude to mortgage markets after the Global Financial Crisis of 2007-2008, mortgage lending has recovered and risen steadily in most countries over the preceding decade (Whitehead & Williams, 2017). As a consequence, the coexistence of booming and struggling property markets within a city, metropolitan area and country become relatively prevalent (Arundel & Hochstenbach, 2020). Additionally, within each city or region, differential price gains for different areas have also been typical, for instance with gentrifying core neighbourhoods witnessing the fastest growth rates and old neighbourhoods without regeneration experiencing stagnation.

There have been systematic geographic patterns of house price rises and equity gains in the Canadian housing system, as noted in Section 2, in this millennium with the fastest gains in the largest metropolitan areas and adjacent cities and with high quality suburbs and gentrifying neighbourhoods often the highest gain locations. Often, in these localities, housing market outcomes and gains drove wealth gains as fast as labour market income related activities. Different patterns emerging in the first year of the COVID-19 pandemic, reported for Canada, the UK, the USA and Australia has led to shifting patterns of demand with significant increases in demand and housing prices and rents away from the core cities (A. Gupta et al., 2021). In part, this reflects changing work practices, increases in the incidence of home working and reduced commuting (A. Gupta et al., 2021). It is yet to be established how permanent such shifts might remain as there has, by 2023, been at least a partial reversion to traditional housing wealth gain localities.

Spatial distribution of the low-income population has changed over time within Canadian metropolitan spaces (Ades et al., 2012; Hulchanski, 2016). The previous studies suggest that low-income population was mostly concentrated in large metropolitan areas, which was especially high in Montreal and Vancouver (Ades et al., 2012). On the other hand, other metropolitan areas had much lower poverty levels. Their results also present that poverty levels have evolved differently within these metropolitan areas. The low-income population

occupied a very limited area of the metropolitan space. The more disadvantaged groups generally lived close to the city centre, and in inner-city neighbourhoods.

Walks (2016) argues that, at the metropolitan scale, larger CMAs reveal significantly greater levels of wealth segregation than smaller CMAs. Housing capital gains are not spatially equalising, but instead spatially more concentrated in wealthy neighbourhoods (Walks, 2016). The recent data shows that average mortgage debt among those surveyed in 2019 was far higher than those in the same age bracket from prior surveys (Caranci et al., 2022). The high debt levels among low-income neighbourhoods negate many of the wealth effects of rising homeownership levels and housing values.

7. HOUSING AND PRODUCTIVITY: MISSING LINKS.

i. Housing and Productivity: From Nothing to Something.

In this section an ‘urban-metropolitan’ dimension is added to, or made explicit within, the discussion of the housing-productivity nexus explored in Maclennan et al. (2021). Drawing out spatial context is important. The ways in which poor housing outcomes may influence the accumulation and use of human capital, with multiple sectoral spillover effects, is particularly pertinent. Firstly, the housing system ‘selects’ low income households into lower amenity, less well connected and environmentally poorer neighbourhoods. Subsequently, neighbourhood attributes may, as outlined below, impact the development and use of their human capabilities. Such effects remain important, in different ways, in poorer rural settings.

At the same time, urban scale and density appear to have played significant roles in improving the efficiency of labour markets and innovation systems. These ‘agglomeration effects’ have been argued to raise productivity in larger cities and by the start of this millennium research established that productivity in cities was systematically above national averages (E. L. Glaeser & Gottlieb, 2009).

After long neglect, there is now growing awareness that housing outcomes shape economic growth and productivity within metropolitan areas. The impacts of housing on productivity at the metropolitan scale are pivotal, given the importance of metropolitan economies in shaping the national economy. A tripartite framework for exploring productivity effects that arise from housing **activities**, **attribute** outcomes (including rents and prices), and overall resource **allocation** was outlined in Maclennan, Long, et al. (2021) and discussed above in Section 4. The multiplier effect of construction industry and related industries has been discussed in Section 5. Herein, the focus is on using the framework developed in Section 4 to discuss attribute outcomes and the overall resource allocation effects.

The logic of the approach, briefly, is that households choose a set of housing attributes, including dwelling size, structure, quality, neighbourhood amenity, and location relative to household activity sites with bearing the influence of associated price and (for owners) asset characteristics. These linkages between housing attributes, household capabilities and the growth drivers of human capital, business capital and creative/innovative systems constitute the complex interface between housing and productivity. These housing attribute choice outcomes constitute a key infrastructure of spaces and connections for the daily living and working experiences of individuals.

It seems somewhat odd to assume these experiences will not shape productivity behaviours. Yet housing economics has done too little to establish how housing outcomes/processes shape household capabilities, for instance, to accumulate and use human and housing capital through earning and learning, especially at metropolitan scale in the context of Canada. These

household capabilities impact the metropolitan growth drivers of human capital, business capital and creative/innovative systems. These relationships are at the core of the interface between housing and productivity. Much of the rest of this section explores some of the key connections between housing attribute outcomes and growth and productivity for which there is at least a prima facie case. There is a shortage of Canadian evidence in this area of research.

At a more aggregate scale, the housing market is a resource allocation system, which matches households and housing and investors to housing investments and shifts resources between housing and other economic sectors and may do so more or less effectively. A case can be made that, in many of the advanced economies, housing and economic policies have incentivised rising national resources into existing housing assets, and raised their prices, rather than fostering innovative technologies and human capital. Although governments still generally fail to address such questions of housing programmes, recent studies in the UK (CBI, 2021), Canada (TD Bank, 2021), and Australia (Maclennan et al., 2021), and indeed by OECD (2021) suggest that business organisations, trade unions and housing lobbies now all recognise how housing outcomes limit productivity. The metropolitan areas are argued to be the places that attract most of the capitals and investment, thereby the relationship between housing outcomes and resource allocation appears to be of great significance.

ii. Housing Attributes and Household Capabilities.

Housing, Capabilities and Human Capital.

Housing lobbies, often advocating resource claims to meet ‘needs’ on re-distributional grounds and rights grounds, seldom make strong supporting evidence cases for the transmission processes between housing outcomes and the formation of human capital. Policymakers have been slow to fill that evidence gap. Housing is a critical influence on the economic and social capabilities of all household members both directly and, more often, by combining with other outcomes and actions of individuals and governments. In the systems perspective it is always key to think not just ‘housing, but housing ‘with’ and ‘and’.

Wide-ranging studies support the proposition that housing impacts resident’s outcomes on health and education (Meen & Nygaard, 2010), particularly for children from low-income households and young people, which are widely established as significant influences on capabilities to acquire and use human capital and thus the productivity of labour. However, in the wider housing literature, the effects of housing on the formation of human capital often lack rigorous empirical confirmation, reflecting the complexity of the causal chains involved. Further, it is challenging to make definitive claims about which housing attributes and processes affect the formation of human capital.

Housing research in Canada, has never had the resource support of data, trained economists, and research infrastructure to investigate obvious links that have been pursued by researchers in health and education. And the continuing absence of a substantial panel survey/study of households, and their housing, leaves Canadian researchers struggling to keep up with new approaches developed in the US, the UK and Australia, for instance. In consequence, evidence on housing outcomes and capabilities are often prima facie in nature and dismissed as such by hard-edged economists allocating public resources.⁴

⁴ On 28th October 2014, Sir Danny Alexander, then Chief Secretary to the UK Treasury presented the Annual Lecture for Shelter Scotland. In responding to questions, the Chief Secretary, who had a strong understanding of housing issues, accepted the view that housing was likely to have a range of positive, long-term, and spatially spread positive economic effects that were not well evidenced and not considered in public spending

An earlier paper (MacLennan et al, 2022) reviewed international research evidence of housing effects on the formation of human capital. In the following paragraphs a brief scan of Canadian evidence fills out that picture and reaches, tentatively, given the poorer data available, similar conclusions about significant housing effects on housing and education that then impact measured human capital. The attribute outcomes-human capital-productivity framework can be applied to how different housing outcomes (such as distance from workplaces, housing quality, insulation standards, space for home-working and homework, internet and other connectivity and neighbourhood context) could individually or jointly impact the well-established growth drivers of economic growth and productivity.

Housing, Health, Learning and Capabilities.

The productivity of individuals can vary systematically over their life course as does their broad paths of learning and acquisition of skills and knowledge. The context, and personal control, of their housing situation also changes. Education and physical and mental health are widely established as significant influences on capabilities to acquire and use human capital and thus the productivity of labour.

There is a longstanding Canadian literature that has established the statistical correlations of poor housing, poor education performance, and poor health. These associations in themselves make a strong case for joint programme delivery of housing with other sectors of provision when governments aim to resolve the multiple deprivation of individuals or areas. However, it is also important to establish causalities rather than simply correlations. This section of the paper highlights studies that achieve or come closer to that aim. The evidence cited, and it is by no means an exhaustive audit, is intended to make the point that poor housing outcomes may diminish capabilities and labour productivity, that many of these exist in poor places in all kinds of regions but have a particular emphasis in metropolitan areas, and to highlight how consideration of such effects are not always integrated into housing policy decision taking.

Housing, Health, and Capabilities.

There is 'indicative' Canadian research on how housing impacts health outcomes that then impact incomes. Four pathways through which housing would impact health have been identified: not having a stable home, home conditions, housing affordability, and neighbourhood quality (Taylor, 2018).

A 2016 report by Toronto Public Health (Toronto Public Health, 2016) emphasised that housing affordability, quality, and housing address stability all are closely related to health and well-being. Spending a larger amount of already limited household income on housing and housing-related expenses limits consumption of, and forces trade-offs between, essentials such as food, utilities, prescriptions, and recreational opportunities, which are important for health. Family expenditure on directly enhancing the human capital of children (visiting the cinema, museums, holidays) and adults (buying books, paying for skills courses) becomes near impossible. Biological, chemical, and physical exposures in the home, associated with low quality housing, have adverse health effects and improvements to housing conditions have definitive measured (suitably controlled for on renewal schemes that retain tenants in their long-term homes post renovation) benefits of reductions in health risks. There is a near consensus that improvements in housing quality, particularly when they are targeted to

decisions. The Treasury, he noted, were not inclined to do research to support housing lobby cases. Similar attitudes have prevailed in many other governments in the Anglosphere.

people with poor health and living in inadequate living conditions, drive better health outcomes and, in consequence worker productivity.

Poor housing conditions including issues such as mould, safety, crowding, and unaffordability, have been associated with a wide range of health conditions among adults: chronic diseases, infectious disease such as tuberculosis, injuries, poor mental health, adverse childhood development. They have a particularly high incidence at the low quality end of private rental housing, and that sector is now under intense pressure in Canada's major cities but can be found too in small towns and rural areas. The housing system in periods of shortage will almost always most, and most expensively, damage current outcomes and future prospects for the poorest Canadians. The paragraphs below provide selected evidence to highlight the harsh reality of these circumstances.

Individuals living in socially marginalised and inadequate housing have poor health status, and in some cases worse health status than individuals who were homeless (Hwang et al., 2011). Waterston et al. (2015) noted that around 30% of Canadian households live in substandard conditions or in housing need with adverse impacts on capabilities. Unsuitable or crowded housing, unaffordable housing and inadequate housing, housing in need of major repairs are commonly housing needs in Canada, which could negatively impact all aspects of child and youth physical, mental, development and social health. Bryant (2004) had earlier made a similar observation, namely that housing is intimately linked to household income and the financial resources available to a family. In families living in core housing need, parents are often burdened with stress, which poses challenges to maintaining positive relationships within the family, influences the mental and physical well-being of parents, and may even introduce a higher risk of negative parenting practices.

Housing characteristics are associated with selected indicators of Inuit children's health that are likely to have major negative effects on human capital. The presence of a smoker in the home, homeownership, and parental housing satisfaction were associated with specific physical and/or mental health outcomes, even after adjusting for other housing factors and family and child sociodemographic characteristics (Kohen et al., 2015). Housing conditions for Indigenous children have been associated with their physical and mental health, and higher pollution exposure has been found for children in low-income areas (Kohen, 2019). Pepin et al. (2018)'s results show that among Nunavik Inuit, household crowding could be a risk factor for psychological distress when interacting with other elements related to poverty or housing or could be experienced as a difficulty for adolescents on other aspects than depressive symptoms and suicidal thoughts.

It is also important to note 'positive' findings that stress the beneficial effects of good housing outcomes. Reading and Halseth (2013) highlight the importance of housing quality, affordability, accessibility, and overcrowded living conditions on health conditions. And the Office of the Auditor General of Ontario (2008) noted that high-quality housing has a positive impact on general well-being, psychological stability, independent functioning. Social connectedness was emphasised by the Canadian Child and Youth Health and Housing Network (2013).

Housing and Education Outcomes

Gagné and Ferrer (2006) find positive impacts of home ownership in Canada on reading scores, and positive impacts of housing subsidies on boys' behavioural scores, but negative impacts of subsidies on girls' emotional scores (after controlling for other factors). Both girls and boys fare worse if they live in housing requiring major repairs, but boys are negatively affected by housing address instability, while girls are negatively affected by poor

neighbourhood quality. These findings concur with international evidence but, like these earlier reported studies, few studies control for influences collinear with tenure that could raise schooling performance (parental education levels, for instance). They remain *prima facie* cases.

Many of the co-determinants of poor housing and health also play into educational and learning outcomes for children, teenagers, and adults. Housing that is unaffordable, insecure, inadequate, overcrowded, and inappropriate can threaten housing stability, raise eviction rates, induce frequent moves, and lead to homelessness. All of these outcomes and processes have recorded negative direct effects on the schooling performance of children affected. Low quality homes often mean limited and disrupted space for learning at home. Poorer internet connections, as so worryingly demonstrated in the Covid pandemic detaches families and children from the emerging ways of learning and communicating. Address instability is of particular significance for children. Disrupted relationships with pupils and teachers and recurrent familiarisation periods in new schools all depress educational performance. And there are further detrimental consequences for child and adult health.

Homelessness and Capabilities

Address instability or no address at all is core to the homelessness issue. Stable and permanent housing with appropriate supports can have positive impacts for homeless people, people with substance use and/or mental health issues, and people with chronic health issues.

For the Canadians who do not have settled housing, single adults who experience episodes of homelessness suffer from high rates of physical and mental illness, substance abuse, injuries and assaults, and mortality (Aubry et al., 2012; Frankish et al., 2005). Infectious diseases, mental health issues, cognitive impairments, foot issues, chronic diseases are associated with homelessness (Public Health Ontario, 2019). One quarter said that their mental health has been negatively impacted by housing insecurity (Credit Counselling Canada, 2021). It is well established that homelessness erodes human capital but there are few estimates of by how much and for how long. Policy is often shaped by the different costs of providing ‘palliative’ solutions rather than addressing the lost capabilities and the cost of restoring them.

Post-covid, and in the present rental sector crises there is a significant proportion of the homeless who have recently been employed. They are now trapped in a ‘no address-no job recursive loop’ and their potential productivity is lost in the currently near full employment Canadian economy. The evidence of how people become, and remain, homeless through diverse routes makes a strong case for a systems understanding of the issues involved because there is probably no other human experience that is so close to an ‘edge of chaos’ event for individuals.

Neighbourhood Effects

Neighbourhood effects may also matter. Housing choices and neighbourhood effects interact in complex ways, and using data in Winnipeg, Martens et al. (2014) argue that children in social housing had poorer health and education outcomes than all others but living in social housing in wealthier areas was associated with better adolescent outcomes. Comeau et al. (2021) argue that neighbourhood antisocial behaviour exacerbates the effect of inadequate housing on child mental health, whilst the joint effect of inadequate housing and neighbourhood antisocial behaviour is stronger for younger than older children.

Social, economic, and physical features of neighbourhoods have been widely linked with health outcomes. Unsafe neighbourhoods can affect health directly through physical harm

and injuries. Consequent concerns about violence and crime in communities can affect health by increasing stress, limiting movement and social interaction, and preventing the health-promoting practices of walking, cycling, playing in parks, and access to services essential for health.

The existence and size of ‘neighbourhood effects’ is hotly debated (for a Canadian critique see Oreopoulos, 2008), and the evidence remains mixed (Galster & Friedrichs, 2015). The international literature, according to Atkinson (2008), reports small, statistically significant neighbourhood effects for poorer households in poor areas.

All these studies of ‘housing’ and ‘neighbourhood’ effects recognise the difficulties in moving beyond revealing strong correlations and removing confounding influences to draw strong conclusions about the causalities involved. Housing effects on labour productivity can often only be seen hazily through a veil of inadequately researched relationships. Better data and improved techniques demonstrate that effects can be convincingly demonstrated (Baker et al., 2016).

Governments are aware of these housing-health links. However, the concern has not been manifested in housing investment actions that would reduce ill-health and raise labour market productivity and participation. Undoubtedly the COVID-19 experience has made it apparent that housing and neighbourhood arrangements have significantly impacted infection rates and the ability of households to adapt to the pandemic. For many, the issue of poor quality housing in poor neighbourhoods has become about tolerable survival rather than simply productivity. Clearly, through health effects, housing systems are acute shapers of how societies and economies will cope with future pandemics and their productivity consequences.

Housing Tenure and Outcomes.

Housing economics has long stressed the importance of tenure choices and possible links to labour productivity. Numerous studies have shown that the children of homeowners have educational and related outcomes more conducive to developing human capital. They receive better school grades (Barker & Miller, 2009); have higher rates of high school graduation (Aaronson, 2000); are better behaved (Grinstein-Weiss et al., 2012); and have lower rates of criminal conviction (Blau et al., 2019).

For adults, several mechanisms could raise home-owner productivity through effects on life satisfaction, self-esteem, a sense of status, and control arising from experience of freedom at home (Lindblad & Quercia, 2015). However, for adults and children alike, few studies disentangle the likely critical interaction and selection aspects of parental income, housing tenure and neighbourhood effects. There is no research that provides definitive evidence that the attribute of homeownership per se raises human capital formation.

Market renters exhibit higher residential mobility rates than those in other tenures, such as homeowners and renters in social housing. The extent to which this may involve recurrent disruption, especially for low income renters, to schooling and destruction of helpful neighbourhood social networks was noted above. However, there are also significant studies that confirm how, for a wide range of income groups, quick access market rental housing facilitates labour mobility across, as well as within, different housing markets and promotes effective, productive economic adjustments (Whelan & Parkinson, 2017).

The reduction in home ownership rates of younger Canadian households since the mid-2010’s, discussed above, has potential productivity impacts. More young Canadians are

renting for longer before buying. On the one hand, this extended period of private rental could make urban labour markets more flexible and efficient. Workers, unhindered by housing transaction costs, are more likely to maximise their productivity levels by moving to wherever the best work opportunities are available. On the other hand, that same mobility associated with renting may mean it is easier for skilled workers to quit metropolitan locations if they no longer present affordable lifestyle options meeting aspirations (Brook, 2017). A ‘brain drain’ effect (reinforced post-COVID 19 by increased space demands) of this kind may underlie the productivity effects noted earlier by Hsieh and Moretti (2019).

Housing Market Outcomes and Labour Supply

High rental sector search costs and low vacancy rates will diminish all of the above effects. Rising real housing costs may also impact the work-leisure choices of older households. Again, in the Anglo-Saxon economies, at least, there are growing proportions of older households who are still paying mortgages (on their own home). Research, in the Australian context, suggests the growth in house prices may have some productivity benefits, for instance Cigdem et al. (2017) report that rising mortgage indebtedness is inducing an extension of working lives that mitigate declining employment rates and productivity slowdown attributable to population ageing. At the same time, however, for those who are fortunate enough to have accrued significant housing wealth, rising house prices can have counterproductive effects on labour market participation. Recent AHURI research shows that “higher house price growth leads to a reduction in labour market participation and hours of work for older women (precipitating early retirement) and younger partnered couples (substituting from market work to non-market career activities)” (Atalay et al., 2016, p.54).

There are signs that the impact of house prices and housing wealth has been particularly important in accelerating retirement of older workers since 2019. In a recent paper Favilukis and Li (2023) do the type of research that is so badly needed to definitively connect housing outcomes to individual labour market behaviours and their research needs to be replicated for Canada. They report that the recent decline in the labour force participation rate among older workers in the USA, with the over 55 group falling from 40.2% in 2019 to 39.2% in 2020, to 38.4% in 2021, can be almost entirely explained by the wealth effects of the 2021 housing boom (Favilukis & Li, 2023)⁵. This is because older workers are more likely to reduce labour supply when housing returns are high. The overall negative effect on labour supply is solely due to homeowners as the labour force participation of older renters is positively affected by house price growth. The labour supply of middle-aged owners is relatively unresponsive to house price growth. Younger owners actually work more in response to higher house price growth, perhaps because their expected housing expenses have gone up. All renters work more in response to higher house price growth, but the effect is weakest for old renters.

iii. Housing Attributes, Locational Choices, and Productivity

Connecting Home and Workplaces.

Wider spatial patterns of homes and workplaces within metropolitan economies impact household costs and labour market functioning and productivity. The commuting costs associated with residential location choices involve time costs that reduce time for work and other activities. Almost all major urban transport investment studies recognise these losses in productivity and use them to justify government support. It says something of the traditions

⁵ U.S. labour force participation declined from an average of 63.1% in 2019 to 61.7% in both 2020 and 2021.

of housing policy, at least in Canada, the UK and Australia that housing investment cases to locate homes closer to workplaces often fail to claim such gains and this biases infrastructure spending to transport rather than housing. Housing-labour market mismatches, where the separation of homes and workplaces cause concerns regarding the burden of worker commuting and local labour shortages have been established as being important in some contexts (see, for example, Houston, 2005).

Over the last two decades there has been a renewed interest in how agglomeration economies impact the productivity of major metropolitan areas. The ways in which housing systems may either reinforce such processes by providing appropriate mixes of homes and locations for skilled workers or consume the gains from productivity growth in rising housing prices and rents has recently been reviewed by Leishman et al. (2021).

Researchers, and policymakers, have explored agglomeration processes and outcomes in relation to two key urban processes, namely innovation and labour market functioning. In relation to innovation, the propinquity of major strategic service providers, the possibility of serendipitous social contact between potential collaborators and accessibility to face to face contact required for key decisions when contracts are incomplete (as is often the case in innovation) are key ‘innovation’ economies and that such clusters matter (see Moretti, 2019). There are, often unrecognised, housing dimensions to creative and innovative processes within cities. J. T. Miao (2017) reports on the importance of appropriate homes and neighbourhoods for attracting and retaining knowledge sector workers and this connects to the housing and neighbourhood requirements for Richard Florida’s ‘creative class’ (Florida et al., 2002). Whether framed as the ‘creative class’ (Florida) or ‘skilled workers’ (Glaeser) housing quality, price and location play clear roles in such growth enhancing processes.

But what of ‘matching’ in relation to labour market effects? The research noted above that equates the productivity losses of separating homes and workplaces with lost ‘time at work’ fails to recognise the potential effects of separation undermining labour market matching gains. The core idea is straightforward: denser, or ‘thicker’, labour markets within metropolitan areas mean that firms can, with low search and hiring costs, quickly hire (and replace) workers that have the very specific skills they require. Better skill-job match raises productivity. Workers, in turn, can move, without incurring the transactions costs of changing residential locations, to the jobs for which they have skills. In consequence the labour market works more efficiently. Related, dynamic effects on worker productivity may arise. Rotemberg and Saloner (2000), observed that workers were more likely to undertake investment in human capital in thick labour markets as in a thin/small labour market, workers who invested in acquiring skills have weak bargaining power with local employers unless they were willing to undertake costly relocations.

Gal and Egeland (2018) conclude that such effects can be observed for larger metropolitan labour markets. In consequence the labour market works more efficiently where ‘affordable’ housing options are available to locate workers closer to concentrations of employment.

The consequences in the UK are clear. Poor connections between home and workplaces (that reflect housing as well as transport outcomes) are a key reason British cities are less productive than their European equivalents (Foster, 2022). Compared to European cities, where 67% of the population can reach the city centre by public transportation in 30 minutes, only 40% of people in large British cities can do so (Rodrigues & Breach, 2021). By reducing the size of the labour pool for businesses, as well as restricting workers’ access to high-productivity jobs and activities in city centres, poor matching of housing opportunities and

public transport accessibility in big cities weakens agglomeration effects and productivity (and exacerbates greenhouse gas emissions).

There is emerging evidence that housing market outcomes, and especially rising housing prices and rents are now undermining effective labour market matching. A significant adjustment to rising housing costs, noted above, has been for households to move further from high housing cost areas within cities, often to more remote suburbs, and to endure higher commuting costs and times. Census evidence confirms such shifts in the UK, Australia, Canada and the USA. Maclennan et al. (2019) simulated the effects of providing affordable housing homes closer to zones of dense employment within Sydney. The labour market matching (and lifetime income) gains of such shifts exceeded the saved travel time gains and CGE modelling suggested a lasting productivity gain for the city economy.

Metropolitan level data on commuting distances in Canada, as notes above, suggest that, to 2016, there had been significant increases in average commuting distances and a growing proportion of commutes longer than one hour. Transport sector agencies and lobbyists note the productivity consequences of increased travel time. There is no Canadian equivalent of the UK or Sydney studies on reduced labour market efficiency as a result of price and rent pressures forcing younger and lower income workers away from employment cores. The effect of rising core city housing costs on labour markets in major agglomerations needs to be better understood and managed and it is likely that Toronto, for instance, has already experienced such economic damage (Toronto Region Board of Trade & Woodgreen, 2021). Of course, again noted above, rising housing costs have induced households not just to suburbanise but relocate to different, lower cost local housing systems.

Housing Costs Displacing Households and Firms from Most Productive Locations.

Housing costs are shaping a new economic geography for Canada. And it may not be the optimal long term geography for productivity and innovation. In the paragraphs above there was focus on housing pressure effects within a metropolitan economy. This section focusses on how the same pressures generate more major locational shifts.

Change in Toronto exemplifies the process (accelerated by Covid-19). Toronto (the CMA) lost nearly 100,000 people in 2021, with 78% choosing to settle in other parts of the province (Thanthong-Knight & Hertzbery, 2023) and this may partly reflect workers reducing commuting frequency and raising working at home. The Toronto CMA lost a net 260,000 intra-provincial migrants between 2016-17 and 2021-22. Some CMAs within 250 kilometres such as Guelph, Peterborough gained a net 140,000 intra-provincial migrants. A similar but lesser exodus has also been observed around Vancouver and Montreal.

Work and home have increasingly become the same place for many service sector workers. However, these options are not available to (nor preferred by) all households in all places. Remote work requires good digital infrastructure, sufficient workspace, and a supportive regulatory environment with ample public services. When workers decide to work from home, and from 2019-20 onward, metropolitan areas have had the largest increases in remote working, many require more space to work within their home. So that the demand for housing space is augmented by, in effect, a demand for domestic office space. Hybrid work arrangements and better infrastructure have kept many workers in or near cities.

These substantial shifts, of established Canadians with middle-incomes out of metropolitan areas have not been associated with population decline in the major metropolitan areas. Nor indeed with permanently reduced housing costs. Instead, metropolitan areas are targeted by immigrants who incur the costs and difficulties of metropolitan pressures. Immigration policy

is set to increase these flows. There is a danger that current processes will come closer to replicating, in Canadian cities, the immigration-succession processes that drove suburbanisation, and segregation, in American cities until the 1970's. It will also have major implications for patterns of housing supply and infrastructure.

The central issue, clearly expressed by E. Glaeser and Gyourko (2018) and that impacts major metropolitan areas in the Anglosphere (Maclennan & Miao, 2017), is that there is a shortage of affordable housing in central urban areas, consequent high housing costs both distort labour market matching and limits the ability of workers to move to (often labour short) productive places where high-wage jobs are concentrated and distributed (Hsieh & Moretti, 2019). High land and housing prices eat into the gains from agglomeration economies and induce firms and households to move to lower cost locations, often with lower or few agglomeration economies.

Pressures on rental markets are important in these processes, as well as high house prices. In most advanced economies market renters exhibit higher residential mobility rates than those in other tenures. Workers, unhindered by housing transaction costs, are more likely to maximise their productivity levels by moving to wherever the best work opportunities are available. Studies confirm that, for a wide range of income groups, quick-access market rental housing facilitates labour mobility across, as well as within, different housing markets, and promotes effective, productive economic adjustments (Whelan & Parkinson, 2017). However, it has been reported that the propensity of those living in the private-rented sector to move has fallen by more than half in the last two decades in the UK (Judge, 2019). In recent years, renter mobility means it has been easier for skilled worker/renters, especially online worker, to quit metropolitan locations when the high rents made it unaffordable to stay (Brook, 2017; Judge, 2019).

At the interregional scale the productivity effects noted by Hsieh and Moretti, despite potential concerns about the scale and causality of effects identified, suggest that there needs to be a much stronger understanding of how housing prices, and qualities impact metropolitan and national economic development. How many metropolitan housing authorities in the OECD estimate the potential effects of their housing investment plans on labour productivity and innovation performance? Major Canadian metropolitan areas are only beginning to discuss these issues as economic problems. Housing and economic development remain 'Two Solitudes' in Federal, Provincial and, less so, municipal decision taking. OECD have recently found that productivity differences between regions are especially high in Canada and the role the housing sector play in shaping and maintaining that pattern urgently needs assessed. Filipowicz and Lafleur (2020) make it all too clear how housing shortages in Vancouver and Toronto are failing to match rapid job growth with commensurate increases in housing starts and in consequence workers cannot afford to move to Canada's most productive cities. So between as well as within cities housing outcomes are damaging productivity potential and hindering Canada's overall economic growth.

iv. Housing Productivity Effects: Resource Allocation System Effects.

In a market economy the allocation and reallocation of labour and capital to the firms that can use them most effectively is an important determinant of aggregate productivity (Restuccia & Rogerson, 2017). House prices may influence both household resources (by raising levels of housing wealth) and price signals (indicating super-normal profits in the housing sector) that reallocate capital efficiently in the economy and, in consequence productivity (Cetto et al., 2016). Rising housing prices impact resource allocation through both the collateral channel (households using their increased housing wealth to take additional borrowing to fund non-

housing investments) and the investment channel or crowding-out channel (where there is diversion of investment flows to housing from other, more productive activities such as business start-ups or expansion).

The Collateral Channel and Capital Accumulation

Real estate often constitutes a significant share of the tangible assets that firms hold on their balance sheet. Chaney et al. (2012) estimated that a \$1 increase in collateral value led the ‘representative’ US public corporation to raise its property investment by \$0.06. For a unit increase in the local property price index, a firm that owned at least some real estate increased its investment rate by 21 percentage points more than a firm that did not. Instead of focusing on these tangible assets on firm’s balance sheet, housing itself could be used to finance firms mainly through two ways: (1) home equity extraction through a personal mortgage and then offer the funds to the firm; (2) use housing to personally guarantee the firm’s borrowing. Bahaj et al. (2020) explored the relationship between increases in the values of the homes of company directors and investment in innovations and found that a £1 increase in the values of homes increased the firm’s investment by £0.03.

The role that housing plays in capital accumulation, nonetheless, could be limited, which relies on the values of housing and firms’ financial situation (Bahaj et al., 2020), housing cycle (Suh & Yang, 2020), and institutional context (Banerjee & Blickle, 2016). Specifically, R&D expenditure tends not to be influenced by rising housing prices (Suh & Yang, 2020), as R&D was generally not financed by banks (Chakraborty et al., 2018).

In addition to affecting existing business, the collateral channel also has established significance for potential entrepreneurs and the formation of small firms (Reuschke & Maclennan, 2014), which is generally believed to contribute disproportionately to employment and output growth. Housing can be used as a collateral that enables households to relax borrowing constraints and have better access to credit and thus start a business. This evidence can be widely found in literature, such as Schmalz et al. (2017).

Crowding-out Channel and Business Capital Misallocation

Some studies find that rising housing prices absorb more capital for house purchase and crowd-out non-residential investment. The higher rate of returns and lower volatility could induce even the most productive companies to invest and diversify into real estate markets, thus limiting investment in other higher-productivity activities. Miao and Wang (2014) indicated that enterprises that allocated more resources to high-profit assets with few technology spillovers, at the cost of innovation in their main business, would crowd out productive investments. Housing investment can be a sector with both high-returns and little technology spillover. In consequence, rapidly rising house prices tend to attract excess capital, which impedes real economic development, resulting in a decline in productivity (Rong et al., 2016).

A complementary study is provided by Doerr (2020) who found that firms that hold more real estate were less productive. He implied that these firms expanded output by more, while those firms in the information technology industries, a high-growth high-productivity sector, did not increase their investment in housing booms. Rising real estate values disproportionately relax collateral constraints for low-productivity firms which hold a large share of real estate. Within an industry, he found that a rise in average real estate values led to a decline in productivity, which may be due to resources being allocated towards low-productivity firms in this industry. More importantly, he demonstrated the existence of the crowding out channel by eliminating the reallocation channel and finding an insignificant

effect of changes in real estate values on industry productivity. This entails more capital leaving productive sectors and decreasing productivity by slowing down capital accumulation and technological innovations.

v. Putting Housing System Productivity Effects into Housing Policy

Economic policymakers have often largely ignored housing productivity effects because they are not well trained on the economics of housing systems nor encouraged to think about them. Housing advocates, deploy old Keynesian stabilisation support cases when it is advantageous to do so but rarely spell out how poor and expensive housing outcomes impact capabilities and productivity. They argue, and these approaches are required but they are not enough, on the basis of rights and fairness. The early, late 19th century advocates for better housing did actually make ‘capability’ cases in their advocacy.

This section has emphasised that some of the productivity downsides of rising house prices and pressured housing systems are now quite central to how the Canadian economic system, and its geography, now unfold. The better understanding and governance of these relationships is explored in Paper 4. Clearly there are ‘policy fractures’ that arise from the failure to think of housing as a crucial sector of both national, regional, and metropolitan economies. In particular an enterprise economy has to pay more attention to sustained, systemic rises in house prices for they may be driving an economic system based on taking the unearned rewards from scarcities (a rentier economy) rather than innovation and effort (an enterprise economy).

In Thomas Piketty’s work on ‘Capital’ the key to understanding redistribution is that the rate of return on capital exceeds the national growth rate. Rising wealth based on owning property shortages is a possible driver of such changes so that the role of housing in economic growth processes is inevitably linked to property-led wealth.

PART V.
**TOWARDS BETTER HOUSING SYSTEM OUTCOMES AND MORE
PRODUCTIVE AND FAIRER CITIES.**

8. PRELIMINARY CONCLUSIONS.

- i. Real, practical conceptual thinking and policymaking will generally have to engage with the notion of Canadian housing as a connected, diverse set of regional/metropolitan and neighbourhood/community level systems. It is at the metropolitan scale that key economic interactions between living, working, and travelling cohere on a day by day basis and the neighbourhoods nested within them, which are dominated by housing land uses and are chosen through the housing market, comprise key levels shaping socio-economic and service connections that shape human capital capabilities, especially for poorer Canadians. Housing policy makers need to develop the spatial awareness of Olympic gymnasts.
- ii. There have been important shifts in the functioning of metropolitan housing systems, and their impacts on smaller cities, towns, and rural areas in this millennium that policymakers have been slow to recognise and evidence. Canada's major metropolitan areas, especially the 'Big Three' are critical points of innovation, investment, and immigration with evident agglomeration economies. However, housing supply in these localities has not kept pace with expansionary pressures and rising housing costs and rents have eaten into the gains from agglomeration economies, so much so that households and firms have been induced to relocate to potentially less productive if lower cost locations.
- iii. Rising housing prices and rents have had significant effects on the distributions of income and wealth. The outcomes of the last two or three decades of housing and economic policies have increased income inequalities, and especially for residual income after housing costs. There is no mystery here, rising rents for the poorest fifth of Canadians in metropolitan areas have made them relatively poorer and they have enjoyed no gains from real house price increases in this millennium. There is a growing gap between rich and poor neighbourhoods within Canada's bigger cities and this reflects the costs and functioning of the housing system as well as labour markets.
- iv. In the home-owner sector, rising housing prices have driven significant increases in housing wealth, but they have also reduced, and especially in core metropolitan areas begun to reduce the home-ownership rates for under 35's, forcing many to leave to achieve housing space and tenure aims: at the same time rising rents as well as prices in major cities are now deterring moves into these cities from current Canadians with immigration maintaining metropolitan populations. Canada requires a substantial flow of, younger, immigrants but it also needs a less pressured metropolitan housing system to absorb new Canadians as effectively as in the past.
- v. Rising housing prices and rents, running ahead of incomes, lie at the core of the housing problems the nation faces and whilst rising prices may shape a 'feel-good' factor for the economy they create substantial economic consequences that impair metropolitan and national economic growth. An increasingly 'rentier' economy is neither an effective long term outcome for the economy nor a route to a fairer, inclusive Canada.

- vi. High housing prices and rents mean that households either have poorer housing quality, neighbourhood, or locational outcomes and these diminish household capabilities as workers and innovators. There is sufficient experience and evidence, not least from the business sector, that such effects can be significant, but are increasing. Yet there is a major policy fracture within national and local government that inhibits metropolitan strategies that effectively link housing and productivity. Siloes of ideas and implementation are precluding better housing decision taking for the economy.
- vii. Housing and economy policymakers have had a long familiarity with the multiplier effects of housing investments. They are important but are substantially under-estimated by failing to take a housing system perspective on what constitutes 'housing'. A broader, systems conception is required.
- viii. Housing spending, in particular mortgage demand and repayment stability are core concerns in monetary policy and prudential regulation. The past decade of monetary policy and prudential regulation have taken the economy through difficult, and still challenging times. There is little doubt that mortgage related policies have made the Canadian financial system safer from systemic failures. But there are worrying questions to address. Prudential regulation has reduced financial system risks but it has increased wider housing system risks for younger and poorer Canadians. The urban evidence suggests that trade-off has not been well evidenced nor made beyond the narrow remits of individual government silos. Policy focus on housing prices and the level of mortgage debt seems to be excessively confined to periods of potential downswing in housing prices. Rising prices raise the risks to Canadian households and businesses. The Bank of Canada is increasingly well-informed about regional/metropolitan housing markets but there is a case to refresh how the bank, below its top level inflation targets, looks at the effects of price increases for particular markets. Metropolitan housing markets left to themselves are not always well functioning and more joined-up thinking may well be required.
- ix. Canada has a chronic metropolitan excess demand problem, part of that reflects demand stimulating policies (the taxation of housing capital gains, sharply increasing immigration targets, burgeoning international student numbers without institutions increasing space and so on) but it also reflects the slow nature of housing supply systems and their inflexible supply chains. Supply shortages may, in some instances, reflect slow and demanding planning systems but there is a well-recognised shortage of skilled labour, materials and infrastructure shortages, especially in the major metropolitan areas. Fixing these supply chains requires a cross-order and cross-silo supply strategy that is manifestly absent in Canada. It requires more local orders to get to grips with labour, land, and infrastructure inputs as well as requirements, and it requires industry, regional, environmental, labour and immigration policy inputs at Federal levels. With supply capacity near its past peaks, a required doubling of output required by 2030 to keep prices reasonably stable and a major step-up in immigration to the same time period, raising housing supply will be a leading challenge for the Canadian economy. If supply flexibilities do not increase either growth will falter, or the wealth and productivity issues explored in this report will become substantially and noticeably worse.
- x. The increased spending of the NHS has since 2016 been an important palliative and also a source of important thinking about how to design and deliver housing policies differently. The danger is that if there is not a new Federal coherence in

increasing supply and limiting house prices then main policy settings will create policy difficulties substantially faster than the NHS can resolve them. Within the Federal Government there needs to be urgent work done to think through how to achieve better HOUSING SYSTEM governance and to create a Commission to pursue cross order, cross-silo and cross sector solutions to the emerging crisis in metropolitan, and regional, housing supply.

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