Compact City Policies: Comparative Assessment

1. Introduction

Compact city is one of the most discussed policy approaches in contemporary urban policy. In the past few years, compact city policies are increasingly appearing in urban strategies at the national level. International organizations and academic research groups are also highlighting the significance of compact city policies for policymakers.

Compact city is not a new concept – it was popularly discussed particularly in the 1990s in many OECD countries, particularly in Europe, as a way to achieve urban sustainability goals. However, the concept of compact city is taking on renewed relevance as a policy approach in the current urban context. The rationale for this concept stems from the fact that urban spatial form may substantially influence the economic, social and environmental performance of cities. For example, compact urban form with an efficient transportation system can reduce intra-urban trip distances, which reduces the cost of transporting goods and services as well as the consumption of gasoline. In built-up areas, compact city aids the provision of local energy generation technologies (combining heat and power, district cooling, etc.). On urban fringes, compact city can conserve land resources for agriculture, recreation and water and energy provision. All of these examples enhance the economic and environmental performance of cities.

The concept of compact city is also expected to play a role in addressing Green Growth, which has now become a general policy driver for OECD countries. Green Growth is about *fostering economic growth and development while ensuring that natural assets continue to provide the resources and ecosystem services on which our well-being relies* (OECD, 2011a). OECD countries are committed to Green Growth; in that context all policy areas are being examined to see what contribution they can make to achieving the general policy objective. Cities constitute one of the main spatial units in which Green Growth outcomes can be pursued. In fact, cities currently face a number of challenges in achieving Green Growth, including urban sprawl, greenhouse gas emissions and structural challenges to sustaining urban economic growth over the long term as national economies emerge from the recent economic crisis. The concept of compact city appears well-fitted for addressing these challenges, although no attempt is yet being made to examine compact city policies as a means to achieve Green Growth objectives.

Nevertheless it is also widely recognised that compact city generates debate. First, the concept itself represents complicated and even paradoxical issues. Indeed, the very popularity of the term amplifies its own challenges. While everyone is aware of the concept, there is no popular understanding as to its meaning – people speak about compact city with different definitions in mind. Second, there is extensive debate about whether compact city policies generate solid, positive policy impacts on the urban sustainability objectives. Even where there is evidence to this effect, many argue that compact city has substantial negative influences as well that offset the positive ones. For example, policies to encourage more intensive use of built-up areas can lead to increased traffic congestion, air pollution, a lack of vegetation in cities, loss of open green space and a lack of affordable housing. Third, there is an extensive debate on how best to design and implement compact city policies effectively. As compact city policies address existing cities, each presenting a different local context, each locality needs to adapt its own compact city strategies to fit its own local circumstances. In other words, there exists no single comprehensive compact city model applicable to all cities. This difficulty is underscored by the fact that it takes a long time for compact city policies to achieve results, and that these policies often engage conflicting interests and create strong opposition from various interest groups. The implementation challenges include governance arrangements, citizens' involvement, financing and monitoring/evaluation.

Taking into consideration this debate, the OECD launched a study on compact city policies across the member countries in 2009. The objective was the following: i) to better understand the concept of compact city and the implication of the current urban context for compact city policies; ii) to better understand its potential outcomes, particularly in terms of how it can contribute to Green Growth; iii) to develop indicators to monitor compact city and track policy performance; iv) to examine compact city policies currently being implemented across the OECD in relation to the pursuit of Green Growth objectives and provide ideas to achieve better outcomes; and v) to assess the key challenges faced by decision-makers as they seek to implement practical compact city strategies. In terms of methodology, the study took a comparative approach – it looked at what policies have been adopted and compared and analysed the outcomes. Five metropolitan regions (Melbourne, Paris, Portland, Toyama and Vancouver) were chosen as in-depth policy case studies. This paper summarises the main findings of the study[1].

2. The compact city: understanding the concept under current urban context

Defining compact city

There is an extensive stock of literature addressing a definition of compact city. Although there are still variations among cities and different cities take different compact city forms, this report considers the key characteristics of compact city as following:

- *Contiguous development patterns*. This particularly concerns location of new development at urban fringes and the overall location of urban land use (or built-up area) at the metropolitan scale. In a compact city, development is located contiguously and the border between urban and rural land use is distinct. Of course, certain land may be vacant or kept green depending on the local context, even if it is located in the middle of built-up areas.

- *Dense built-up areas with mass-transit linkages*. This looks at how intensively and effectively urban land resources are utilised. Not only density but mass-transit linkages are a crucial aspect in order to ensure mobility in dense urban areas.

- *Accessibility to diverse local services and jobs*. This looks at the proximity between residents and diverse local services including grocery shops, restaurants, cafes and clinics at the neighbourhood scale. In a compact city, land use is mixed and most residents have access to these services within a walking distance. In addition, location of jobs and homes is balanced.

Functional metropolitan regions are considered as the unit of analysis. It is important to note that compact city policies only make sense if pursued on a metropolitan scale since urban functional areas extend beyond municipal administrative boundaries within a metropolitan region.

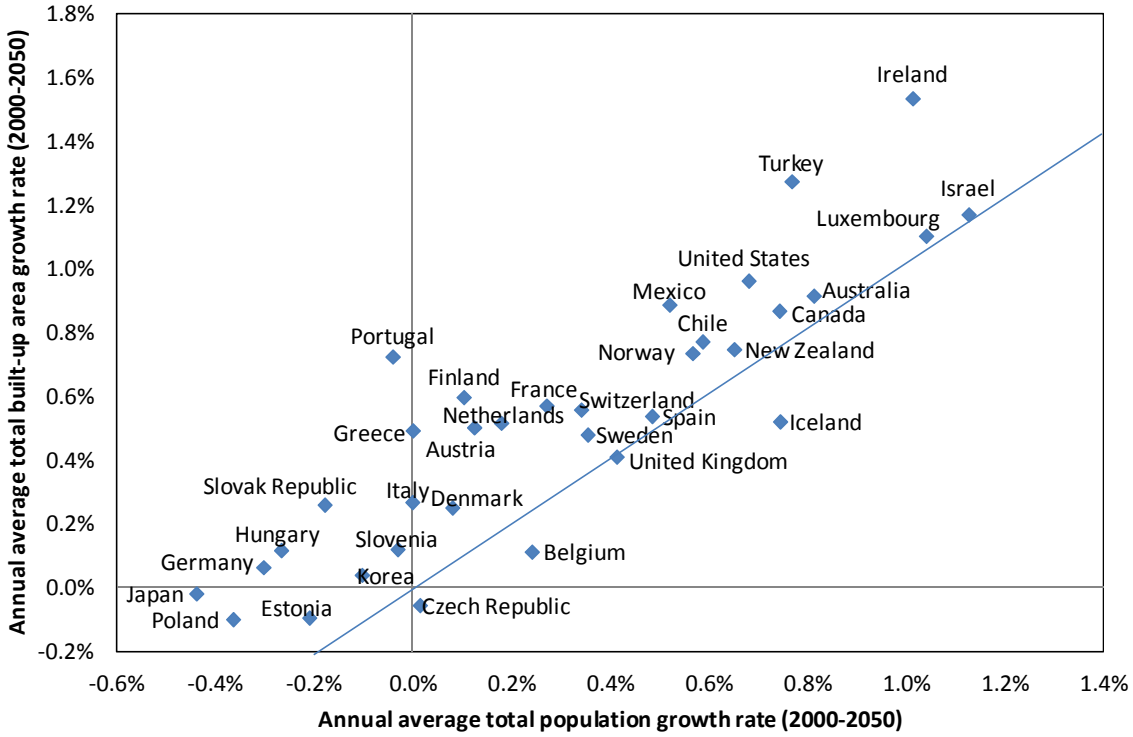
Five key urban trends related to compact city

Current urban trends underscore the importance of the role compact city can play. The following are five key urban trends which are related to compact city:

Land consumption. Continued urban population growth underscores the need to conserve land resources. By 2050, 70% of world population – and 86% for OECD countries – will live in urban areas (OECD, 2010). In line with this augmentation of urban population, built-up land expansion takes place at the expense of agricultural land, forests, open space

or wetlands, with a concomitant loss in the economic, recreational and ecological values that those ecosystems provide (OECD, 2008). Therefore, land consumption by sprawled urban development has impacts not only within the built-up area but also for considerable distance around it in terms of how land surfaces are reshaped, with valleys and swamps being filled, large volumes of clay and rock being extracted, and sometimes rivers and streams re-channelled. This increases stress on ecosystems and species (OECD, 2008). The importance of compact city is highlighted by the fact that land consumption increases more rapidly than population growth. Built-up areas grew at an annual growth rate of 2.6% worldwide between 1950 and 2010, whereas world population for the same period grew at 1.7% (OECD, 2011b, forthcoming). This trend of urban land consumption should continue in OECD countries over the period 2000-2050. During this time, it is expected that the consumption of land for built-up areas will increase at a faster rate than the total population growth in almost all OECD countries (30 out of 34) (Figure 1).

Figure 1. Comparison of population and built-up area growth rate by OECD country (2000-2050)



Source: OECD (2011b, forthcoming)

Global warming. The threat of global warming to cities is increasing, requiring effective countermeasures. The OECD projects that, if we continue on the present trajectory, global GHG emissions will increase by more than 50% by mid-century, causing world temperatures to rise from 1.7 to 2.4 degrees Celsius (℃) above pre-industrial levels by 2050, and from 4 to 6 ℃ or more in the long-term (OECD, 2009). Cities are directly related to the climate change in two ways. First, cities are major contributors to CO2 emissions, as the primary consumers of energy worldwide. Second, urban population and infrastructure are vulnerable to climate change. Coastal cities are particularly exposed to rising sea levels and storm surges due to climate change (OECD, 2010).

Energy prices. The world energy demand has been increasing over the last 40 years along with, and notwithstanding, a persistent rise in energy prices. OECD countries have experienced a persistent increment in the volume of energy consumption since the middle 1980s (OECD, 2011b, forthcoming). This long-term trend is expected to continue in the

future mostly due to emerging economies' growth. Total energy prices have been increasing in OECD economies since 1998, although after 2008 the trend is not clear due to the economic crisis (OECD, 2011b, forthcoming). The result of energy price increase can be substantial. The households that bought houses in outer suburbs could be affected by the increase in the price of energy, especially when transportation costs had been estimated much lower when they bought their house. In addition, metropolitan regions with high energy dependency might lose their economic competitiveness as energy price increases. Compact city could contribute to improving the situation because it makes urban regions less dependent on energy and thus more energy-price resilient. First, an energy price increase may encourage people to live closer to where they work. Second, it may encourage a modal shift from the automobile to public transportation. In addition, the fact that both location of houses and commuting modes are affected by energy prices indicates that energy price mechanisms can be used as a compact city policy instrument.

The challenge of sustainable economic growth. The recent economic crisis had negative impacts not only on private economic activities but also on local governments' finances. In many countries, sub-national government deficits and debt levels are expected to rise considerably due to a "scissors" effect: revenues fall as a consequence of the fall in activity, while spending soars due to the need for social welfare programmes (Blochlinger et al., 2010). In order to spur regional economic growth, urban spatial policies are expected to play a key role among other policies. Economic challenges may be brought on not only by economic crises, but also by long-term fiscal conditions. For example, in Japan, where demographic patterns forecast long-term depopulation (both in total and working-age), the fiscal management perspective looks more challenging than in other countries. Compact city policies can play a key role in two ways. First, they can reduce governments' financial burden by making their public service delivery more efficient. More and more governments are facing the need for efficient use of resources, including land and existing urban infrastructure. For example, in countries where governments can spend less and less tax money for purchasing land, the need to use space more efficiently would be greater. With successful compact city policies, governments can save public money to invest more efficiently or they can avoid tax increases that could be a heavy burden on the local economy. Second, successful compact city policies can remove barriers for economic growth (e.g. traffic congestion).

Demographic changes. Rapid and diverse demographic changes represent an urgent need for policymakers to adapt their urban policies. First, the total population of some OECD countries including Germany is expected to begin decreasing in the near future while the total population is already decreasing in Japan. On the metropolitan scale, an even greater contrast is that some regions will continue to grow while others will shrink. Second, the elderly population has doubled over the past 60 years in OECD countries and tripled in the world, and this trend will continue for at least 40 more years (OECD, 2011b, forthcoming). Third, the average size of households is decreasing in most OECD countries. The average household size has reduced from 2.95 to 2.55 from 1980 to 2008. The proportion of total households occupied by one person has increased from 22% to 29% in the past 30 years (OECD, 2011b, forthcoming). From an economic perspective, population decrease and ageing often implies a shrinking tax base and increasing health care expenditures. Therefore, a pressing policy question is how to keep public service delivery at current levels with a shrinking tax base. Another implication of ageing with regard to compact city is that the current urban structure with high automobile dependency may become increasingly less favorable, as an elderly population would need better access to local services without the need of using cars. Finally, the change in household size coupled with aging may change the preference of housing types and location in the market. Data shows that large-size households tend to live in suburbs enjoying more space while smaller-size and one-person households tend to live in dense city centres, and the trend remains the same regardless of the change in average size of households over time (Fouchier, 2004). This general tendency

combined with an increment in the number of one-person households implies a greater need for smaller houses, probably, in the urban cores where life-supporting services are available.

3. Policy outcomes: how compact city can contribute to urban sustainability and Green Growth?

Ways compact city can contribute to urban sustainability

Although the ways compact city can contribute to achieving urban sustainability are numerous and mutually-related, they can be summarised as follows (also shown in Table 1).

First, compact city can shorten intra-urban travel distances, thereby reducing carbon emissions from commuting and transport. It can also shorten travel time for workers and contribute to raising productivity (Prud'homme & Lee, 1999). In addition, it can lower travel costs and ensure mobility of low-income households. However, these benefits are all dependent on the degree to which overcrowding can be avoided.

Second, compact city can reduce automobile dependency by allowing mass-transit systems to be more economically viable and by encouraging walking, cycling and the use of public transportation, which reduces energy consumption and carbon emissions.

Third, compact city can influence the ways cities generate and consume energy. Compact city tends to consume less energy than other forms of urban development even without considering transport energy consumption. A cross-country analysis of urban density and electricity consumption illustrates that, as density increases in urban areas, per capita electricity demand decreases (OECD, 2010). It can also facilitate the use of district heating and cooling systems by allowing service to a greater number of customers in a given area than would be possible in a single-family residential zone (OECD, 2010). It also makes easier the provision of local energy generation technologies such as combined heat and power. This promotes technological development and innovation in the energy and building sectors.

Fourth, compact city enables the optimum use of resources, particularly land that is to be developed and encourages the recycling of already urbanised land. This is achieved by minimising the fragmentation of land use patterns which leads to the under-utilization of land, and by maintaining the value of land within already urbanised areas, which encourages the recycling of urban land. As a result, compact city conserves farmlands and natural biodiversity surrounding urban areas which would otherwise be lost irreversibly. It creates more opportunities for urban-rural linkage in terms of urban agriculture, renewable energy, recreational activities, etc. Farming closer to cities encourages local food consumption and reduces food travel distance. Urban agriculture and local food policy create new business demand (*e.g.*, farmers' market).

Fifth, compact city can increase the efficiency of infrastructure investments and reduces the cost of maintenance, particularly for line systems such as transport, energy and water supply and waste disposal. The segregation of land use associated with low density and sprawled urban development tends to result in a relatively high level of infrastructure construction – roads, water and sewer systems, schools and privately-owned utility systems – that would not be necessary under more compact development (TRB, 2002).

Sixth, compact city can enhance accessibility to local services. A study illustrates that more dense neighbourhoods have more access to daily service functions (convenience stores, banks, post offices, medical facilities, stations, etc.) within walking distance (Kaido and Kwon, 2008). Higher quality of life in turn attracts more talented people in cities, who generate more growth. Compact City also creates more diversity, vitality and interaction of

people, leading to the frequent exchange of ideas, which results in knowledge spill-overs and dynamic productivity improvements, which stimulates growth.

Despite of these potential benefits of compact city, not all of them have been supported by clear evidence.

Table 1. The contribution of compact city to urban sustainability

Policy sector	Opportunities	Potential impacts		
		Economic	Environmental	Social
Transport	Shorter intra-urban travel distances	• Raising productivity due to shorter travel time for workers	• Less CO2 emissions • Less pollutions from automobiles	• Raising accessibility due to lower cost
Transport	Less automobile dependency, more mass-transit, cycling and walking	• Development of green jobs/ technologies	• Less CO2 emissions • Less pollutions from automobiles	• Lower transportation cost • Improved human health
Energy	More local/renewable energy generation, less energy consumption per capita	• Development of green jobs/ technologies • More energy independency	• Less CO2 emissions	-
Land use	Optimum use of land resources, more opportunity for urban-rural linkage	• Maintaining land value • Rural economic development (urban agriculture, renewable energy, etc.)	• conserves farmlands and natural biodiversity • Less CO2 emissions due to shorter food travel mileage	• Higher quality-of-life due to more recreational activities
Land use	More efficiency in public service delivery	• Lower infrastructure investments and cost of maintenance	-	• Maintaining the standard of public service
Land use	Job-home balance, better access to diverse local services	• More skilled labour force attracted by high quality-of-life • Raising productivity due to more diversity and vitality	-	• Higher quality-of-life due to access to local services

Source: OECD (2011b, forthcoming)

Compact city's contribution to Green Growth

It should be emphasized that compact city can play a key role in Green Growth strategy in cities. Regarding the policy sector, compact city can particularly be effective in transport, energy and land use. The core value stems from the fact that compact city can address integrated urban policy goals (economic viability, environmental sustainability, social equity, etc.). While such policy goals were previously addressed in a separate – even mutually exclusive – way, compact city policies link separate policy priorities. In other words, compact city can address the multi-dimensional goals of urban policies. In particular, it can address economic and environmental goals simultaneously without major tradeoffs.

Compact city can also produce policy complementarities. For example, public transportation investment and densification near transportation nodes have strong policy complementarities, in that by combining these two policies, more people are likely to use the

new public transit and both the operators and the residents will be better off. In addition, compact city is a goal-oriented concept and policy measures could be selected from a wide range of options. The flexibility in selecting policy measures can facilitate complementarities.

Considaration of potention negative outcomes

In parallel with the positive outcomes, the potential negative consequences of compact city policies are often debated. These include congestion, housing-affordability, quality-of-life, urban heat islands and high energy demands in built-up areas. Moreover, depending on the location, the high density built-up areas may increase their vulnerability to natural disasters such as earthquake, tsunami, flood and fires caused by these natural disasters. They may also be more affected by climate change. A careful consideration is needed to mitigate the vulnerability and to make cities resilient to the various risks associated with natural and man-made disasters, upon developing high density built-up areas.

Overall, even though potential negative outcomes needs to be considered carefully, it can be concluded that compact city's potential is not to be neglected. More quantitative studies for better understanding of the policy outcomes are necessary, so that strong policy commitment and decision-making can be made by policymakers based on hard data.

4. Policy instruments for compact city

Policy framework

Four main strategies with a couple of complementary strategies are identified to constitute compact city policy framework: i) setting explicit compact city goals in a strategic plan; ii) enhancing contiguous development at urban fringes; iii) maximising use in all the existing built-up areas; and iv) enhancing job-home balance and diverse local services in urban centres. Complementary strategies include: coping with traffic congestion; ensuring housing affordability and diversity of households; promoting green construction and managing urban heat island effects; and enhancing attractiveness of urban centres.

International comparative analysis and assessment will help to better understand the policy outcomes in different local contexts. In this study, five metropolitan regions were chosen to reflect different urban contexts: Melbourne (Australia), Vancouver (Canada), Paris (France), Toyama (Japan), and Portland (United States). They display a wide variety of metropolitan profiles in terms of geographical location, population size, etc. Moreover, the five regions have introduced a variety of policy instruments, each shaped by their local circumstances (Table 2). An important note is that these regions were not selected because they have already reached compact city goals, but because they are making significant efforts toward achieving them. It is also very important to note that, while some metropolitan regions have been implementing compact city policies for a long time, others have just launched their efforts. In these instances, assessing policy performance was not always feasible.

Key results of the comparative assessment

Wide stakeholder involvement and coordination between governments in preparing a strategic plan. For example, the Paris region's new master plan (SDRIF) encourages higher density in existing urban spaces and prioritises development in areas served by public transportation. It requires every municipality to set a density target. The counterpart of this “ville compacte” is the plan’s strong effort to preserve and mobilize the region’s open spaces, whose various economic, environmental, and public uses are now better acknowledged. The

plan was prepared through negotiation with over 1,300 municipalities and an extensive participation of local stakeholders.

Table 2. The characteristics of the case-study regions

Name (metropolitan regions)	Geography	Population and demographic trend	Major policy instruments for compact city
Melbourne, Australia (Statistical area of Melbourne)	Coastal, flat	Very large 4 million, Rapidly growing	• Melbourne 2030 (Spatial development strategy published by the State of Victoria in 2002; revised in 2007) • Deregulation policies on land use (for mixed use development) and conversions (from office buildings to residential) in downtown Melbourne in mid 90's
Vancouver, Canada (Metro Vancouver)	Coastal, flat, mountains in the north	Large 2.2 million, growing	• Regional Growth Strategy with Urban Containment Boundary (under preparation) • Densification in the existing built-up areas (Laneway Housing, etc.) • TOD (Frequent Transit Network, etc.)
Paris, France (Île-de-France)	Inland, flat	Mega region 11 million, growing	• SDRIF 2007 (regional master plan for Île-de-France) • Minimum density requirement etc.
Toyama, Japan (Toyama prefecture)	Coastal, flat and fertile farmland	Medium to small, 1.1 million, Population decline, ageing	• 2008 Master Plan with explicit compact city goals in a depopulating society • Incentives to concentrate residential development along the transportation corridors (since 2003) • Transport (LRT) investment using PPPs
Portland, United States (SMA Portland-Vancouver)	Inland, flat and fertile farmland	Large 2.3 million, growing	• 1973 State law and Urban Growth Boundary • 2040 Growth Concept (published in 1995) • TOD (Portland Streetcar, MAX) • "20-minutes neighbourhood" initiative

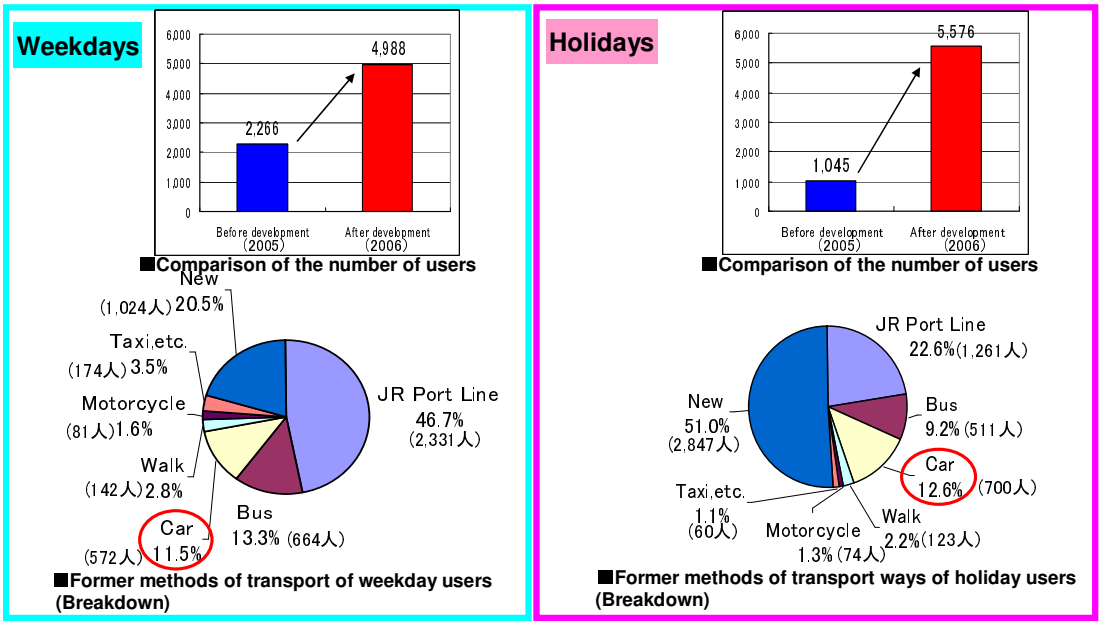
Source: OECD (2011b, forthcoming)

Coherent urban and rural/agricultural policies. As urban sprawl occurs on urban fringes, where urban and rural/agricultural land uses are competing with each other, it is important to synchronise urban policies with rural policies and to avoid conflict between them. In Portland, for example, an urban growth boundary was introduced to protect fertile farmland, which led to containing urban development effectively. In order to strengthen competitive rural land uses, it could be effective to foster urban agriculture and/or renewable energy generation.

Densification efforts within the existing built-up areas. A prominent example of policy complementarities is Transit Oriented Development (TOD), in that public investment will stimulate private investment in high-density development near transportation stations at the same time that such development can avoid traffic congestion and sustain mass-transit system operation. TOD is especially more effective in existing built-up areas (urban centres and brown-fields in particular), compared with TODs in new suburban development. Portland's TOD using streetcars is worth noting because it has been stimulating brown-field redevelopment in the centre of the metropolitan region. More than $6 billion of development - residential and commercial - has occurred at light rail stations since the first line opened in 1986. The average development density (FAR) was 0.65 higher than the average experienced outside station areas. Low-to-moderate value properties near the stations redeveloped at twice the rate reported for similar properties away from the stations (Hovee, 2008). It should also be noted that Portland's TOD policies created the new business need for streetcars, which led to the first national production of modern streetcars. In Toyama,

extensive public transportation investment was made to renovate a private railway line, which had been scheduled to be phased out. At the same time, the city introduced an incentive programme to encourage residential development near the transit stations. As a result, the city is seeing both an increase of transit users (Figure 2) and a gradual migration of citizens from the suburbs into the targeted areas.

Figure 2. Changes in transport modes from private cars to the LRT in Toyama



Source: City of Toyama

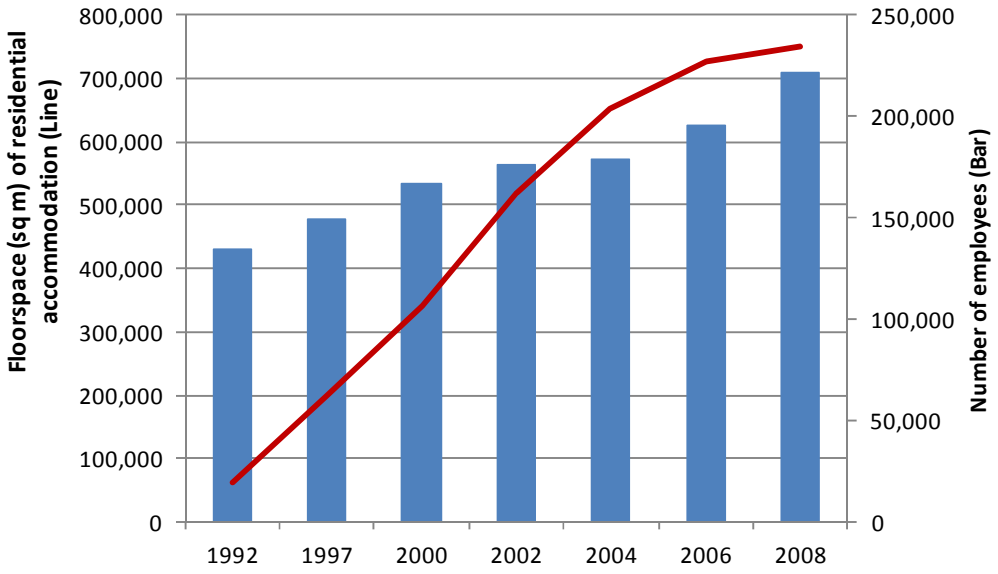
Deregulation combined with fiscal incentive tools to promote mixed land use in urban centres. In urban centres, deregulation combined with fiscal incentive tools to promote mixed land use can be effective. Melbourne, as a counter measure to the rise of the office vacancy rate, allowed mixed land use in the mid-90s in the Central Business District (CBD). During this process, buildings with residential use increased at a high pace. Accordingly, apartment supply in the CBD increased, and land use became increasingly mixed. Also, during this period, employment in Melbourne substantially increased (Figure 3).

Coupling complementary strategies. In order to minimize potential negative impacts of compact city policies (traffic congestion, housing affordability, high energy demand in urban centres, urban heat islands, etc.), complementary strategies should be addressed simultaneously. For example, allowing additional housing units in existing built-up areas can achieve density while at the same time addressing affordable housing shortages. In Vancouver, several municipalities have set up initiatives (including City of Vancouver's EcoDensity initiative) to achieve density in all the built-up areas while at the same time addressing housing affordability. Providing green open space and fostering identity in urban centres is also an important factor to minimise negative perception of density. In Melbourne, the city's efforts in revitalising the CBD were coupled with focused investment in public realms and urban design guidance. Promoting green building is crucial to achieve density in built-up areas while dealing with high energy demand and urban heat islands.

A reflection of local circumstances. The comparative assessment underscored the need for considering and adapting local context when designing and implementing compact city policies. Local context includes population size, lifestyle and culture, speed of urban growth/decline, landscape, industry, policies taken in the past and present, and current

economic, social and environmental performance. For example, while the comparative assessment in this study basically covers only the OECD countries, the application of the compact city concept to developing regions should take into account some significant differences in the urban context between developing and developed regions. These differences include: i) faster demographic, spatial and economic urban growth; ii) higher urban density; iii) generally inefficient regulatory, institutional and technical frameworks; iv) limited financial resources for urban investments; and v) existence of many informal settlements. Under such urban context, further densification alone would lead to excessive density, which in turn aggravates congestion, environmental conditions and poverty.

Figure 3. Changes in floor areas of residential buildings and employment in Melbourne CBD



Source: Census of Land Use and Employment, City of Melbourne

The study overall illustrated that existing policy tools for compact city need to be re-examined in order to address the multi-dimensional goals, including Green Growth. Traditional regulatory tools and fiscal tools should be better aligned to allow more flexible coordination among different policy objectives. For example, introducing taxes discouraging excessive automobile use could allow a more flexible operation of regulatory tools such as urban growth boundaries. Also, a tariff policy advantageous for public transport users could be effective in order to translate densification policies and investments in public transport systems into an actual reduction in automobile use. Coherence across different fiscal instruments is crucial for such mechanism to be effective.

5. Metropolitan governance for compact city

Governance challnges

Compact city policies, by their nature, face complex governance challenges, because they target multi-dimensional goals and because they only make sense if pursued on the scale of the metropolitan region. Compact city policies deal with location of development and how space is used in development, and thus often involve conflicting interests and create strong opposition from certain interest groups. How to involve citizens in planning and in reaching consensus on these plans is a significant challenge. It is also difficult to sustain a broad consensus over the long term to transform existing cities into compact ones. There are many policy cases in which a policy measure was taken only to see it abolished after a change in political regime. There are also many cases in which policy instruments looked good but were not supported and eventually not implemented properly. Financing of compact city policies is another key concern.

Key results of the comparative assessment

The case studies, while rich and textured in their variety, allowed for the identification of four common thematic elements that together can lead to the achievement of compact city outcomes:

A region-wide, integrated, long-term vision. A vision that frames an integrated strategic regional development plan is a key to ensureing effective implementation of compact city strategies. In this sense it is a governance tool, because it sets out objectives and presents plans on how to achieve them that imply cooperation among key public and private stakeholders in the metropolitan region. City and regional governments need to make commitment to compact city policies by designing and implementing this region-wide long term vision. This will help residents and private investors see the spatial development image of the future and enable development in accordance with the vision. The central government has an important role to play by committing itself to compact city concepts and by providing direct policy, governance and financial support to the city and regional governments' strategic plans to implement the vision.

Clear delineation of roles and responsibilities. In designing and implementing compact city strategies, the case studies demonstrated that a clear understanding of who does what – within governments, between governments and between the public and private sectors – is central to the successful achievement of compact city goals. Given that by definition compact city strategies implicate all levels of government, since no single tier controls all the policy, regulatory and fiscal tools to implement them, it is vitally important for all key actors to understand their roles and responsibilities from the outset because this understanding determines the tools that each player brings to the table and frames the extent of the policy, financial and regulatory cooperation that will be required to implement the strategies effectively. Therefore, vertically and horizontally integrated governance structures work best, especially if they are designed to drive several policy objectives simultaneously.

Networked, coordinated governance. The case studies demonstrated that where vertical and horizontal cooperation worked, the community benefited and compact city outcomes were achieved more smoothly. But beyond traditional cooperation between municipalities within a metropolitan region and between levels of government in an urban agglomeration, innovative institutional relationships beyond those between governments can enhance the potential to achieve compact city outcomes. For example, the relationship between Portland State University's School of Public and Urban Policy and Metro Portland is a case in point: metropolitan spatial planning has over the years benefitted from the academic expertise from the University's School, but perhaps more importantly from a

practical viewpoint, the University and Metro joined forces to plan the streetcar lines around and through the campus, which over time drove densification and business development across the CBD and vastly improved the quality of life for students and residents alike in the neighbourhoods in and around the campus.

Accountability, transparency and reporting. This is the one set of governance tools that appears to be the most underdeveloped in the case-study regions. Certainly key elements relating to transparency and accountability are relatively sophisticated: Vancouver's and Portland's citizens' engagement strategies are a case in point. That said, in none of the case studies was there a robust set of comprehensive accountability arrangements. Glaring by their absence were metropolitan-level performance indicators to allow stakeholders and the general public to measure progress toward the achievement of economic, social and environmental outcomes related to the compact city vision. Data is crucial to ensure transparency – and to ensure that decision-makers can adjust strategies in on-going consultations with residents and key stakeholders when objectives are not being met.

Endnote

1. The opinions expressed in this paper is the sole responsibility of the author and do not necessarily reflect those of the OECD or the governments of its member countries.

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