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CUSTOM REPORT

Greater Vancouver Economic Scorecard 2018

Presented to: GREATER VANCOUVER BOARD OF TRADE

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Prepared by the Centre for Municipal Studies

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- Greater Vancouver's ranking has improved to seventh out of 20 global metro regions in the 2018 scorecard, from ninth in the 2016 ranking.
- Once again, various indicators that measure the regions' relative attractiveness to both skilled talent and business investment are used to calculate their overall scores.
- Despite this year's higher mark, Greater Vancouver still faces several challenges including a relatively small market size, a comparatively short public transit railway network length, poor housing affordability, and low per capita after-tax income.
- Scorecard 2016 argued that greater coordination among Greater Vancouver's component municipalities was required to address regional challenges that both transcend municipal boundaries and limit the area's socio-economic performance.
- Thus, Scorecard 2018 includes an in-depth analysis of regional coordination and governance issues affecting Greater Vancouver and its constituent municipalities.
- The Conference Board recommends that any reforms to governance structures and practices within and among Greater Vancouver institutions reflect the best practices highlighted in the scorecard.

This scorecard, a follow-up to one released in 2016, compares Greater Vancouver's performance on key economic and social indicators with the performance of 19 other international metropolitan areas. This benchmarking grades Greater Vancouver's competitiveness and attractiveness to both businesses and people—essential precursors to prosperity and growth. We review the area's past and current scorecard grades and assess its future prospects.

Greater Vancouver is defined as the Vancouver census metropolitan area (CMA). This area encompasses 39 census subdivisions including the City of Vancouver. Greater Vancouver is Canada's third-largest metro region, measured by both population and the Conference Board's proprietary estimate of local real (inflation-adjusted) gross domestic product (GDP), after Toronto and Montréal. Greater Vancouver has about 2.6 million residents and, in 2017, produced goods and services valued at $134 billion—59 per cent of British Columbia's GDP.

Growth of Greater Vancouver's real GDP per capita has outpaced the national average in seven of the past 10 years. Over the past five years (2013–17), Greater Vancouver's annual real GDP per capita growth averaged 2.3 per cent, more than twice the national average of 1.1 per cent. Greater Vancouver's recent economic success has been largely driven by brisk in-migration, an influx of new businesses and private investment, a booming housing market, and the growing importance of its role as Canada's Pacific gateway to Asia. We expect per capita GDP expansion to continue in Greater Vancouver, albeit at a slightly slower 1.1 per cent annual pace on average between 2018 and 2022. Still, this will slightly outpace Canada's projected 0.9 per cent advance.

Greater Vancouver's growing ties to Asia have generated significant economic activity and wealth creation. The area's status as Canada's gateway to Asia helps explain the results of the cluster analysis in our 2016 report, which showed that transportation was Greater Vancouver's largest traded cluster—that is, its largest interconnected group of companies and associated institutions that operate in proximity to each other and often serve markets beyond the region in which they are located. Moreover, recent data tracking shows that foreign investment from that region is at least partly responsible for Greater Vancouver's boom in residential real estate.

But, as we found in 2016, Greater Vancouver has other strengths, with a competitive advantage (relative to the rest of Canada) in industries like financial services, insurance, tourism, and information technology. The services sector is becoming an ever more important job-creator. While Greater Vancouver recorded roughly four services-sector jobs for every goods-sector position in the five years to 1992, this ratio increased to 5-to-1 in the five years ending 2017. More specifically, the professional, scientific, and technical services industry led all services in absolute job growth, creating nearly 25,000 jobs—many of them knowledge based—on a net basis over this period. This was about a fifth of total services job creation, making the industry Greater Vancouver's third largest employer.

This is the region's history. Future prosperity depends on Greater Vancouver's response to globalization and its ability to compete. Most global metropolitan regions like Greater Vancouver are in a heated battle to attract business investment and highly skilled workers, and the supply of labour is being eroded by accelerating retirement of an aging population in many developed countries. The battle for mobile talent seems to be just beginning. In Canada, the number of baby boomers leaving the workforce will accelerate for at least the next decade. This will limit average annual labour force growth to 0.7 per cent until 2040, about half the pace of the prior 20-year average. The effects of an aging population are already being felt.

The winners in this global struggle for workers and investment will be regions that offer the best economic and lifestyle options. Regions need to assess their strengths and weaknesses and compare them with the pluses and minuses of other cities. Our report does just that, benchmarking Greater Vancouver against other global metro regions on 38 indicators—22 economic gauges and 16 social measures. The economy category grades local economic performance and the business environment, while the social grouping assesses various social and environmental yardsticks. Achievement of high grades in both realms suggests a region is attractive to both people and investment.

Schoolhouse Scoring for Benchmarking

One of the purposes of this scorecard is to assess, through benchmarking, Greater Vancouver's relative performance and potential in attracting labour and investment against 19 other global metro regions. Given the strategic importance of transportation to Vancouver's economy, as confirmed by a recent cluster analysis, 18 of these 19 comparator regions were selected because they are also major transportation gateways. Calgary, the lone comparator region without an outsized transportation sector, is included because its relative proximity to Vancouver makes it a useful competitive measuring area.

The results of the Vancouver scorecard are based on 38 indicators grouped into two categories: economy and social. There are six new indicators this year: one in economy and five in social. Our goal was to add more social indicators than economy ones to achieve a better balance between the two categories. This report features 22 economy indicators and 16 social ones.

We used a report card–style ranking of A–B–C–D to assess the performance of metropolitan areas for each indicator. We assigned letter grades using the following method: for each indicator, we calculated the difference between the top and bottom performer and divided this figure by four. A metropolitan area received a scorecard ranking of A on a given indicator if its score was in the top quartile, a B if its score was in the second quartile, a C if its score was in the third quartile, and a D if its score was in the bottom quartile. A metropolitan area was assigned an "n.a." if data were unavailable for that indicator. (See Chapter 3 and Appendix 2 for detailed methodology.)

The Big Picture: Singapore Is First

Table E1
Overall Ranking

Ranking 2018 (2016)	Metro area
1 (1)	Singapore
2 (4)	Calgary
3 (5)	Seattle
4 (8)	San Francisco
5 (2)	Copenhagen
6 (10)	Toronto
7 (9)	**Greater Vancouver**
8 (17)	Manchester
9 (12)	Seoul
10 (14)	Montréal
11 (7)	Sydney
12 (3)	Hong Kong
13 (19)	Los Angeles
14 (16)	Halifax
15 (11)	Portland
16 (15)	Houston
17 (6)	Barcelona
18 (18)	Shanghai
19 (13)	Rotterdam
20 (20)	Miami

Singapore retains its position at the top of the overall rankings. (See Table E1.) The metro area is ranked first and obtains an A grade in the economy rankings and comes in 12th with a B grade in the social

rankings. **Calgary** moves up to number two in our rankings from fourth position in 2016, making it once again the top Canadian performer in the scorecard. It obtained top ranking in the social category, with an A grade, and ranked eighth with a B grade in the economy grouping. **Seattle** is ranked third in 2018 following a fifth-place finish in 2016, with the top-three overall finish powered by strong results in both categories—a third place finish in social group and a fifth-place position in the economy category.

San Francisco, eighth-ranked city in 2016, comes in fourth this time, meaning two metropolitan areas with world-renowned high-tech clusters rank in the top five. San Francisco finishes in fourth place in the economy section, earning an A grade, while also scoring a healthy B grade in the social category. Our fifth-ranked metro area is **Copenhagen**, which moved down three spots from 2016.

Greater Vancouver, the subject of this scorecard, is ranked seventh overall, up two spots from 2016 on the strength of an improved B score for its economy, and receives almost the same ranking for its social indicators.

Toronto ranks one spot ahead of Greater Vancouver in sixth place, a change from the 2016 scorecard, when Toronto finished one position below Greater Vancouver. **Manchester**, **Seoul**, and **Montréal** round out the top 10. **Sydney** and **Hong Kong** finish in 11th and 12th positions, respectively. Sydney fell four spots in our overall rankings in 2018 compared to the 2016 analysis. Hong Kong's position in the overall rankings also fell sharply from third to 12th place. **Los Angeles** appears in 13th place, up from 19th place in the 2016 scorecard. **Halifax** ranks 14th, the lowest-placed Canadian metropolitan area. **Portland**'s 15th overall ranking slots it four positions below its performance in the 2016 report.

Finally, the five bottom-ranked metro areas feature two U.S. metro regions—**Houston** and **Miami**—two European regions—**Barcelona** and **Rotterdam**—and **Shanghai.** Last-place Miami is pulled down by a D grade in the social category. Houston's 16th-place ranking stems from a D grade in the social category, offsetting a B on the economy side. In contrast, Shanghai's 18th-place finish is due to its dead-last finish in the social category, which more than offsets its A in our economy ordering. Barcelona, in 17th place overall, suffers from a D grade in the economy category and a sharp deterioration in the social ranking, falling from first to 13th between the previous report and this year's edition. Rotterdam, ranking second from the bottom, gets mediocre results in both the economy and social categories.

Economy: Vancouver Places Seventh

The economy category seeks to determine each region's relative attractiveness to both investment and highly skilled workers. Indicators attempting to gauge a metropolitan area's current economic and wealth performance include real GDP per capita, after-tax income per capita, labour productivity (real GDP per worker), employment growth and the unemployment rate, high-tech employment, market size, and various indicators of the cost of doing business, including KPMG's total tax index.

Six indicators, including one new to this year's report, attempt to gauge a metropolitan area's transportation industry performance. Most of the regions selected for this scorecard, including Greater Vancouver, qualify as transportation gateways.

The economy category also includes two indicators of an area's high-tech capacity—venture capital investment per US$1 million of GDP and high-tech employment as a share of total employment—as well as two specific tourism indicators—number of international visitors and number of participants in international association meetings.

Table E2

Economy Ranking

Ranking 2018 (2016)	CMA	Value	Grade
1 (1)	Singapore	0.538	A
2 (6)	Copenhagen	0.483	A
3 (2)	Hong Kong	0.472	A
4 (8)	San Francisco	0.471	A
5 (5)	Seattle	0.469	A
6 (3)	Shanghai	0.454	A
7 (9)	**Greater Vancouver**	**0.417**	**B**
8 (4)	Calgary	0.417	B
9 (7)	Houston	0.416	B
10 (18)	Los Angeles	0.388	B
11 (13)	Toronto	0.388	B
12 (10)	Seoul	0.384	C
13 (19)	Manchester	0.365	C
14 (12)	Rotterdam	0.357	C
15 (20)	Miami	0.355	C
16 (16)	Montréal	0.341	C
17 (15)	Barcelona	0.323	D
18 (17)	Portland	0.321	D
19 (11)	Sydney	0.320	D
20 (14)	Halifax	0.292	D

Singapore is the top-ranked area in the economy category, and one of three Asian metro regions to score an A grade in this category (Hong Kong and Shanghai are the other two). North America is also

well represented on the A team, accounting for two of the six metro areas in this group. Europe's Copenhagen rounds the A graders. (See Table E2.) There is a relatively large spread among this group: Singapore's normalized score is 8.5 percentage points higher than sixth-place Shanghai's.

The group of five B-ranked metro regions starts with Greater Vancouver and includes Calgary and Toronto. Montréal and Miami are among five C-graded cities. Two of the four cities graded D, including Halifax, are in North America.

Table E3
Greater Vancouver's Economy Performance

	Grade		Ranking	
Indicator	**2018**	**2016**	**2018**	**2016**
KPMG's total tax index	A	A	4/14	3/12
Office rents (US$ per square foot)	A	A	6/18	5/17
Unemployment rate	B	C	6/20	10/20
Port cargo tonnage per $1 million of GDP	B	B	3/19	3/19
Venture capital investment per $1 million of GDP	B	C	3/14	4/11
Labour productivity growth	B	B	4/20	7/20
Inbound airport seat capacity per capita	B	C	8/20	10/20
Real GDP per capita growth	C	C	4/20	7/20
Port container traffic (TEUs) per $1 million GDP	C	C	5/19	5/19
Inbound airport cargo tonnage capacity	C	C	8/20	9/20
High-tech employment share	C	C	8/20	9/19
Number of cruise vessel calls	C	C	9/18	7/18
Employment growth	C	B	13/20	12/20
Labour productivity	C	C	13/20	12/20
Real GDP per capita	C	C	13/20	14/20
No. of flight destinations at major airport	C	-	14/20	-
After-tax income growth	C	C	14/20	8/19
No. of participants at int'l association meetings	D	C	9/20	8/19
International visitors	D	C	12/18	11/18
After-tax income per capita	D	C	12/20	13/20
Market size	D	D	16/20	16/20
METR on capital investment for businesses	D	C	17/17	10/17

Although Greater Vancouver finishes in seventh place in the economy ranking, up two spots from Scorecard 2016, many of the areas of concern identified in the previous ranking crop up again in this latest edition. (See Table E3). Greater Vancouver's highest ranking in any one economy indicator, and one of its two A grades, is KPMG's total tax index, where it places fourth in a group of 14 metro areas for which we have data. This index measures the total taxes paid by similar corporations in a location and industry, benchmarked against the total taxes paid by similar corporations across the United States. However, this indicator has not been updated to reflect recent U.S. tax cuts. It also does not reflect a

new payroll tax set to be introduced in British Columbia on January 1, 2019. This suggests that Greater Vancouver's relative position in this index will likely take a hit in subsequent editions of the scorecard.

On the other hand, Greater Vancouver struggles in the scorecard's other tax-related indicator—the marginal effective tax rate (METR) on capital investment for business—an indicator that has been updated to reflect 2018 U.S. tax legislation changes. The METR measures the proportion of the rate of return from a new investment that is required to pay all capital-related taxes. Everything else being equal, a lower METR will result in a higher return for businesses. The recent U.S. tax cuts, which lowered the METR in all the U.S. comparator regions, pushed Greater Vancouver all the way to the bottom of the rankings. The region's poor performance on this indicator only heightens the need to replace the provincial sales tax with a value-added sales tax, a key policy recommendation in the 2016 scorecard.

One area where Greater Vancouver has a clear advantage is in office rents, its other A grade performance. This advantage, however, could also be viewed in a negative light since low rents could also be because demand for office space is not as strong here as in other regions, which in turn could be tied to Vancouver's struggles to attract corporate head offices since the 1980s.

Greater Vancouver also does generally well on the transportation gateway-related indicators. Among this group, Greater Vancouver's best result is in port cargo tonnage, where it ranks third and gets a B grade—maintaining its lofty position from the 2016 scorecard. Greater Vancouver also remains the highest-ranked North American port in terms of port container throughput scaled by GDP. Greater Vancouver is also home to Canada's largest cruise port. Unfortunately, activity at Greater Vancouver's airport is more middle of the pack. A new statistic added to this year's benchmarking analysis confirms Greater Vancouver's reputation as a middling performer on airport-related indicators. Greater Vancouver ranks 14th out of 20 on the number of direct flight destinations offered at a region's major airport, ranking behind Toronto and Montréal, but ahead of Calgary and Halifax among its Canadian counterparts.

The two indicators that measure the strength of the high-tech sector, the predominant growth driver in innovation-focused city-regions, offer glimmers of hope for Greater Vancouver. First, Greater Vancouver climbed one spot in venture capital per $1 million of GDP, moving into third place and flipping a C grade in Scorecard 2016 to a B grade in this year's report. Still, it remains eclipsed by San Francisco, where venture capital per $1 million of GDP is 10 times higher. Greater Vancouver also moved up one spot in the high-tech sector's share of total employment, climbing from ninth to eighth place.

Once again, Greater Vancouver's most disappointing performances among the economy-focused indicators are the ones that are in per capita or per worker terms, which is the same issue that was flagged in Scorecard 2016. Greater Vancouver finishes 13th and earns C grades in both labour productivity (real GDP per worker) and real GDP per capita (real GDP per person), nearly identical to the results in the previous report. The poor performance in those two series is particularly disappointing since they are so closely connected to a region's standard of living. With such mediocre results in these two indicators, therefore, it is not surprising that Greater Vancouver's ranking in after-tax income per capita is similarly poor and earns it one of five D grades in the economy ranking.

The results of the economy ranking also reveal that Greater Vancouver suffers from its small market size, earning it another D grade, and struggles in two tourism-focused indicators—number of participants in international meetings and number of international visitors—its final two D grades.

Social: Vancouver's Livability Shines Through

The social category contributes to our understanding of how 20 metro areas are performing on 16 measures of a metro region's socio-economic, environmental, and quality-of-life attributes. These measures underpin a region's ability to lure educated, creative, and diverse people. Such individuals are much in demand to fill cities now and will continue to be in demand in the future. These people will consider regional quality-of-life attributes, such as those evaluated here, as they choose where to locate.

Table E4
Social Ranking

Ranking 2018 (2016)	CMA	Value	Grade
1 (11)	Calgary	0.644	A
2 (5)	Toronto	0.617	A
3 (6)	Seattle	0.583	A
4 (15)	Halifax	0.582	A
5 (3)	Sydney	0.577	B
6 (10)	San Francisco	0.572	B
7 (9)	Montréal	0.561	B
8 (7)	**Greater Vancouver**	**0.560**	**B**
9 (2)	Copenhagen	0.554	B
10 (4)	Portland	0.543	B
11 (8)	Manchester	0.543	B
12 (16)	Singapore	0.534	B
13 (1)	Barcelona	0.532	B
14 (14)	Seoul	0.522	B
15 (17)	Los Angeles	0.490	C
16 (13)	Rotterdam	0.462	C
17 (19)	Houston	0.447	D
18 (12)	Hong Kong	0.424	D
19 (18)	Miami	0.418	D
20 (20)	Shanghai	0.391	D

Two Canadian metro areas, Calgary and Toronto, top the social rankings. (See Table E4). Seattle and Halifax round out the A-rated jurisdictions, finishing in third and fourth place, respectively. The 10 cities receiving B grades are a disparate group featuring four cities from North America, three from Europe, two from Asia, and one from Australia.

Greater Vancouver finishes in eighth place and earns a B grade, one spot lower than in scorecard 2016. While it ranks three positions below Sydney— the top-rated B area—only 1.7 percentage points

separate them. Two metro areas—Los Angeles and Rotterdam—are graded C. The four cities receiving D grades are also a diverse group, including two U.S. metropolitan statistical areas (Houston and Miami). Shanghai continues to languish in last place, finishing last in six indicators.

Table E5

Greater Vancouver's Social Performance

Indicator	Grade		Ranking	
	2018	2016	2018	2016
EIU democracy index	A	-	2/20	-
Proportion of population that is foreign born	A	A	2/20	2/19
Air quality	A	A	4/20	1/20
Homicide rate	A	A	12/20	9/20
Female participation rate	B	-	5/19	-
Income inequality	B	C	8/20	11/20
Average travel time to and from work	B	C	9/19	10/19
Proportion of population aged 25–34	B	D	9/19	7/19
Share of population employed in culture	B	B	11/20	10/20
Age dependency ratio	C	-	7/20	-
Non-car commuting	C	C	8/18	8/17
Share of population with at least a bachelor's degree	C	C	9/20	9/20
Climate	C	B	12/20	12/20
Change in housing affordability	C	-	12/15	-
Housing affordability	C	D	13/15	15/17
Public transit railway network length	D	-	14/20	-

Greater Vancouver's small drop in the social rankings from seventh place in the 2016 report to eighth place in this version, along with its identical letter grade of B, leaves us with the same conclusion as last time: it remains one of the world's most livable areas but has some vulnerabilities that need to be addressed. (See Table E5.)

Among the category's 16 indicators, Greater Vancouver's highest ranking is second place, a feat that it manages in two indicators—the democracy index and proportion of the population that is foreign born. It scores As on both these indicators. The two other A grades for Greater Vancouver are for its high air quality and low homicide rates, matching its performances in the previous report. Despite maintaining the A grades, Greater Vancouver fell in the rankings in both indicators—from first to fourth in air quality and from ninth to 12th in homicides.

Included among Greater Vancouver's five B grades is the female workforce participation rate, one of this year's new social indicators. Canadian metro areas dominate the top of the rankings—Greater Vancouver sits in fifth place behind the other four Canadian cities benchmarked in this scorecard. Several factors likely explain why this ratio is elevated in Canada, not least of which is the country's enlightened maternity leave policy.

The share of workers employed in cultural industries also earned Greater Vancouver a B grade, matching Scorecard 2016's result. The remaining three indicators for which Greater Vancouver received B grades this year all signal an improved showing compared with the previous benchmarking analysis. Grades for income inequality and average commuting times improved from a C to a B, while the proportion of the population aged 25–34 enjoyed an even more impressive jump from a D to a B. The grade improvement on this latter indicator is nice to see, but the results are based on different geographic boundaries and thus are not directly comparable. The 2016 scorecard featured city-level data, and this scorecard features metropolitan-level data with a larger geographic area.

The C group of indicators also includes a statistic new to the scorecard—the age dependency ratio. Greater Vancouver places in the top 10, but a C grade is levied because its ratio, at 42.2 per cent, is almost 14 percentage points higher than first-place Shanghai's. (A lower ratio is deemed better because it signals lower pressure on the working-age population to cover the costs of the dependent population.)

The proportion of the workforce that commutes by car also earns Greater Vancouver a C, the same grade it received in the previous report. About 70 per cent of Greater Vancouver's working-age population drives to and from work, well above the proportions in the Asian areas that dominate the top of the rankings. Great Vancouver also gets a C on the proportion of the population aged 25 and over with at least a bachelor's degree. Just over 34 per cent of this population cohort in Greater Vancouver holds at least a BA, while the share is closer to 50 per cent in first-place San Francisco.

Greater Vancouver also gets a C on climate, as determined by the Conference Board's comfortable climate index. True, the area is renowned for its mild climate, and a moderate daily maximum temperature is one component of the index. However, Greater Vancouver's high marks on that front are partly drowned out by its relatively few days of sunshine, the other component of the index.

Greater Vancouver's final C grade is in housing affordability, measured as the median house price as a ratio of median household income. This is an improvement from its C in Scorecard 2016, but no cause for celebration: Greater Vancouver still experienced a deterioration in affordability between the two scorecards, and it is only awarded a higher grade because Hong Kong experienced an even bigger decline. In fact, Greater Vancouver still ranks third from the bottom with a ratio of 12.6, signalling severely unaffordable conditions. And, when comparing this ratio over the past five years, Greater Vancouver has seen the fourth greatest deterioration in housing affordability among the 15 metro regions for which we have data. It also earns a C on this new measure.

Greater Vancouver's lone D grade in the social grouping also happens to be another new indicator: public transit railway network length in kilometres. Greater Vancouver performs poorly by this measure, ranking 14th out of 20, despite recent investments in rail including the Canada Line, which comprises 19.2 km of track. Greater Vancouver has 80 km of public transit rail, 12 times below that of leader Sydney.

Special Lens: Regional Coordination and Governance

Scorecard 2016 argued that greater coordination among Greater Vancouver's component municipalities was required to address regional challenges that both transcend municipal boundaries and limit the area's socio-economic performance. While one might think that optimizing regional economic performance would be a sufficient spur to cooperation among Greater Vancouver municipalities, coordinated action remains disappointing.

We suggest such regional fragmentation creates governance and service delivery impediments that hinder Greater Vancouver's economic performance. The area could probably benefit from better intermunicipal collaboration on issues such as:

- housing affordability
- head office attraction
- investment in public transit and roads
- land for port and industrial expansion

Such cooperation could also allow Greater Vancouver's municipalities to present a united face to the world, probably increasing the prospects of attracting foreign investment, while decreasing duplication of effort among them. This strategy appears increasingly important as globalization brings greater competition for investment.

At the same time, global competition to attract highly skilled workers continues to intensify, in line with technology's growing role in the economy. As areas vie for skilled workers, the rich seem to be getting richer. It seems metro regions that already boast large pools of skilled workers (often created by proximate post-secondary institutions) and that have a proven ability to attract highly skilled migrants are also able to attract investment. These regions subsequently attract more high-skilled individuals, and a virtuous cycle is created.

Accordingly, this scorecard's "special lens" focuses on regional coordination and governance. By examining relevant literature and other areas' experience, we identify various motivations and models for regional cooperation and coordination of service delivery.

Special lens findings include:

- Rapid growth in large urban areas (abetted by automobile transportation) has led to urban sprawl, increasing municipal service delivery costs.

- Larger cities in both Canada and the United States are growing quickly by national standards. This is at least partly because these cities benefit from "agglomeration economies," which include better educational access, more job opportunities, advanced health care, and plentiful cultural activities. Such amenities improve businesses' chances of finding qualified workers.

- Immigration reinforces large cities' growth advantages as earlier arrivals attract fresh newcomers of the same ethnicity. Canada's aging population is reducing the natural increase (births minus deaths), and this is amplifying immigration's importance to population growth.

- Larger cities are more likely to produce industry clusters, benefitting both companies and workers.

- Negative aspects of urban sprawl include environmental degradation and higher service delivery costs. Low-density suburbs typically lack the critical mass of users who help make services financially viable.

- Diverging interests among municipal governments typically increase friction and complicate service coordination across jurisdictions.

- There is a frequent mismatch between individuals' "taxable" location and their "benefit consumption" location, exemplified by suburban commuters' use of amenities in the urban core of a populous region.

- Canadian municipal governments usually face difficult fiscal and political constraints. The Conference Board has long recommended that cities be granted additional fiscal tools that more closely match their responsibilities.

This scorecard assesses three service provision models: centralization by amalgamation, private outsourcing, and intermunicipal cooperation. Past amalgamation efforts do not appear to have enjoyed undivided success (due to upward harmonization of service quality and employee remuneration, failure to achieve scale economies, and lack of competition). Case studies of Montréal and Toronto attest to this. Outsourcing can save money if there is healthy competition in bidding for contracts, if solid oversight is present, and if the municipality retains ownership of its assets (although resulting services may not meet citizens' quality expectations). Municipal cooperation can offer both local autonomy and regional vision, but cross-jurisdictional competition limits its Canadian use. Other common issues with the municipal cooperation paradigm include more red tape, intermunicipal buck-passing, and significant transaction costs.

The Greater Vancouver region's governance framework includes two regional bodies: Metro Vancouver and TransLink:

- Metro Vancouver's core services are drinking water, wastewater treatment, and solid waste management. Metro Vancouver also regulates air quality, plans urban growth, manages regional parks, and provides affordable housing. It has nine departments and close to 1,500 employees.

- TransLink is responsible for various modes of transportation in Metro Vancouver, including bus, rail, and a subset of the region's roads and bridges.

- Metro Vancouver has been critiqued for several governance shortcomings, including a board that is not directly elected by the region's voters and a lack of timeliness. Disputes between the body's component municipalities, particularly over land use planning, frequently bog it down.

- TransLink has been criticized for the challenges inherent in its bifurcated governance model, with key decisions divided between a board of directors and a mayors' council. Since 2017, the two bodies have worked by means of joint committees, improving coordination and decision-making. One result is the recent approval of a plan to fund the regional share for Phase 2 of the 10-year vision for regional transportation.

Despite the presence of these two regional bodies, the approach to regional issues like transportation, policing, economic development, and land use planning remain somewhat fragmented:

- Our two benchmarking indicators of Greater Vancouver's transportation system yielded mediocre results—middle-of-the-pack performances on both average travel time to work and the proportion of commuters using non-car means—which can be at least partly attributed to the fact that roads and bridges are owned, funded, and managed by different jurisdictions; the relative youth of the transportation system and the fact it needs but has not been allocated greater funding; the fact that Greater Vancouver lacks density and was almost entirely built with cars in mind; and the fact that a large number of city governments make regional infrastructure harder to plan, finance, and implement. On a positive note, public transit use has been increasing, according to the 2016 Census. Among the country's three largest CMAs, Vancouver had the largest growth in the proportion of public transit commuters from 1996 to 2016.

- The most common intermunicipal agreements elsewhere in Canada include fire and police services, because these services need to be immediately available and the problems they address ignore municipal boundaries. For instance, improved regional policing cooperation in the Lower Mainland might have at least partially thwarted serial killer Robert Pickton.

- There are at least 10 economic development agencies among the 23 municipalities that make up Metro Vancouver. This undoubtedly fosters duplication of effort and interjurisdictional competition. We suggest that a regional and united approach to economic development would be a better approach to attracting both foreign and domestic investment.

- Land use planning is arguably the most contentious puzzle facing all fast-growing municipalities. It is certainly a challenge in Greater Vancouver. Local symptoms of problems with land use planning include very poor housing affordability and a shortage of industrial land. Improved intercity coordination of municipal permitting and sharing of best practices would help increase housing supply more rapidly and efficiently, helping to at least solve part of the affordability problem. Despite the need for greater housing supply, land must be also set aside for industrial

expansion, so as to provide jobs for local workers. Determining the correct balance between residential and industrial land use requires intermunicipal cooperation.

We also quantitatively assess Greater Vancouver's governance framework, comparing it against seven other metropolitan areas. Greater Vancouver comes in second with a decent B grade. (We acknowledge that comparisons are difficult because municipal servicing success can often be evaluated only on a case-by-case basis and service delivery often spills over a metropolitan area's boundaries, rendering a service's cost and coverage difficult to quantify.)

Despite Greater Vancouver's regional issues, the quantitative analysis suggests that some of the ingredients are in place to enable it to improve its governance performance. Greater Vancouver's fragmented jurisdictional structure is largely offset by a high percentage of women councillors, a large proportion of own-source revenue, and the presence of a regional transit agency.

Still, we see room for improvement and suggest several best practices to guide governance reform, while recognizing that one-size-fits-all solutions do not exist, and so challenges should be addressed on a case-by-case basis. A literature review yielded several best practices:

- A decentralized form of regional governance can address regional issues while maintaining local government autonomy and keeping decision-making close to constituents.
- Voluntary municipal participation maintains flexibility over the structure, sharing, and delegation of service delivery.
- Private sector outsourcing and private-public partnerships should be used when there is sufficient competition among potential service delivery contractors to generate cost savings and efficiency.
- Higher levels of government should act to support and augment collaboration and cooperation between municipalities.

Although two regional bodies currently represent Greater Vancouver—Metro Vancouver and TransLink—even greater intermunicipal cooperation is warranted, since local fragmentation continues to exacerbate many of Greater Vancouver's most pressing issues. If attempts are made to reform governance structures and practices within and between Greater Vancouver institutions, The Conference Board of Canada recommends that they reflect the best practices described above.

1. Introduction

Chapter Summary

- Global trends continue to point to stiff competition for highly skilled workers among countries, regions, and cities.
- This scorecard updates our 2016 benchmarking of Greater Vancouver's relative attractiveness to both these workers and to business investment against 19 other global metro regions.
- A "special lens" discusses regional coordination, governance, and service delivery among Greater Vancouver's component municipalities.

The world finds itself in the throes of a third wave of globalization. The first wave, spanning the late 1800s through World War I, was fostered by inventions like the steam engine, the telegraph, electricity, and the internal combustion engine. The second wave, commencing roughly at the end of World War II and extending through about 1970, was abetted by development of technologies like jet airplanes, television, communications satellites, and container traffic. The current wave features innovations like the microprocessor, the Internet, and mobile telephones, with more to come. Combined with ongoing efforts to reduce international trade barriers, such developments have facilitated firms' adoption of global value chains. This has increased international competition to achieve the highest value at the lowest sustainable cost.

Emergence of information technology has put a premium on skilled "knowledge" workers who are comfortable producing, distributing, and using associated tools and concepts. All ambitious cities want to attract these people.

Population aging in many developed countries is further motivating various jurisdictions' talent search as experienced workers retire. Canada is no exception; The Conference Board of Canada estimates that between 2000 and 2017 Canada's population aged 50–64, largely made up of people either retired or close, to it grew more than four times as fast as those aged 15–29 who are potential or recent labour force entrants. Between 2018 and 2030, we expect the 15–29 cohort to shrink by nearly 6 per cent and the number of retirees aged at least 65 to rise by 46 per cent. The future prosperity of cities is thus highly dependant on offering both attractive career opportunities and a high quality of life. These factors will also be important to lure business investment, as the availability of skilled labour is a primary concern of firms making location decisions.

Meanwhile, Canada's trading patterns are also shifting away from a traditional reliance on the United States in favour of commerce with Asian partners. Current difficulties surrounding negotiations on the North American Free Trade Agreement may well necessitate the acceleration of this trend. While geographic proximity and economic heft will probably maintain America's current status as Canada's largest trading partner, Asia has claimed second place on this list, surpassing Europe in 2010. Asia's robust appetite for Canadian natural resources has largely underpinned this growth.

With population aging a fact of life and clouding potential economic growth in many developed countries, it makes sense for Canada to continue to explore commercial opportunities everywhere, not just the United States. Asia, with its huge populations and rising wealth will be a prime Canadian trade target. Thus, while the Trans-Pacific Partnership (TPP) trade deal suffered a setback when the U.S. administration withdrew that country from the agreement, it is encouraging that Canada and the 10 remaining countries of the TPP concluded discussions and finalized the text of an agreement (now dubbed the Comprehensive and Progressive Agreement for Trans-Pacific Partnership) in January. This should facilitate removal of regional trade barriers and strengthen Canada's trade relationship with the region.

Greater Vancouver is well positioned to benefit from an increased Asian focus. Greater Vancouver's close relationship with Asia is an important factor underpinning its recently robust economy—between 2013 and 2017 we estimate growth in Greater Vancouver's real (inflation-adjusted) GDP per capita was more than double the national average. Vancouver's fortuitous West Coast location and its numerous truck and rail routes to the North American interior make it a prime entrepot for trading with the U.S., the Pacific Rim, and elsewhere. Indeed, the Port of Vancouver has a geographic advantage over other large North American ports to Asia. Similarly, Vancouver International Airport is the closest large North American airport to Asia, and no other airport on the continent offers more direct flights to Asian cities.

But Greater Vancouver needs customers, workers, and investment to take advantage of its opportunities. So do other cities. Thus, such items are intensely pursued and jealously guarded. Accordingly, metro regions are well advised to discern and compare their strengths and weaknesses with their competitors. Our report does this by benchmarking various Greater Vancouver economic and social yardsticks against a field of selected international metropolitan challengers.

This benchmarking analysis employs 38 internationally comparable indicators for Greater Vancouver and 19 other global metro areas. Given the importance of the transportation sector to Greater Vancouver's economy, the regions selected for comparison, aside from Calgary, are also well-known transportation gateways. In addition, six of the 38 measures assess relative performance at local seaports and airports. They, along with 16 other indicators, are grouped into an "economy" category that assesses general economic performance, while the 16 remaining measures are grouped into a "social" category that assesses livability.

The report closes with an in-depth analysis of regional coordination and governance issues affecting Greater Vancouver and its constituent municipalities, a concern that was highlighted in the previous scorecard report as holding back Greater Vancouver from reaching its full potential. The presence of a sound municipal framework and good policy-making can allow disparate local governments to work together like a well-oiled machine, engage external parties confidently, and enhance an area's international competitiveness. The absence of such attributes can complicate service coordination across jurisdictions, potentially confusing firms and individuals and increasing the costs facing them. We find Greater Vancouver to have a mix of successes and areas needing improvement on this file. None of the area's potential hurdles is insurmountable, however, and Greater Vancouver can realistically hope for at least some progress on each.

2. Defining Greater Vancouver and Its Comparators

Chapter Summary

- The geographical unit of analysis in this scorecard is the metropolitan area.
- The Vancouver census metropolitan area, referred to as Greater Vancouver in this scorecard, includes 39 census subdivisions, with the City of Vancouver at its core.
- Given the strategic importance of transportation to Vancouver's economy, 18 of the 19 comparator regions were selected, in part, because they are also major transportation gateways.

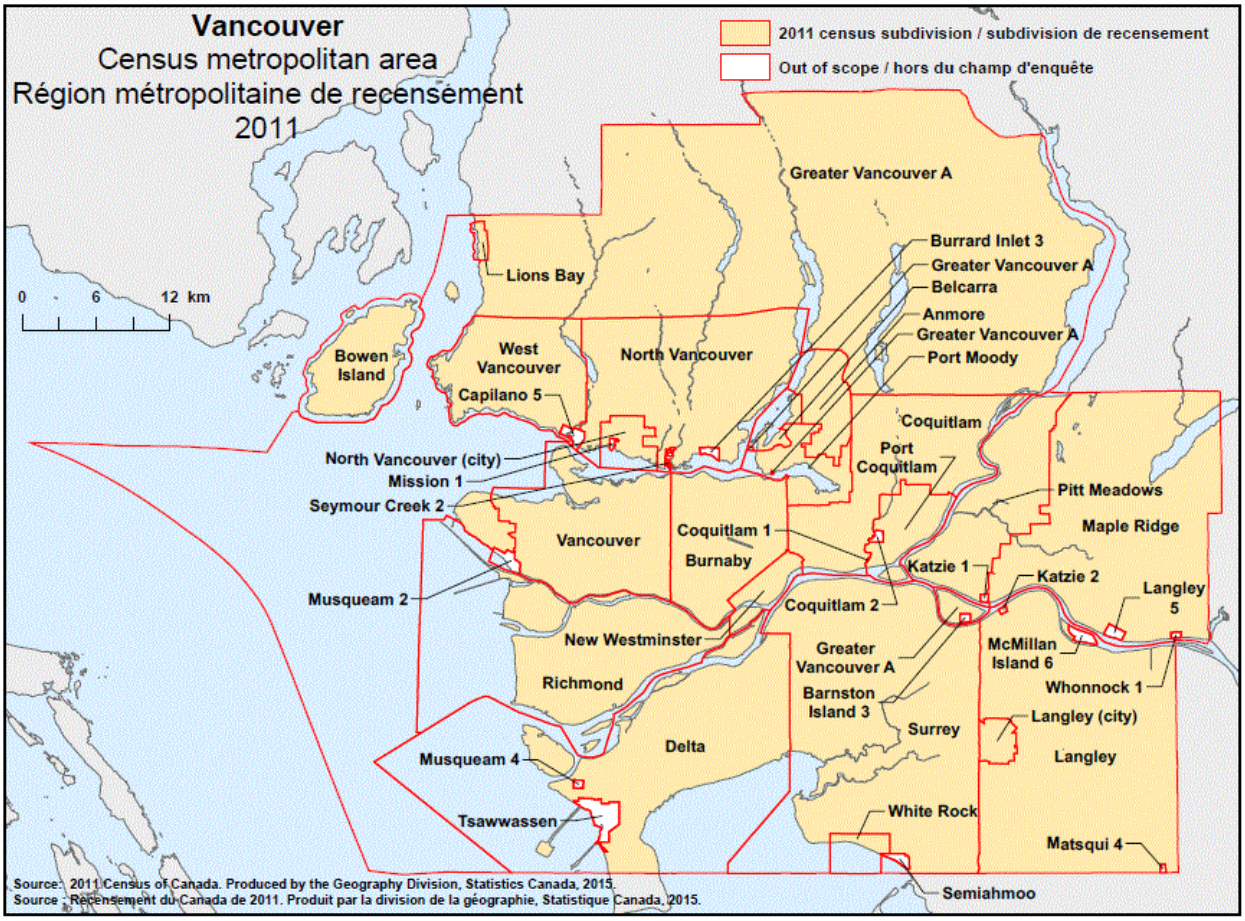
Except where explicitly stated otherwise, the geographical unit of analysis in this scorecard is the metropolitan area, known as a census metropolitan area (CMA) in Canada, metropolitan statistical area (MSA) in the United States, and functional urban areas (FUA) in Europe. Data for this scorecard's Asian comparators are also measured at the metropolitan-area level.

A census metropolitan area is formed by one or more adjacent municipalities centred on a population centre (known as the core). A CMA must have a total population of at least 100,000 of which 50,000 or more must live in the core. To be included in the CMA, other adjacent municipalities must have a high degree of integration with the core, as measured by commuting flows derived from the latest census data. MSAs and FUAs are defined in very similar ways.

The Vancouver CMA includes 39 census subdivisions (see Table 1), with the City of Vancouver at its core, that cover a land area of 2,882.55 square kilometres. According to the 2016 Census, the population of the Vancouver CMA was 2,463,431, a 6.5 per cent increase from the 2011 Census. Close to 631,500 people, or about one-quarter of the CMA's population, live in the core. Besides the City of Vancouver, other large population centres in the CMA include Surrey, Burnaby, Richmond, Coquitlam, Langley, and Delta. The map in Exhibit 1 provides a visual representation of the Vancouver CMA.

Exhibit 1

Map of Vancouver Census Metropolitan Area



Note: This map shows the 2011 Census boundaries, but the 2016 Census boundaries are identical.
Source: Statistics Canada.

Table 1

Greater Vancouver's Census Subdivisions

Census subdivision name	Population, 2016
1. Vancouver	631,486
2. Surrey	517,887
3. Burnaby	232,755
4. Richmond	198,309
5. Coquitlam	139,284
6. Langley, district municipality	117,285
7. Delta	102,238
8. North Vancouver, district municipality	85,935
9. Maple Ridge	82,256
10. New Westminster	70,996
11. Port Coquitlam	58,612
12. North Vancouver, city of	52,898
13. West Vancouver	42,473
14. Port Moody	33,551
15. Langley, city of	25,888
16. White Rock	19,952
17. Pitt Meadows	18,573
18. Greater Vancouver A (electoral area)	16,133
19. Bowen Island	3,680
20. Anmore	2,210
21. Lions Bay	1,334
22. Belcarra	643
Indian reserves	
23. Capilano 5	2,931
24. Burrard Inlet 3	1,855
25. Musqueam 2	1,652
26. Tsawwassen	816
27. Mission 1	576
28. Matsqui 4	471
29. Katzie 1	262
30. Seymour Creek 2	123
31. Semiahmoo	120
32. McMillan Island 6	94
33. Coquitlam 1	54
34. Barnston Island 3	49
35. Katzie 2	40
36. Musqueam 4	10
37. Coquitlam 2	0
38. Langley 5	0
39. Whonnock 1	0

Source: Statistics Canada, 2016 Census.

In this scorecard, whenever we use the terms "Greater Vancouver" or the "region of Vancouver," we are referring to the Vancouver CMA. In the few cases where we cite secondary sources that report data based on Greater Vancouver Regional District (GVRD) boundaries, we use the term "Metro Vancouver." However, it should be noted that the CMA and GVRD boundaries are nearly identical. Finally, to further reduce confusion, whenever we refer to the City of Vancouver and not the wider metro area, we explicitly use the term "City of Vancouver."

The report features data on 20 metropolitan regions, including Greater Vancouver. Given the strategic importance of transportation to Vancouver's economy, 18 of the 19 comparator regions were selected, in part, because they are also major transportation gateways. Calgary, the lone metro region without an outsized transportation sector, is included in the rankings because its relative proximity to Vancouver makes it a key competitive measuring stick. The report's regions and their 2016 populations are reported in Table 2.

Table 2
Population of Comparator Metro Areas, 2016

Metropolitan area	Population
Seoul	25,590,465
Shanghai	24,153,000
Los Angeles	13,310,447
Hong Kong	7,377,100
Houston	6,772,470
Toronto	6,242,273
Miami	6,066,387
Singapore	5,607,283
Barcelona	5,421,901
Sydney	5,029,768
San Francisco	4,679,166
Montréal	4,093,767
Seattle	3,798,902
Manchester	2,782,000
Greater Vancouver	**2,548,740**
Portland	2,424,955
Copenhagen	1,789,174
Calgary	1,469,341
Rotterdam	1,432,000
Halifax	425,871

3. Greater Vancouver Scorecard: Schoolhouse Scoring for Benchmarking

Chapter Summary

- Report card rankings of A–B–C–D are used to assess each metro area's performance in each of the two categories (economy and social) and on each of the 38 indicators.
- Obvious outliers were removed when computing the rankings for each indicator and for each category.
- The overall ranking is calculated as an average of the economy and social category scores.

The Greater Vancouver Scorecard is based on 38 indicators grouped into two categories: economy and social. There are six new indicators this year: one in economy and five in social. Our goal was to add more social indicators than economy ones to achieve a better balance between the two categories. This report features 22 economy indicators and 16 social ones.

The economy category measures local economic performance and business environment, while the social category captures some of the social and environmental complexities that distinguish a great metro region from a mediocre one.

This study uses a report card–style ranking of A–B–C–D to assess the performance of metropolitan areas for each indicator. We assigned a letter grade using the following method: for each indicator, we calculated the difference between the top and bottom performer and divided this figure by four. A metropolitan area received a scorecard ranking of A on a given indicator if its score was in the top quartile, a B if its score was in the second quartile, a C if its score was in the third quartile, and a D if its score was in the bottom quartile. A metropolitan area was assigned an "n.a." if the data were unavailable for that indicator.

Each indicator was also carefully screened for outliers. In a handful of cases, one metro region scored so well that it left nearly every other metro area with a C or D grade. Conversely, some scores were so poor that they left nearly every other metro area with an A or B grade. In these rare cases, influential observations were eliminated using the following method: (1) the outlier was given a letter grade (an A or a D depending on whether it negatively or positively influenced the grades); (2) the top and bottom performers were identified among the remaining metro regions, and the scoring method described above was applied.

The overall category rankings are formulated as an average of the individual indicators. No attempt was made to give explicit weights to indicators according to importance: we are implicitly giving equal weight to each indicator. We assigned a grade level to the overall category performance using the same method described above.

The overall ranking is calculated as an average of the economy and social category scores. For a more detailed description of the benchmarking methodology, please see Appendix 2.

4. The Big Picture: Singapore Is First

Chapter Summary

- Singapore retains its position as the top-performing metro area, finishing first in the economy rankings and 12th in the social tabulation.
- Calgary, Seattle, San Francisco, and Copenhagen round out the top five.
- Greater Vancouver places seventh, up from ninth in the 2016 report.
- Shanghai, Rotterdam, and Miami rank at the bottom. This is Miami's second consecutive last place finish.

Table 3
Overall Ranking

Ranking 2018 (2016)		Metro Area
1	(1)	Singapore
2	(4)	Calgary
3	(5)	Seattle
4	(8)	San Francisco
5	(2)	Copenhagen
6	(10)	Toronto
7	**(9)**	**Greater Vancouver**
8	(17)	Manchester
9	(12)	Seoul
10	(14)	Montréal
11	(7)	Sydney
12	(3)	Hong Kong
13	(19)	Los Angeles
14	(16)	Halifax
15	(11)	Portland
16	(15)	Houston
17	(6)	Barcelona
18	(18)	Shanghai
19	(13)	Rotterdam
20	(20)	Miami

There has been some reshuffling of the overall rankings since our last report. These result from a mixture of changes in the original indicators, along with the addition of one new economy measure and five new social measures. The largest change was an 11-point drop for Barcelona, which ranked sixth overall in 2016 but only 17th this year. By contrast, top-ranked Singapore, 18th-ranked Shanghai, and 20th-ranked Miami maintained their positions. Four regions (Calgary, Seattle, Greater Vancouver, and Halifax) saw only a two-position shift in their ordering. Greater Vancouver moved up two positions from ninth to seventh.

Singapore maintains its position as the scorecard's overall leader, buoyed by a first-place finish in the economy category. Calgary takes second place, up from fourth in the 2016 report, and maintains its status as Canada's best overall performer. Seattle ranks third, up slightly from a fifth-place finish in Scorecard 2016. San Francisco and Copenhagen round out the top five. Below we summarize Scorecard 2018's overall results, focusing on the top five performers along with Greater Vancouver, the focus of this scorecard.

Singapore, the Lion City, situated on Asia's strategic Strait of Malacca, retains its first-place ranking, both overall and in the economy category. Its economy ranking is buoyed by the A grades it receives for its unemployment rate (which is top ranked and significantly lower than that of second-place Hong Kong) and the two measures of its port activity (it is among the world's busiest harbours). These were sufficient to overcome Singapore's two D grades for its after-tax income per capita growth and its market size. The city-state did suffer erosion in some of its economic indicators, notably from an A grade to a C grade in its real gross domestic product (GDP) per capita growth. It also declined from a B to a C in its productivity growth, from A to B in its employment growth, its number of international visitors, and the number of international association meeting participants, and from B to C in its high-tech employment share and its office rents. Singapore retained its B social grade between our two reports. It was awarded A grades for its low homicide rate (where its is top ranked), the proportion of its workforce who commute by non-car means, its housing affordability, and the change in its housing affordability. These were offset by D grades for the proportion of its 25-plus population with at least a bachelor's degree and the relative shortness of its light-rail network. Singapore's overall stability (in terms of its grades) in the social category reflected limited change in our indicators between 2016 and 2018. The city-state slipped from B to C in its air pollution measure, but improved its grade from D to C in the proportion of its population aged 25–34.

Calgary, Canada's oil hub, improved its position to second place from fourth in our last report. This is due to a significant improvement in its social ranking; it is now top ranked and graded A compared with an 11th-place finish and B grade in 2016. This more than outweighed a three-position slippage from fourth to eighth in its economy ranking. The social improvement was underpinned by gains in several categories: from D to A in the proportion of its population aged 25–34, from C to B in the proportion of its 25-plus population with at least a bachelor's degree, and from C to B in its average commute times and its income distribution. It was also awarded an A in three of this year's additional social indicators: its female workforce participation rate (it was ranked first overall here), the change in its housing affordability, and its democracy index. These join A grades for its good housing affordability and air quality. Unfortunately, Calgary was rated D for the share of its working population that commutes by non-car means and for its relatively short light-rail system. A catalyst for Calgary's economy downgrade was the large B to D drop in its unemployment rate score, the product of a collapsing oil price. Other eroding factors included an A to B drop in its real GDP per capita, its marginal effective tax rate on capital investment, and its employment growth, along with a fall from C to D in recent years' GDP growth. It also slid from B to C in its per capita after-tax income. Still, Calgary rated As for its productivity, its total tax index, and its office rents. Less positive were Calgary's nine D scores: for real GDP per capita growth, its unemployment rate, its high-tech employment share, its venture capital

investment, its market size, its international visitors, the number of participants in international association meetings, its inbound airport cargo tonnage, and the number of destinations its airport serves.

Seattle, the largest metro area in the U.S. Pacific Northwest, jumped from a fifth-place ranking in 2016 to a third-place finish in 2018. This is due to a three-position jump in its social score, while maintaining its fifth spot and A grade in the economy ranking. Increases from B to A in its venture capital investment (despite a drop in value), from D to B in its marginal effective tax rate on capital investment, and from D to C in the number of its cruise vessel calls offset drops from an A to a B in the share high-tech jobs making up total employment and in its office rents and a C to D in both its total tax index and the number of participants in international association meetings. Although Seattle's share of high-tech jobs increased from Scorecard 2016 to Scorecard 2018, top-ranked San Francisco's share increased at an even greater rate, pushing Seattle's grade lower on this indicator. All told, Seattle gets four As in the economy grouping: real GDP per capita, after-tax income per capita, productivity, and venture capital investment. On the other hand, its economy earns four D scores: on the total tax index, on market size, and on the two port indicators. Upward movement among Seattle's social indicators underpins the positive change in Seattle's cumulative ranking; three social components shifted, and all were gains. The proportion of the population aged 25 to 34 rose substantially, rating an improvement from a C to an A, and the average travel time to work improved from a C to a B. At the same time, the rating given to Seattle's homicide rate improved from an B to an A. In sum, Seattle gets five As in the social realm: its 25–34-year-old population share, its homicide rate, its relatively good housing affordability, its low air pollution, and its democracy index. Seattle gets only two social D grades: for the share of its commuters who get to work using public transit and for the relatively short length of its light-rail network.

San Francisco, another U.S. metropolitan area with a renowned high-tech sector, rose four spots from Scorecard 2016 to finish fourth in our overall rankings in 2018. This was due to a four-position increase in its economy ranking from eighth to fourth, and a similarly sized jump to sixth place in its social ranking. San Francisco's relative economy performance improved in several categories: from B to A in employment growth, from D to B in the marginal effective tax rate on capital investment, and from D to C in real GDP per capita growth, after-tax income per capita growth, and inbound airport cargo tonnage. These improvements offset drops from B to D in office rents and from C to D in international visitors and in the number of participants in international association meetings. All in all, San Francisco earns A grades in six economic indicators: real GDP per capita, after-tax income per capita, productivity, employment growth, high-tech employment share, and venture capital investment. However, the metro area's ranking is pulled down by nine D scores (productivity growth, office rents, market size, international visitors, number of participants in international association meetings, total tax index, number of cruise vessel calls, and the two port indicators). The region's higher social ranking is the result of some improvements (and no downgrades) in its underlying indicators. For instance, the proportion of its population aged 25–34 jumped from a C in 2016 to an A in 2018. Its commuting times managed to improve from a D in the 2016 scorecard to a C in this scorecard even though commuting times increased. Grade improvements were also made in its proportion of non-car commuters and its housing

affordability. The area was also awarded an A grade in one of the five newly introduced social indicators, the democracy index. All in all, San Francisco earns six A grades in the social category.

Copenhagen, Denmark's capital, is ranked fifth in this year's evaluation, down slightly from second place in Scorecard 2016, as a jump in the economy category was more than offset by a drop in the social grouping. Indeed, Copenhagen sits in second place with an A grade in the economy rankings this year, up from sixth place and a B grade in the previous report. Movement from a D grade to C in the area's real GDP per capita growth and from a C to a B in its productivity growth more than offset a drop from B to C in its high-tech employment share. Copenhagen got A grades this time for its office rents, its number of participants in international association meetings, its inbound airport seats per capita, and its marginal effective tax rate on capital investment. These outweighed the D grades for its international visitors and its two port-related indicators. Unfortunately, the metro area's social score took a nosedive, falling from second and an A grade in the previous report to ninth and B grade this year. Copenhagen's social grade was pulled down by low scores on new social indicators: a D for its age dependency ratio and Cs for its female workforce participation rate and the relatively short length of its light-rail network. Its performance deteriorated in many indicators, including its proportion of people employed in cultural industries (falling from A to B). Copenhagen's grade for the proportion of its population aged 25–34 also fell, from B to C. However, this indicator is not directly comparable to the one used in the 2016 scorecard because the geographical boundary has changed: in the previous report, the data used for the indicator were available at the city level; in this scorecard, the data are for the metro area.

Greater Vancouver, the subject of this report, finishes in seventh place, up from ninth in the 2016 scorecard. Greater Vancouver moved up two places, from ninth to seventh, in the economy category, but dropped one position in the social category. Greater Vancouver's social performance was pulled down by a lower grade on the comfortable climate index and a D grade on light-rail track length, one of the five new social indicators. These more than outweighed increases from a C to a B in Greater Vancouver's average commute time and income distribution (Gini coefficient), increases from D to C in its housing affordability, and an A grade on the democracy index, another new social indicator. Greater Vancouver's grade improvement on housing affordability comes despite a deterioration in the ratio of its median house price to median household income. Its grade improved only because last-place Hong Kong suffered an even bigger decline in affordability. Overall, Greater Vancouver was rated A on four social indicators: the proportion of the population that is foreign born, homicide rate, air pollution, and democracy index. In the economy category, Greater Vancouver drops from a C to a D grade for its after-tax income per capita (despite a rise in value), marginal effective tax rate on capital investment, number of international visitors (despite a rise in value), and number of participants in international association meetings, and downgrades from B to C for its employment growth (despite a rise in value). But these drops were offset by rises from a C to a B grade for both its unemployment rate and its venture capital investment. Overall, the area's economy received two A grades, one for its office rents, the other for its total tax index. These were, however, accompanied by five D grades: after-tax income per capita, market size, the marginal effective tax rate on capital investment, the number of international visitors, and the number of participants in international association meetings.

Toronto ranks one spot ahead of Greater Vancouver in sixth place, a reversal of fortune from Scorecard 2016, when Toronto finished one position below Greater Vancouver. **Manchester**, **Seoul**, and **Montréal** round out the top 10. Manchester made a huge leap from the previous report's 17th-place ranking, as a six-position rise in the economy rankings more than offset a three-position drop in the social category.

Sydney and **Hong Kong** finish 11th and 12th, respectively. Sydney fell four spots in our overall rankings in 2018 compared with the previous benchmarking analysis. This decrease was due to a seven-position plunge in the economy ranking, from 11th to 18th, and to a two-position drop in the social category. Hong Kong's position in the overall rankings also deteriorated sharply, falling from third to 12th place. This downfall is entirely due to a sharp six-position drop in the social rankings, as Hong Kong's standing in the economy category barely changed.

Los Angeles makes an appearance in 13th place, up from 19th place in Scorecard 2016. The metro area gained ground in both categories, jumping from 18th to 10th place in the economy rankings and from 17th to 15th place in the social group. **Halifax** is the lowest-ranked Canadian metro area, with a 14th-place finish, up from 16th place in the previous report. **Portland**'s 15th overall ranking slots it four positions below its performance in the 2016 report.

Finally, the five bottom-ranked metro areas feature two U.S. metro regions (**Houston** and **Miami**), two European regions (**Barcelona** and **Rotterdam**), and **Shanghai**. Only Miami and Shanghai appeared in the bottom quartile of the rankings in Scorecard 2016. Barcelona's headline position took a steep plunge, as it lost altitude in both the categories, falling from 15th to 17th in the economy category and from 1st to 13th in the social category. No other metro area was hurt more by the new indicators in the social category than Barcelona, as it was handed three D grades for its age dependency ratio, female workforce participation rate, and public transit track length. Houston's 16th-place ranking, one position lower than in the previous report, stems from a D grade in the social category, offsetting a B on the economy side. Meanwhile, the story has barely changed for Shanghai. It comes in 18th place overall, the same ranking as in the previous report, as a last-place finish in the social category more than offset an A grade in the economy grouping. Rotterdam, ranking second from the bottom, unsurprisingly gets mediocre results in both the economy and social categories. Last-place Miami is pulled down by a D grade in the social category and a low C grade on the economy side.

5. Economy

Chapter Summary

- Asian areas (Singapore, Hong Kong, and Shanghai) and North American regions (San Francisco and Seattle) dominate the top of the economy rankings. Europe's Copenhagen comes in second.
- Greater Vancouver places seventh, up two spots from Scorecard 2016, and maintains its B grade.
- Greater Vancouver's best performance is in KPMG's total tax index, but recent U.S. tax cuts suggest that Greater Vancouver's relative position in this index, along with that of all other Canadian metro areas, will take a hit unless federal and provincial governments respond with their own tax reform measures.
- Other areas of strength include comparatively modest office rents and high port cargo tonnage relative to GDP.
- Current areas of concern for Greater Vancouver include weak per capita after-tax incomes, a relatively small market size, relatively few international visitors, and a comparatively low number of participants in international association meetings.
- Sydney, Portland, and Halifax rank at the bottom, all earning Ds.

Table 4

Economy Rankings and Grades

Ranking 2018 (2016)	CMA	Value	Grade
1 (1)	Singapore	0.538	A
2 (6)	Copenhagen	0.483	A
3 (2)	Hong Kong	0.472	A
4 (8)	San Francisco	0.471	A
5 (5)	Seattle	0.469	A
6 (3)	Shanghai	0.454	A
7 (9)	**Greater Vancouver**	**0.417**	**B**
8 (4)	Calgary	0.417	B
9 (7)	Houston	0.416	B
10 (18)	Los Angeles	0.388	B
11 (13)	Toronto	0.388	B
12 (10)	Seoul	0.384	C
13 (19)	Manchester	0.365	C
14 (12)	Rotterdam	0.357	C
15 (20)	Miami	0.355	C
16 (16)	Montréal	0.341	C
17 (15)	Barcelona	0.323	D
18 (17)	Portland	0.321	D
19 (11)	Sydney	0.320	D
20 (14)	Halifax	0.292	D

The 22 indicators in the economy category assess a broad cross-section of economic performance with the goal of determining each region's relative attractiveness to both business investment and high-skilled workers. (See Table 4.) Of course, workers also base their location decisions on quality of life, which is the subject of the next chapter. Indicators attempting to gauge a metropolitan area's current economic and wealth performance include real gross domestic product (GDP) per capita, after-tax income per capita, labour productivity (real GDP per worker), employment growth and the unemployment rate, high-tech employment, market size, and various indicators of the cost of doing business, including KPMG's total tax index. This compares the total tax burden faced by corporations in each city, including income taxes, capital taxes, sales taxes, property taxes, miscellaneous local business taxes, and statutory labour costs. We also rate the marginal effective tax rate on capital investment. Office rents are another entry in the cost of doing business category.

Six indicators, one new in this year's report, attempt to gauge a metropolitan area's transportation industry performance. Most of the regions selected for this report, including Greater Vancouver, qualify as transportation gateways. Indeed, Greater Vancouver's location on Canada's West Coast, facing the burgeoning Pacific Rim, merely enhances transportation's local importance. Estimates from the Conference Board's Metropolitan Outlook Service suggest that the transportation and warehousing industry directly generated 7.0 per cent of Greater Vancouver's real GDP in 2017, well above the 4.5 per cent national figure. In this context, the six transportation indicators are designed to assess a cross-section of freight and passenger movements.

The economy category includes two indicators of an area's high-tech capacity—venture capital investment per US$1 million of GDP and high-tech employment as a share of total employment—as well as two specific tourism indicators—number of international visitors and number of participants in international association meetings. Tourism activity provides significant economic benefits to the host region, as it boosts consumer spending and generates employment opportunities in a variety of economic sectors, such as accommodation and food services and retail trade. Tourists, through their purchases, also generate tax revenues for the host economy that can be used to fund infrastructure projects and government-provided services.

Data for the key economic indicators are, for the most part, drawn from a base year of 2015 or 2016 to allow for comparability among all metro regions. Where dollar values are used in level terms, they are reported in U.S. dollars using OECD purchasing power parity (PPP) exchange rates.

Three of the six A-graded regions are from Asia—top-ranked Singapore along with third-place Hong Kong and sixth-place Shanghai. Two of the six A areas are North American—San Francisco and Seattle, which rank fourth and fifth, respectively. Europe's Copenhagen, in second place, rounds out the A listers. (See Table 11.)

The group of five B-ranked metro regions starts with Greater Vancouver and includes Calgary, Houston, Los Angeles, and Toronto. Montréal and Miami are among five C-graded cities. Two of the four municipalities graded D, including Halifax, are from North America.

Table 5
Economy Category Indicators

Indicators
Real gross domestic product (GDP) per capita
Real GDP per capita growth
Labour productivity
Labour productivity growth
Disposable income per capita
Disposable income per capita growth
Employment growth
Unemployment rate
Inbound airport cargo tonnage capacity per $1 million of GDP
Port cargo tonnage per $1 million of GDP
High-tech employment (share of total employment)
Total tax index
Marginal effective tax rate on capital investment for businesses
Average downtown office rents
Venture capital investment per $1 million of GDP
Market size
Number of international visitors
Number of participants in international association meetings
Inbound airplane seat capacity per capita
Port container throughput per $1 million of GDP
Number of cruise vessel calls
Number of non-stop flight destinations at major airport

5.1 Who's Best?

This year's economy ranking places two Asian metro areas (Singapore and Hong Kong) and two North American regions (San Francisco and Seattle) in the top five, with Copenhagen rounding out this grouping.

Singapore's retention of its position as the economy category's overall leader is buoyed by A grades on four indicators: the unemployment rate (where it ranks first overall with an astonishing 2.1 per cent rate), its inbound airport cargo tonnage (a third-place showing), its port cargo tonnage (it finishes second here), and its port container throughput (also a second-place showing). Singapore has a strong performance in both port indicators thanks to its port's position as the world's second busiest in 2017. Further strength in the city-state's economy is evidenced by B grades in its real GDP per capita, its productivity, and its employment growth. Its position as an attractive global meeting place and tourism destination is evidenced by the Bs it gets for the number of participants in international association meetings, inbound airport seats per capita, the number of cruise vessel calls, the number of destinations its airport serves, and its number of international visitors. Indeed, while Singapore's 18 million visitors fall well behind Hong Kong's 26.7 million arrivals, they are roughly twice as many as third-place finisher Seoul. Singapore may struggle to keep ahead, though. It gets only Cs for its real GDP per capita growth, its productivity growth, its high-tech employment share, its venture capital investment after-tax income

per capita, and its office rents. These indicators hint at more moderate future activity. Moreover, the metro area's two Ds, for its after-tax income per capita growth and its market size, suggest that it could have trouble attracting growth-enhancing investment in the future. The only data missing for Singapore were its marginal effective tax rate (METR) on capital investment for businesses and its total tax index.

Copenhagen, Denmark's capital and most populous metro area, is ranked second on the strength of four A grades. These start with low office rents and include the number of participants in international association meetings, inbound airport seats per capita, and the METR on capital investment. All point to a place that can be attractive, both for business visitors and for investors. These welcoming attributes are further evidenced by the metro area's four B grades: for productivity growth, market size, inbound airport cargo tonnage, and the number of destinations its airport serves. But Copenhagen faces some challenges too, as it gets only Cs in some important measures of both current and future economic performances. These include both the level and the growth of real GDP per capita, both the level and the growth of its after-tax income per capita, productivity, employment growth, the unemployment rate, and its high-tech employment share. Its port faces some challenges, too. It gets only Ds for its port cargo tonnage and its port container throughput. Its non-business tourism operations seem a little weak, as it gets only a C for the number of its cruise ship calls and a D grade for the number of its international visitors.

Hong Kong, a special administrative region of the People's Republic of China, comes third in our rankings. The area's international orientation is signalled by the A grade (one of four) it gets for its number of international visitors, along with the B grades it gets for the number of participants in international association meetings, inbound airport seats per capita, and the number of destinations its airport serves. These good scores are somewhat offset, however, by the D grade it gets for number of cruise vessel calls. Hong Kong is an important international trading cog. It is top-ranked and gets an A for its inbound airport cargo tonnage, and it gets Bs for its port container throughput (although its non-container traffic is less impressive, garnering only a C). The region's broader economic backdrop is mixed. While it gets As for its productivity growth and its low unemployment rate, and Bs for after-tax income per capita growth and productivity, its real per capita GDP rankings are less impressive, meriting only C grades for both level and growth. It also gets Cs for the level of its after-tax income per capita and its employment growth. Hong Kong's economic future might be murky, as signalled by the D grades it gets in several forward-looking indicators: its high-tech employment share, office rents, venture capital investment, and market size. Data on the METR on capital investment and total tax index were not available for Hong Kong.

San Francisco is our fourth-ranked metro region, a notable improvement from Scorecard 2016, when it placed eighth. Its economic performance is buoyed by first-place finishes on four indicators: real GDP per capita, after-tax income per capita, high-tech employment share, and venture capital investment per $1 million GDP. The area also ranks high on productivity and employment growth, coming in second place, and gets Bs for its unemployment rate and for its METR. Still, there are disappointments, including D grades for the city's negative productivity growth, tax environment (as measured by the total tax index), market size, and office rents. San Francisco's performance on transportation indicators is mixed. While its inbound airport seats per capita and the number of destinations served by its airport are B

rated, the area earns Ds for its port container throughput and its port cargo tonnage. Also, San Francisco's inbound airport cargo tonnage is modest at best, meriting a C grade. San Francisco also faces some challenges on the tourism front, earning D grades for its international visitors, its number of participants in international association meetings, and its number of cruise vessel calls.

Seattle ranks fifth, maintaining the same position as in Scorecard 2016. Our assessment of Seattle starts with two A grades in each of which it ranks second: after-tax income per capita and venture capital investment. Seattle also achieves high marks on its real GDP per capita, where it ranks third, and on its productivity, were it places fourth. Its economic strength is further demonstrated by the B grades it merits for its employment growth, its high-tech employment share, its office rents, its METR, and its unemployment rate. A less positive light is shone on its economy by the D scores it earns for its market size and its tax environment (total tax index). It also gets soft C scores for its real GDP per capita growth, its after-tax income per capita growth, and its productivity growth. Seattle's performance on transportation indicators is disappointing: it gets Cs for its inbound airport cargo tonnage and the number of destinations served by its airport and Ds for its port cargo tonnage and its port container throughput. Seattle does not seem to attract many business or leisure travellers either. It earns a C for its number of cruise vessel calls and a D for its number of participants in international associations. On a positive note, the region earns a B for its inbound airport seats per capita. Data on international visitors were not available for Seattle.

5.2 Focus on Greater Vancouver's Economy

Greater Vancouver's seventh-place finish in this category, although up two spots from Scorecard 2016, is once again a testament to the region's middle-of-the-pack economic performance. Its normalized score dropped from 0.430 in Scorecard 2016 to 0.417 in this year's benchmarking assessment. Greater Vancouver is also closer to moving down the leaderboard than moving up, with both Calgary and Houston nipping at its heels.

Table 6
Greater Vancouver's Economy Performance

	Grade		Ranking	
Indicator	**2018**	**2016**	**2018**	**2016**
KPMG's total tax index	A	A	4/14	3/12
Office rents (US$ per square foot)	A	A	6/18	5/17
Unemployment rate	B	C	6/20	10/20
Port cargo tonnage per $1 million of GDP	B	B	3/19	3/19
Venture capital investment per $1 million of GDP	B	C	3/14	4/11
Labour productivity growth	B	B	4/20	7/20
Inbound airport seat capacity per capita	B	C	8/20	10/20
Real GDP per capita growth	C	C	4/20	7/20
Port container traffic (TEUs) per $1 million GDP	C	C	5/19	5/19
Inbound airport cargo tonnage capacity	C	C	8/20	9/20
High-tech employment share	C	C	8/20	9/19
Number of cruise vessel calls	C	C	9/18	7/18
Employment growth	C	B	13/20	12/20
Labour productivity	C	C	13/20	12/20
Real GDP per capita	C	C	13/20	14/20
No. of flight destinations at major airport	C	-	14/20	-
After-tax income growth	C	C	14/20	8/19
No. of participants at int'l association meetings	D	C	9/20	8/19
International visitors	D	C	12/18	11/18
After-tax income per capita	D	C	12/20	13/20
Market size	D	D	16/20	16/20
METR on capital investment for businesses	D	C	17/17	10/17

The 22 indicators that make up the economy category paint a picture of a region that has some definite strengths but also some key weaknesses. Greater Vancouver boasts healthy port activity and relatively affordable office rents, but suffers from low levels of real GDP per capita, labour productivity, and after-tax incomes—three interrelated indicators. Despite a seventh-place finish, Greater Vancouver's most common grade among the indicators grouped in this category is a C. Indeed, 10 out of 22 indicators receive a C grade, while just two receive A grades, five earn B grades, and five garner D grades. Table 6 summarizes the results for Greater Vancouver on each indicator, ordered from highest ranking to lowest.

Greater Vancouver's highest ranking in any one economy indicator, and one of its two A grades, is KPMG's total tax index, where it places fourth in a group of 14 metro areas for which we have data. This index measures the total taxes paid by similar corporations in a location and industry, benchmarked against the total taxes paid by similar corporations across the United States. Greater Vancouver's high marks on this indicator are a result of its lower statutory labour costs (payroll-based taxes) relative to its U.S. comparators. However, this indicator has yet to be updated to reflect the fact that the U.S. Congress passed the biggest tax overhaul in decades late last year. The package of reforms, among other things, drastically lowered business taxes, cutting the corporate tax rate from 35 per cent to 21 per cent as of January 1, 2018. Unfortunately, we do not know how much the tax index will change based on the U.S. tax reform measures. At the same time, this indicator obviously does not reflect a new payroll tax set to be introduced in B.C. on January 1, 2019. This suggests that Greater Vancouver's relative position in this index will likely take a hit in subsequent editions of the scorecard unless other tax reform measures are introduced in the meantime.

On the other hand, we already know how much the marginal effective tax rate on capital investment—this scorecard's other tax indicator—has changed based on the new U.S. tax regime. The U.S. METR on capital investment, federal and state combined, now stands at 18.8 per cent, down sharply from 34.6 per cent prior to the tax overhaul.[1] This adjustment significantly improved the rankings for all the U.S. metro areas and, as a result, pushed Greater Vancouver all the way down to last place, leaving it with a D grade on this indicator. Its METR is now nearly 9 percentage points higher than its U.S. counterparts, putting it a significant competitive disadvantage.

But the U.S. tax overhaul is not the only reason why Greater Vancouver performs more poorly on the METR than on the KPMG total tax index. The METR measures the proportion of the rate of return from a new investment that is required to pay corporate income taxes, sales taxes on capital purchases, and other capital-related taxes, such as financial-transaction taxes and asset-based taxes. In other words, the METR on capital investment tells us how competitive a region is in attracting capital investment. Everything else being equal, a lower METR will result in a higher return for businesses. Payroll taxes, which are higher in the United States than in Canada, are included in KPMG's index but not in the METR since they raise the cost of labour and not the cost of capital. No matter the reason, Greater Vancouver's poor showing on the METR on capital investment can be traced directly to British Columbia's decision to continue levying an unharmonized retail sales tax, which results in a significant tax on capital purchases.

One area where Greater Vancouver has a clear advantage is in office rents, its other A grade performance. This advantage, however, could also be viewed in a negative light since low rents could also be because demand for office space is not as strong here as in other regions, which in turn could be tied to Vancouver's perennial struggles to attract corporate head offices. Still, Greater Vancouver ranks sixth out of 18 based on an average rent of US$40 per square foot. In comparison, average rents in Hong Kong, the scorecard's most expensive office market, are more than seven times higher, at US$300 per

[11] Bazel, Mintz and Thompson, "2017 Tax Competitiveness Report: The Calm Before the Storm"

square foot. Likewise, second-place Shanghai's average rents are almost three-and-a-half times higher, at nearly US$135 per square foot.

Greater Vancouver does generally well on the six transportation-gateway-related indicators, implying that Greater Vancouver's key cluster compares favourably against its main international competitors. Although the metro area does not earn an A grade on any of these indicators, neither does it earn any Ds. Among this group, Greater Vancouver's best result is in port cargo tonnage, where it ranks third and gets a B grade—maintaining its lofty position from Scorecard 2016, even though its port cargo tonnage declined relative to GDP between the two reports. It is also inching closer to second place, although this is entirely due to a decrease in Singapore's GDP-adjusted cargo volumes. Greater Vancouver's port cargo tonnage per $1 million GDP trails that of second-place Singapore by 25 per cent in Scorecard 2018, compared with nearly 40 per cent in Scorecard 2016. However, a first-place finish is not on the horizon—Rotterdam is far and away the indicator leader, with GDP-adjusted volumes nearly six-and-a-half times higher than Greater Vancouver's. Moreover, Greater Vancouver is falling further behind from Rotterdam, whereas port cargo tonnage has increased relative to GDP since Scorecard 2016.

Greater Vancouver also does relatively well on port container throughput scaled by GDP, placing fifth and earning a C grade, the identical ranking and grade as in the previous report. But, once again, it is far outstripped by the port container throughput of the four regions slotted ahead of it. Rotterdam and Singapore are in a category by themselves, with Shanghai and Hong Kong making up a second tier. Nonetheless, Greater Vancouver remains the highest-ranked North American port measured by this indicator, although Halifax is nipping at its heels.

Greater Vancouver's cruise market also compares favourably against these international comparators, though its performance here is not as impressive as it is on the port-oriented indicators. Greater Vancouver earns a C grade and ranks ninth out of 18, two spots lower than in Scorecard 2016, as it was surpassed by Shanghai and Houston. Still, Greater Vancouver ranks one spot ahead of Seattle and remains Canada's most popular cruise ship landing destination—but Halifax has partly closed the gap.

Activity at Greater Vancouver's airport is more middle of the pack. For inbound airline seat capacity per capita, Greater Vancouver ranks eight out of 20 and receives a B grade. Greater Vancouver remains well behind leader Copenhagen, whose airline seat capacity per capita is almost double Greater Vancouver's. Greater Vancouver is also bested by two other Canadian metro areas—Calgary and Halifax—though Greater Vancouver's score is higher than Toronto's and Montréal's, its main Canadian competitors. It also ranks above Los Angeles, home to Los Angeles International Airport (LAX)—the fifth busiest airport in the world by passenger traffic.

Greater Vancouver come in eighth place on inbound airport cargo tonnage capacity per million dollars of GDP, one spot higher than in Scorecard 2016, though still only good enough to maintain its C grade from the previous report. At 6 tonnes of cargo per million dollars of GDP in 2016, the airport's cargo capacity pales in comparison with such heavyweight air hubs as Hong Kong and Seoul, where GDP-adjusted freight capacity exceeds 12 tonnes. Still, Greater Vancouver is the highest-ranking North American metro area measured by this indicator, surpassing previously top-ranked Miami.

A new statistic added to this year's benchmarking analysis confirms Greater Vancouver's reputation as a middling performer on airport-related indicators. It ranks 14th out of 19 on the number of non-stop flight destinations offered at a region's major airport, getting a C grade. According to our calculations, Vancouver International Airport offers flights to 125 destinations, about 55 per cent fewer than those offered by front-runner Manchester. Greater Vancouver is also a middle-of-the-pack performer when compared against its Canadian counterparts. It ranks behind Toronto and Montréal, but ahead of Calgary and Halifax.

The two indicators that measure the strength of the high-tech sector, the predominant growth driver in innovation-focused city-regions, offer glimmers of hope for Greater Vancouver. First, Greater Vancouver climbed one spot in venture capital per $1 million of GDP, moving into third place and flipping a C grade in Scorecard 2016 to a B grade in this year's report. Still, it remains eclipsed by San Francisco, where venture capital per $1 million of GDP is 10 times higher. Greater Vancouver also moved up one spot in the high-tech sector's share of total employment, climbing from ninth to eighth place, even though the share remained constant at 4.5 per cent. On a negative note, San Francisco widened its already significant lead against Greater Vancouver. In Scorecard 2016, its share was twice as high as Greater Vancouver's, but now it is 2.4 times higher.

The eight economy category indicators that specifically measure the overall economy also present a mixed picture for Greater Vancouver. One key pattern emerges though—it tends to do well on many of the indicators that measure growth, but struggles on the ones that measure levels. It earns two B grades among this group of indicators for the unemployment rate and labour productivity growth. The first B grade suggests that labour markets are tightening and job seekers will have an easier time finding work, thus making Greater Vancouver more attractive to people. The second B grade is particularly noteworthy, since labour productivity growth is often linked to income growth—strength in the first often results in strength in the latter. However, the relationship between these two indicators has weakened in recent years in many countries, and this is evident in Greater Vancouver's C grade and disappointing 14th place position in after-tax income growth.[2]

Despite coming in fourth place in GDP per capita growth, Greater Vancouver earns only a C grade, given that its average annual growth was less than half the pace of front-runner Shanghai's. That said, Shanghai's outsized growth is expected since it, like China overall, is still catching up to more advanced economies like Canada's. Similarly, decent employment growth of 1.6 per cent per year in Greater Vancouver was only good enough for 13th place and a C grade, given that the rate of growth in Shanghai was nearly three times faster.

Once again, Greater Vancouver's most disappointing performances among the economy-focused indicators are the ones in per capita or per worker terms, which is the same concern that was flagged in Scorecard 2016. Greater Vancouver finishes 13th and earns C grades in both labour productivity (real GDP per worker) and real GDP per capita (real GDP per person), nearly identical to the results in the previous report. We estimate Greater Vancouver's output per worker at just above US$77,000, or 63 per

[2] Schwellnus, Kappeler, and Pionnier, *Decoupling of Wages From Productivity*.

cent of front-runner Houston's. Among the Canadian metro areas, Calgary and Toronto both do better—Calgary by a wide margin. That said, Houston and Calgary can largely thank the significant presence of the oil industry, a notoriously capital-intensive sector, for their high productivity levels, something Greater Vancouver can do little about. But other regions also rank high, including San Francisco, Sydney, and Seattle. Therefore, Greater Vancouver would be best served to draw inspiration from them.

The poor performance in real GDP per worker and per capita is particularly disappointing since they are so closely connected to a region's standard of living. With such mediocre results in these two indicators, therefore, it is not surprising that Greater Vancouver's ranking in after-tax income per capita is similarly poor. In fact, this indicator accounts for one of its five D grades. Greater Vancouver's after-tax income was measured at US$25,400, while front-runner San Francisco's was US$64,300 or 2.5 times higher. Low per capita incomes also obviously exacerbate Greater Vancouver's housing affordability woes.

Finally, Greater Vancouver is held back by a small market size (the total income of the population within a 500-mile radius of the metro area), which makes it more difficult for local businesses to realize economies of scale. Specifically, Greater Vancouver gets a D in this indicator and trails all Canadian metro areas except Calgary. Toronto's market is more than seven times the size of Greater Vancouver's, while Montréal's is nearly six times larger. Both Toronto and Montréal benefit from their proximity to major markets in the U.S. Northeast, particularly Boston, New York, Philadelphia, and Washington. In contrast, the markets around Greater Vancouver, like Seattle, Portland, and Victoria, are much smaller. Because of Greater Vancouver's small market size, the region must be even more competitive and productive than its competitors to make up for the fact that major markets are farther away. Indeed, in an open economy like Canada's, businesses can still realize economies of scale through trade with foreign markets.

Greater Vancouver's performance in tourism is also relatively disappointing. Vancouver receives just over 2.2 million international visitors annually, a healthy amount compared with most other Canadian destinations, but only about 10 per cent of Hong Kong's and Singapore's total. Those two areas each boast around 20 million international visitors per year. Against this backdrop, Greater Vancouver is ranked 12th and gets a D grade. Toronto also attracts more international visitors each year than does Greater Vancouver, although it is the only Canadian metro region to do so. Greater Vancouver ranks fifth among the nine North American cities for which data are available.

Likewise, Greater Vancouver's ability to attract international association meeting participants is similarly discouraging. Specifically, Greater Vancouver is ranked ninth in this indicator, down from eighth place in the previous scorecard. Despite this top-half ranking, it still earns only a D grade because it attracts only about one-quarter the participants as first-place Seoul. When compared with its Canadian counterparts, it attracts fewer participants than Toronto and Montréal, but it attracts more than Calgary and Halifax, which rank 19th and 20th, respectively. This is a slight deterioration over Scorecard 2016, when Greater Vancouver was bested only by Toronto.

Table 7
Detailed Economy Category Results

Economy indicators	Definition	Significance	What about Greater Vancouver?	Grades							
Real gross domestic product (GDP) per capita # metro areas ranked: 20	Real GDP is the overall value of goods and services produced within a metro region, adjusted for inflation. Real GDP is divided by total population to get real GDP per capita. Data are from 2015 and are in expressed in US$2007 on a PPP basis.	Real GDP per capita is commonly used to compare relative wealth among regions. A metro area with high real GDP per capita will have a high standard of living, making it more attractive to people and businesses.	**Greater Vancouver** moves up one spot in the rankings, coming in 13th place with a C grade. San Francisco, Houston, and Seattle garner the only A marks on this indicator, all with real GDP per capita of over $70,000. Just as in Scorecard 2016, U.S. metro areas continue to boast higher levels of real GDP per capita than their Canadian counterparts, with the lone exception of Calgary. Shanghai remains at the bottom of the pack.	1.	San Francisco	82,349	A	11.	Miami	46,076	C
				2.	Houston	75,512	A	12.	Toronto	42,021	C
				3.	Seattle	74,589	A	**13.**	**Vancouver**	**39,914**	**C**
				4.	Calgary	65,755	B	14.	Rotterdam	37,000	D
				5.	Portland	62,953	B	15.	Halifax	34,906	D
				6.	Los Angeles	61,847	B	16.	Seoul	34,789	D
				7.	Singapore	55,924	B	17.	Montréal	33,229	D
				8.	Sydney	51,431	C	18.	Barcelona	30,900	D
				9.	Hong Kong	48,163	C	19.	Manchester	26,300	D
				10.	Copenhagen	47,100	C	20.	Shanghai	23,312	D
Real GDP per capita growth # metro areas ranked: 20	The average annual increase in real GDP per capita over a five-year period, from 2011 to 2015.	Real GDP per capita growth is one way to measure the change in the standard of living. Stronger growth tends to generate higher profits for firms, higher wages for	With an five-year annual growth of 5 per cent, Shanghai is the runaway leader on this indicator, earning the lone A grade. Manchester and Seoul round out the top three, with B marks. **Greater Vancouver**'s real GDP per capita growth improved by 1.6 percentage points compared to Scorecard 2016, allowing to jump from seventh to fourth	1.	Shanghai	5.0	A	11.	Toronto	1.4	C
				2.	Manchester	3.5	B	12.	Seattle	1.4	C
				3.	Seoul	2.6	B	13.	Miami	1.2	C
				4.	**Vancouver**	**2.3**	**C**	14.	Sydney	1.1	C
				5.	Singapore	2.3	C	15.	Calgary	0.8	D
				6.	Houston	2.2	C	16.	Montréal	0.6	D

Economy indicators	Definition	Significance	What about Greater Vancouver?	Grades							
		workers, and higher revenues for governments.	place and to remain the highest-ranked Canadian metro area. Still, it is only good enough to earn it a C grade. Halifax and Portland occupy the bottom two spots, posting decline between 2011 and 2015.	7. Hong Kong	2.2	C	17. Rotterdam	0.6	D
				8. Copenhagen	1.8	C	18. Barcelona	0.3	D
				9. San Francisco	1.5	C	19. Halifax	-0.1	D
				10. Los Angeles	1.4	C	20. Portland	-0.2	D
Labour productivity # metro areas ranked: 20	Labour productivity is a ratio calculated by dividing real GDP by employment. Data are from 2015 and are in expressed in US$2007 on a PPP basis.	Metro areas with high levels of productivity tend to offer high wages for workers and/or high profits for firms. A metro area with high labour productivity will be more attractive to both people and businesses.	As it does on GDP per capita, **Greater Vancouver** lags when it comes to the level of labour productivity. It ranks 13th with a C grade, with a productivity level equal to only about 60 per cent of leader Houston. All U.S. metro areas boast higher levels of labour productivity than Vancouver. Five of the top seven regions are American, sharing to the top of the rankings with Sydney and Calgary. Manchester and Shanghai finish in the bottom two positions.	1. Houston	121,550	A	11. Rotterdam	80,369	C
				2. San Francisco	119,224	A	12. Copenhagen	77,210	C
				3. Calgary	115,506	A	**13. Vancouver**	**77,096**	**C**
				4. Seattle	111,721	A	14. Barcelona	74,737	C
				5. Sydney	103,664	A	15. Miami	73,930	C
				6. Portland	99,974	B	16. Seoul	67,349	C
				7. Los Angeles	97,686	B	17. Montréal	65,954	C
				8. Hong Kong	93,292	B	18. Halifax	65,131	C
				9. Singapore	88,037	B	19. Manchester	48,682	D
				10. Toronto	80,977	C	20. Shanghai	41,355	D
Labour productivity growth # metro areas	The average annual increase in labour productivity over a five-	Labour productivity growth is the only sustainable	**Greater Vancouver**'s labour productivity growth performance is strong, as it ranks fourth and earns a B mark,	1. Hong Kong	4.5	A	11. Sydney	1.0	C
				2. Manchester	3.0	A	12. Toronto	0.9	C

Economy indicators	Definition	Significance	What about Greater Vancouver?	Grades							
ranked: 20	year period, from 2011 to 2015.	way to raise living standards over the long term. It increases the competitiveness of firms and fosters greater purchasing power for households. A metro region with high productivity growth is more attractive to people and businesses.	besting all Canadian CMAs. Still, Vancouver's annual average growth is less than half the pace of leader Hong Kong, only one of two metro regions to earn an A grade (Manchester is the other). Four U.S. metro areas suffered productivity declines, including last-place Portland, which suffered an average annual contraction of 1.4 per cent.	3.	Copenhagen	2.3	B	13.	Montréal	0.7	C
				4.	**Vancouver**	**2.1**	**B**	14.	Calgary	0.7	C
				5.	Seoul	1.5	C	15.	Seattle	0.3	C
				6.	Rotterdam	1.4	C	16.	Halifax	0.2	C
				7.	Shanghai	1.4	C	17.	San Francisco	-0.4	D
				8.	Barcelona	1.2	C	18.	Miami	-0.6	D
				9.	Houston	1.2	C	19.	Los Angeles	-0.7	D
				10.	Singapore	1.2	C	20.	Portland	-1.4	D
Employment growth # metro areas ranked: 20	Five-year average annual growth in total employment, measured from 2011 to 2015.	Strong employment growth means greater opportunities for work, making a metro region more attractive to people.	**Greater Vancouver** has enjoyed decent job growth in recent years, but it is still only good enough to place 13th with a C grade. Not surprisingly, Shanghai, located in fast-growing China, ranks first. Two European areas rank last, with Rotterdam and Barcelona both suffering employment declines.	1.	Shanghai	4.5	A	11.	Sydney	1.7	B
				2.	San Francisco	3.5	A	12.	Hong Kong	1.6	C
				3.	Miami	3.4	A	**13.**	**Vancouver**	**1.6**	**C**
				4.	Houston	3.2	A	14.	Manchester	1.4	C
				5.	Calgary	3.1	B	15.	Copenhagen	1.0	C
				6.	Singapore	2.9	B	16.	Montréal	0.9	C

Economy indicators	Definition	Significance	What about Greater Vancouver?	Grades							
				7.	Los Angeles	2.9	B	17.	Seoul	0.8	C
				8.	Seattle	2.6	B	18.	Halifax	0.7	C
				9.	Portland	2.5	B	19.	Rotterdam	-0.4	D
				10.	Toronto	2.0	B	20.	Barcelona	-1.1	D
Unemploy-ment rate # metro areas ranked: 20	The percentage of the labour force not working, based on 2016 data. Shanghai data are for 2015.	A metro region with a lower unemployment rate has a tighter labour market, making it more likely that someone without a job will find employment. Such places are more likely to attract people.	With an unemployment rate of 2.1 per cent, Singapore is the runaway leader in this indicator. Hong Kong comes in second and is the only other metro region to earn an A grade. **Greater Vancouver** is a strong performer in this indicator—its unemployment rate of 4.4 per cent is good enough for a sixth-place finish and B grade. It is also the top-performing Canadian metro area. Barcelona sits in last place and is the only metro area with a double-digit unemployment rate.	1.	Singapore	2.1	A	11.	Halifax	5.0	B
				2.	Hong Kong	3.4	A	12.	Miami	5.0	B
				3.	San Francisco	3.8	B	13.	Houston	5.2	B
				4.	Shanghai	4.0	B	14.	Manchester	5.6	C
				5.	Seoul	4.3	B	15.	Toronto	6.1	C
				6.	**Vancouver**	**4.4**	**B**	16.	Copenhagen	6.4	C
				7.	Seattle	4.5	B	17.	Montréal	6.6	C
				8.	Portland	4.7	B	18.	Rotterdam	8.2	C
				9.	Sydney	4.9	B	19.	Calgary	8.5	D
				10.	Los Angeles	4.9	B	20.	Barcelona	15.5[U]	D
Disposable income per capita*	A metro area's average after-tax income is divided by total population to get	Metro regions with high average incomes	Metro areas in the U.S. dominate the top of the rankings, occupying the top six spots.	1.	San Francisco	64,288	A	11.	Copenhagen	27,436	D
				2.	Seattle	53,649	A	12.	**Vancouver**	**25,435**	**D**

Economy indicators	Definition	Significance	What about Greater Vancouver?	Grades							
# metro areas ranked: 20	disposable income per capita. Data are based on average after-tax income in US$ PPP in 2014.	are likely to draw in more people.	Calgary, in eighth place with a C grade, leads all Canadian CMAs, with an average disposable income of $35,700. **Greater Vancouver** ranks 12th, but garners a D grade. At $25,400, Vancouver's disposable income per capita is less than half of top-ranked San Francisco. Shanghai ranks last.	3.	Houston	48,098	A	13.	Toronto	24,790	D
				4.	Los Angeles	44,975	B	14.	Halifax	23,572	D
				5.	Miami	42,922	B	15.	Rotterdam	22,436	D
				6.	Portland	40,811	B	16.	Manchester	22,308	D
				7.	Sydney	39,349	B	17.	Montréal	21,709	D
				8.	Calgary	35,681	C	18.	Seoul	21,204	D
				9.	Hong Kong	32,596	C	19.	Barcelona	19,872	D
				10.	Singapore	30,535	C	20.	Shanghai	13,593	D
Disposable income per capita growth # metro areas ranked: 20	Average annual growth of disposable income (after tax) per capita measured over a five-year period, from 2010 to 2014.	Metro regions with strong income growth are more likely to attract more people.	Shanghai, with average annual disposable income per capita growth of 10.6 per cent, overpowers all other metro areas on this indicator and gets the lone A grade. Hong Kong and Seoul, two other fast-growing Asian economies, rank second and third as the only two B grade metro areas. **Greater Vancouver** sits in 14th place with a C grade, behind Calgary but ahead of its other Canadian comparators. Barcelona—the	1.	Shanghai	10.6	A	11.	Los Angeles	3.0	C
				2.	Hong Kong	7.1	B	12.	Portland	2.7	C
				3.	Seoul	5.3	B	13.	Miami	2.5	C
				4.	Sydney	4.6	C	**14.**	**Vancouver**	**2.5**	**C**
				5.	Calgary	4.2	C	15.	Halifax	2.3	C
				6.	Seattle	3.7	C	16.	Montréal	2.3	C
				7.	San Francisco	3.6	C	17.	Toronto	1.9	D
				8.	Manchester	3.6	C	18.	Singapore	1.3	D
				9.	Houston	3.5	C	19.	Rotterdam	0.8	D

Economy indicators	Definition	Significance	What about Greater Vancouver?	Grades							
			only region to post a decline—finishes in the bottom position.	10.	Copenhagen	3.2	C	20.	Barcelona	-0.5	D
High-tech employment** # metro areas ranked: 20	The information and communications technology (ICT) sector's share of total employment. Data are from 2016 for Canada, Singapore, and Seoul; 2015 for the U.S., Europe, Hong Kong, and Shanghai; 2011 for Sydney.	This indicator shows the proportion of people working in high-tech jobs. The higher the percentage, the more attractive a metro region to both businesses and highly skilled individuals.	Unsurprisingly, San Francisco and Seattle take the two top spots, and are the only metro regions to earn A and B grades, respectively. San Francisco's high-tech employment share is slightly less than double **Greater Vancouver**'s, which ranks eighth with a C grade, third among Canadian regions. Toronto and Montréal rank in fifth and sixth place, respectively, with both receiving C grades. Barcelona ranks in last, as only 2.2 per cent of its workforce is employed in high-tech.	1.	San Francisco	10.7	A	11.	Calgary	3.9	D
				2.	Seattle	7.6	B	12.	Halifax	3.8	D
				3.	Copenhagen	6.3	C	13.	Los Angeles	3.6	D
				4.	Singapore	6.2	C	14.	Manchester	3.4	D
				5.	Toronto	5.6	C	15.	Sydney	3.0	D
				6.	Montréal	5.3	C	16.	Rotterdam	2.9	D
				7.	Portland	5.0	C	17.	Miami	2.8	D
				8.	**Vancouver**	**4.5**	**C**	18.	Houston	2.7	D
				9.	Seoul	4.4	C	19.	Hong Kong	2.6	D
				10.	Shanghai	4.0	D	20.	Barcelona	2.2	D
Total tax index (TTI) # cities ranked: 14	The total taxes paid by similar corporations in a given location and industry, calculated as a percentage of total taxes paid by similar	The index is designed to compare the total tax burden faced by companies in each city,	Canadian cities do very well in this indicator; they take five of the top six spots, and all earn A grades. **Greater Vancouver** ranks fourth, behind Calgary, Halifax, and Toronto. Sydney rounds out the A cities. U.S.	1.	Calgary	41.9	A	11.	Seattle	94.4	D
				2.	Halifax	43.8	A	12.	Sydney	96.7	D
				3.	Toronto	47.4	A	13.	Los Angeles	105.1	D

Economy indicators	Definition	Significance	What about Greater Vancouver?	Grades								
This indicator is at the city level.	corporations across the U.S. Data are from 2016 and are compiled by KPMG. Data were not available for Copenhagen, Barcelona, Seoul, Rotterdam, Shanghai, and Hong Kong.	including income taxes, capital taxes, sales taxes, property taxes, miscellaneous local business taxes, and statutory labour costs. Metro regions with lower tax burdens are more attractive to new business and investment.	metros lag far behind; Miami earns a C and the rest garner D grades. Data are not available for Asian and European metro regions.	**4.**	**Vancouver**	**49.0**	**A**	14.	San Francisco	106.3.	D
				5.	Manchester	55.7	A	15.	Copenhagen	n.a.	
				6.	Montréal	57.4	A	16.	Barcelona	n.a.	
				7.	Rotterdam	68.2	B	17.	Seoul	n.a.	
				8.	Miami	84.2	C	18.	Singapore	n.a.	
				9.	Portland	92.0	D	19.	Shanghai	n.a.	
				10.	Houston	93.9	D	20.	Hong Kong	n.a.	
Marginal effective tax rate on capital investment for businesses # cities ranked: 17	The tax rate a corporation would pay on one additional dollar of return on capital investment. Data are for 2015. Data were not available for Hong Kong, Shanghai, and Singapore.	A high marginal effective tax rate on capital investment makes a region less attractive to corporate investment, reducing economic growth.	Copenhagen and Rotterdam, with the lowest METR on capital investment, take the top two spots. Montréal is the best-performing Canadian mero area, finishing in third place with an A grade. Halifax follows in fourth position and is the first B rated metro region. Toronto and Calgary are middle-of-the-pack performers and earn B grades. Greater Vancouver performs poorly on this indicator, with recent U.S. tax cuts pushing it	1.	Copenhagen	15.3	A	11.	Toronto	19.0	B
				2.	Rotterdam	17.0	A	12.	Calgary	19.1	B
				3.	Montréal	18.2	A	13.	Barcelona	19.2	B
				4.	Halifax	18.7	B	14.	Seoul	21.0	B
				5.	Miami	18.8	B	15.	Manchester	22.4	C
				6.	Los Angeles	18.8	B	16.	Sydney	25.4	D

Economy indicators	Definition	Significance	What about Greater Vancouver?	Grades							
			all the way to the bottom of the rankings.	7.	Houston	18.8	B	**17.**	**Vancouver**	**27.7**	**D**
				8.	Seattle	18.8	B	18.	Hong Kong	n.a.	
				9.	San Francisco	18.8	B	19.	Shanghai	n.a.	
				10.	Portland	18.8	B	20.	Singapore	n.a.	
Average office rents # cities ranked: 18 This indicator is at the city level.	This is a measure of the total rental cost of downtown Class A office space in US$ per square foot. Data are for the first quarter of 2017. Data were not available for Halifax and Portland.	This indicator is one measure of the cost of doing business. Metro regions with lower office rents are more attractive to new business and investment.	European and Canadian cities have the cheapest office rents, with metro areas from these two regions placing in the first seven spots. Rotterdam, Calgary, and Montréal take the top three spots. **Greater Vancouver** ranks sixth with an A grade. Asian cities do poorly on this indicator, accounting for four of the six bottom-ranked cities. Hong Kong places last. At US$302.50 per square foot, office rents in Hong Kong are more than seven times higher than those in Vancouver, which are just under US$40.	1.	Rotterdam	29.4	A	11.	Houston	63.1	B
				2.	Calgary	32.9	A	12.	Manchester	64.7	B
				3.	Montréal	33.4	A	13.	Singapore	85.0	C
				4.	Barcelona	35.2	A	14.	Sydney	97.2	C
				5.	Copenhagen	35.4	A	15.	Seoul	100.6	C
				6.	**Vancouver**	**39.9**	**A**	16.	San Francisco	112.7	D
				7.	Toronto	48.4	A	17.	Shanghai	133.8	D
				8.	Los Angeles	49.0	A	18.	Hong Kong [U]	302.5	D
				9.	Miami	52.7	A	19.	Halifax	n.a.	
				10.	Seattle	61.1	B	20.	Portland	n.a.	

Economy indicators	Definition	Significance	What about Greater Vancouver?	Grades							
Venture capital investment per $1 million of GDP # metro areas ranked: 14	This indicator measures the average investment in new start-ups per US$1 million of GDP. Data are an average from 2011 to 2015. Data were not available for Copenhagen, Rotterdam, Barcelona, Manchester, Sydney, and Shanghai.	Metro regions with a healthy venture capital market will yield more start-up activity and thus be more attractive to business and investment.	San Francisco, the home of Silicon Valley, eclipses all other metro areas on this indicator. Seattle is a very distant second. On a positive note, **Greater Vancouver** ranks third and earns a B grade, topping all Canadian CMAs. On a negative note, venture capital investment as a share of GDP is 10 times higher in San Francisco. Houston, Hong Kong and Manchester lag, all receiving D grades.	1.	San Francisco	32,167[U]	A	11.	Calgary	1,036	D
				2.	Seattle	3,967	A	12.	Houston	584	D
				3.	**Vancouver**	**3,020**	**B**	13.	Hong Kong	413	D
				4.	Montréal	2,746	B	14.	Manchester	286	D
				5.	Los Angeles	2,333	B	15.	Copenhagen	n.a.	
				6.	Portland	1,842	C	16.	Rotterdam	n.a.	
				7.	Seoul	1,804	C	17.	Barcelona	n.a.	
				8.	Toronto	1,744	C	18.	Manchester	n.a.	
				9.	Halifax	1,599	C	19.	Sydney	n.a.	
				10.	Singapore	1,450	C	20.	Shanghai	n.a.	
Market size # metro areas ranked: 20	Total income of the population within a 500-mile radius of the metro area (measured in trillions of US$ PPP). Data are for 2015.	The greater the purchasing power of the broad regional market, the more attractive a metro region is as a place for new business and investment.	One metro region stands out in the field of 20: Rotterdam. It is well ahead, with a market size of US$9.3 trillion, garnering the only A. Sitting in second place, Toronto is the top Canadian metro area. **Greater Vancouver**'s location on the coast and far from any major U.S. city explains its poor showing here, ranking 16th overall with a D grade. At	1.	Rotterdam	9,273	A	11.	San Francisco	2,239	D
				2.	Toronto	6,320	B	12.	Houston	1,927	D
				3.	Copenhagen	5,164	B	13.	Halifax	1,149	D
				4.	Manchester	5,101	B	14.	Miami	990	D
				5.	Montréal	4,968	B	15.	Portland	936	D
				6.	Seoul	4,637	C	**16.**	**Vancouver**	**855**	**D**
				7.	Shanghai	3,705	C	17.	Seattle	834	D

Economy indicators	Definition	Significance	What about Greater Vancouver?	Grades							
			US$855 billion, Vancouver's market size is only about one-seventh the size of Toronto's.	8.	Barcelona	2,919	C	18.	Singapore	777	D
				9.	Hong Kong	2,667	D	19.	Calgary	621	D
				10.	Los Angeles	2,531	D	20.	Sydney	565	D
International visitors # cities ranked: 18 This indicator is at the city level.	The total number of international visitors to the metro area. Data are an average from 2013 to 2016 (in thousands). Data were not available for Portland and Seattle.	International visitors generate employment in a variety of sectors (such as wholesale and retail trade and personal services) and boost consumer spending and government revenues.	Hong Kong and Singapore dwarf the competition in this indicator, with the latter boasting double times as many international tourists as third-place Seoul. Toronto, **Greater Vancouver**, and Montréal lag the Asian powerhouses, placing in 9th, 12th and 13th, respectively, and earning D grades. Halifax finishes last.	1.	Hong Kong	26,706	A	11.	Copenhagen	2,494	D
				2.	Singapore	18,181	B	**12.**	**Vancouver**	**2,247**	**D**
				3.	Seoul	8,968	C	13.	Montréal	1,429	D
				4.	Miami	7,243	C	14.	Manchester	1,084	D
				5.	Shanghai	6,482	D	15.	Houston	813	D
				6.	Barcelona	6,108	D	16.	Calgary	638	D
				7.	Los Angeles	5,435	D	17.	Rotterdam	483	D
				8.	San Francisco	3,423	D	18.	Halifax	196	D
				9.	Toronto	3,351	D	19.	Portland	n.a.	
				10.	Sydney	3,169	D	20.	Seattle	n.a.	
Number of participants in international association meetings # cities ranked: 20	Number of participants in meetings organized or sponsored by international associations with at least 50 participants. They include both corporate and association meetings. Data are for 2016.	Participants in international association meetings boost consumer spending in the host city and generate	With nearly 105,000 participants, Seoul leads the way, followed closely behind by two European centres—Barcelona and Copenhagen. **Greater Vancouver** ranks ninth and gets a D, along with 11	1.	Seoul	104,780	A	11.	Rotterdam	20,998	D
				2.	Barcelona	99,468	A	12.	Sydney	18,815	D
				3.	Copenhagen	99,359	A	13.	Los Angeles	12,400	D
				4.	Singapore	61,294	B	14.	Manchester	11,681	D
				5.	Hong Kong	61,057	B	15.	Miami	11,186	D

Economy indicators	Definition	Significance	What about Greater Vancouver?	Grades							
This indicator is at the city level.		employment in tourist-oriented sectors.	other metro areas. Placing three spots ahead, Toronto is the top -ranked Canadian metro area, earning a grade of C. Two Canadian metro areas—Calgary and Halifax—sit in the last two spots.	6.	Toronto	40,491	C	16.	Portland	8,263	D
				7.	Montréal	36,828	C	17.	Seattle	6,628	D
				8.	Shanghai	34,690	C	18.	Houston	5,725	D
				9.	**Vancouver**	**25,042**	**D**	19.	Calgary	3,731	D
				10.	San Francisco	22,360	D	20.	Halifax	1,939	D
Inbound airplane seat capacity per capita # metro areas ranked: 20	Overall seat capacity of incoming non-stop flights to the metro area, divided by total population. Data are for 2016.	The greater the number of inbound airplane seats per capita, the greater the opportunity for business and leisure travel. Higher airport capacity gives businesses a greater opportunity to meet faraway clients face-to-face and provides better access to global supply chains.	Copenhagen dominates the field in this indicator. With 9.7 airplane seats per capita, it is the only metro region to receive an A grade. **Greater Vancouver** ranks eighth and garners a B grade, finishing behind Calgary and Halifax but ahead of Toronto and Montréal. In fact, Calgary ranks fifth overall. Montréal's score is the lowest among all Canadian metro areas, ranking 17th out of 20. Only Shanghai, Seoul and Rotterdam rank lower. Rotterdam's airplane seat capacity is low because of the relative ease of using Schiphol airport in nearby Amsterdam.	1.	Copenhagen	9.7	A	11.	Houston	4.9	C
				2.	Seattle	7.0	B	12.	Toronto	4.7	C
				3.	Singapore	6.9	B	13.	Manchester	4.7	C
				4.	San Francisco	6.8	B	14.	Portland	4.5	C
				5.	Calgary	6.6	B	15.	Miami	4.2	C
				6.	Halifax	6.1	B	16.	Los Angeles	3.7	C
				7.	Hong Kong	5.9	B	17.	Montreal	2.6	D
				8.	**Vancouver**	**5.4**	**B**	18.	Shanghai	2.0	D
				9.	Sydney	5.3	B	19.	Seoul	1.8	D
				10.	Barcelona	4.9	C	20.	Rotterdam	0.8	D

Economy indicators	Definition	Significance	What about Greater Vancouver?	Grades							
Inbound airport cargo tonnage capacity per $1 million of GDP # metro areas ranked: 20	This indicator measures a metro area's incoming air tonnage capacity on non-stop flights per US$1 million of GDP. Data are for 2016.	This indicator is used to gauge the performance of a metro area's airport as a cargo gateway.	With 6.2 tonnes of cargo per $1 million of GDP, **Greater Vancouver** is the best-performing metro region in North America. Still, this is only good enough for an eighth-place finish and C grade. Asian regions dominate the field, accounting for four of the five best regions, with Hong Kong on top. Like airplane seat capacity, Rotterdam lags well behind in last place in this other airport indicator.	1.	Hong Kong	10.8	A	11.	Toronto	5.0	C
				2.	Seoul	12.4	A	12.	Seattle	4.3	C
				3.	Singapore	12.0	A	13.	San Francisco	4.2	C
				4.	Copenhagen	9.6	B	14.	Miami	3.9	D
				5.	Shanghai	9.1	B	15.	Montréal	3.4	D
				6.	Manchester	8.7	B	16.	Houston	3.0	D
				7.	Barcelona	7.1	C	17.	Portland	3.0	D
				8.	**Vancouver**	**6.2**	**C**	18.	Calgary	2.9	D
				9.	Sydney	5.9	C	19.	Los Angeles	2.5	D
				10.	Halifax	5.3	C	20.	Rotterdam	0.7	D
Port container throughput per $1 million of GDP # metro areas ranked: 19	Container throughput is a volume measure expressed in 20-foot-equivalent units (TEUs) per US$1 million of GDP. Data are for 2015. Data were not available for Calgary.	Container throughput is a key factor when evaluating the health of a metro area's seaport.	Rotterdam and Singapore are the runaway leaders in this indicator. **Greater Vancouver** is the top-ranked North American metro area, placing fifth overall. But with one-seventh the container throughput per $1 million of GDP of first-place Rotterdam's, Vancouver gets only a C grade. Moreover, Vancouver's container throughput per $1 million of GDP is only about half as much as fourth-place Hong Kong's, so	1.	Rotterdam [U]	231.9	A	11.	Sydney	9.0	D
				2.	Singapore	99.9	A	12.	Miami	8.6	D
				3.	Shanghai	64.9	B	13.	Seoul	6.8	D
				4.	Hong Kong	58.8	B	14.	San Francisco	6.0	D
				5.	**Vancouver**	**30.5**	**C**	15.	Houston	4.6	D
				6.	Halifax	28.7	C	16.	Copenhagen	2.0	D
				7.	Los Angeles	18.8	D	17.	Portland	0.2	D
				8.	Seattle	13.0	D	18.	Toronto	0.0	D

Economy indicators	Definition	Significance	What about Greater Vancouver?	Grades							
			a move up in the rankings is not in the cards anytime soon.	9.	Barcelona	11.7	D	19.	Manchester	0.0	D
				10.	Montréal	10.7	D	20.	Calgary	n.a.	
Port cargo tonnage per $1 million of GDP # metro areas ranked: 19	Total trade (imports and exports in tonnes) at each metro area's port(s) per US$1 million of GDP. Data are for 2015. Data were not available for Calgary.	Ports able to handle large quantities of cargo are better positioned to thrive, boosting a metro area's attractiveness as a transportation and trade hub.	One metro area, Rotterdam, outshines the rest. Singapore comes in a distant second. **Greater Vancouver** performs relatively well on this indicator, ranking third with a B grade, again leading all North American metro areas. Halifax earns a C grade, while Montréal and Toronto earn D grades. In fact, Toronto ranks at the bottom.	1.	Rotterdam [U]	8,839	A	11.	Copenhagen	180	D
				2.	Singapore	1,860	A	12.	Portland	166	D
				3.	**Vancouver**	**1,381**	**B**	13.	Seattle	155	D
				4.	Shanghai	1,148	B	14.	Los Angeles	139	D
				5.	Hong Kong	729	C	15.	Sydney	114	D
				6.	Halifax	519	C	16.	Miami	110	D
				7.	Houston	504	C	17.	Manchester	89	D
				8.	Seoul	456	D	18.	San Francisco	47	D
				9.	Barcelona	274	D	19.	Toronto	6	D
				10.	Montréal	238	D	20.	Calgary	n.a.	
Number of cruise vessel calls # metro areas ranked: 18	Number of cruise vessel calls received by each region's port(s), based on 2016 data. Data for Los Angeles are for 2011. Data were not available for Portland and Calgary.	A high number of cruise vessel landings draw foreign individuals to a metro area, boosting its tourist numbers and port traffic.	Miami's cruise vessel calls are hard to match. At 2,028, they are over two-and-a-half times higher than those of second-place finisher Barcelona. **Greater Vancouver** is a middle-of-the-pack performer, placing ninth and earning a C. It still outshines the other three Canadian CMAs benchmarked here (Halifax,	1.	Miami [U]	2,028	A	11.	Hong Kong	185	D
				2.	Barcelona	758	A	12.	Halifax	136	D
				3.	Shanghai	437	B	13.	Seoul	97	D
				4.	Singapore	391	B	14.	San Francisco	80	D
				5.	Sydney	344	C	15.	Montréal	55	D
				6.	Copenhagen	306	C	16.	Rotterdam	38	D

Economy indicators	Definition	Significance	What about Greater Vancouver?	Grades							
			Montréal, and Toronto), all of which are D performers.	7.	Houston	280	C	17.	Toronto	7	D
				8.	Los Angeles	274	C	18.	Manchester	0	D
				9.	**Vancouver**	**228**	**C**	19.	Portland	n.a.	
				10.	Seattle	203	C	20.	Calgary	n.a.	
Number of non-stop flight destinations at major airport # metro areas ranked: 19	This indicator, compiled in early 2018, is the total number of non-stop flight destinations (both domestic and international) available at each metro area's major airport.	Businesses are more likely to invest in metro regions with extensive flight connections, since such flights facilitate global business links and investment opportunities.	**Greater Vancouver** fares poorly on this indicatory, placing 14th and earning a C grade. According to our calculations, Vancouver International Airport offers flights to 125 destinations, a little more than half the destinations of indicator-leader Manchester. Greater Vancouver is also a middling performer when compared against its Canadian counterparts. It ranks behind Toronto and Montréal, but ahead of Calgary and Halifax.	1.	Manchester	227	A	11.	Miami	142	B
				2.	Shanghai	215	A	12.	Montreal	140	B
				3.	Los Angeles	189	A	13.	San Francisco	138	B
				4.	Toronto	184	A	14.	**Vancouver**	**125**	**C**
				5.	Houston	183	A	15.	Sydney	106	C
				6.	Copenhagen	171	B	16.	Seattle	100	C
				7.	Hong Kong	163	B	17.	Calgary	73	D
				8.	Seoul	161	B	18.	Portland	72	D
				9.	Singapore	159	B	19.	Rotterdam	41	D
				10.	Barcelona	148	B	20.	Halifax	40	D

Economy indicators	Definition	Significance	What about Greater Vancouver?	Grades
Sources: The Conference Board of Canada; Statistics Canada; U.S. Bureau of Labor Statistics; U.S. Bureau of Economic Analysis; Moody's Economy.com; Organisation for Economic Co-operation and Development; Eurostat; International Monetary Fund; KPMG; CBRE; Australian Bureau of Statistics; Shanghai Statistical Yearbook; Government of Hong Kong; Alacra on Demand; Euromonitor International; Singapore Ministry of Manpower; Statistics Singapore; Korean Statistical Information Service, National Bureau of Statistics of China; OAG Aviation Worldwide LLC; American Association of Port Authorities; Cruise Lines International Association; International Congress and Convention Association; D. Chen and J.M. Mintz.				
*Disposable income data from Eurostat are available only at the regional level. The boundaries of these "regions" are not strictly defined and vary greatly across European metro areas.				
**Occupational data from the U.S. Bureau of Labor Statistics were partially secure for some metro areas. Data were either missing or not available for various occupational categories. Therefore, the rankings for U.S. metropolitan statistical areas are underestimated.				
U The metro area was considered an outlier and was thus removed when calculating the grades.				

6. Social

Chapter Summary

- Four metro areas, all North American, earn A grades in the social category: Calgary, Toronto Seattle, and Halifax.
- Each of these regions has its own social merits, although most feature low homicide rates, strong democratic values, and good air quality.
- Greater Vancouver places eighth and earns a B grade, thanks to a high foreign-born population share, low homicide rate, good air quality, and strong democratic values.
- Greater Vancouver's major drawbacks include its deteriorating housing affordability and relatively small light-rail network.
- The bottom three regions—Hong Kong, Miami, and Shanghai—share some common vulnerabilities: relatively unequal income distributions, relatively few residents with university degrees, and relatively low proportions of individuals aged 25–34 in their populations.

Table 8
Social Rankings and Grades

Ranking 2018 (2016)	CMA	Value	Grade
1 (11)	Calgary	0.644	A
2 (5)	Toronto	0.617	A
3 (6)	Seattle	0.583	A
4 (15)	Halifax	0.582	A
5 (3)	Sydney	0.577	B
6 (10)	San Francisco	0.572	B
7 (9)	Montréal	0.561	B
8 (7)	**Greater Vancouver**	**0.560**	**B**
9 (2)	Copenhagen	0.554	B
10 (4)	Portland	0.543	B
11 (8)	Manchester	0.543	B
12 (16)	Singapore	0.534	B
13 (1)	Barcelona	0.532	B
14 (14)	Seoul	0.522	B
15 (17)	Los Angeles	0.490	C
16 (13)	Rotterdam	0.462	C
17 (19)	Houston	0.447	D
18 (12)	Hong Kong	0.424	D
19 (18)	Miami	0.418	D
20 (20)	Shanghai	0.391	D

The social category contributes to our understanding of how 20 metro areas are performing on 16 measures of their socio-economic, environmental, and quality-of-life attributes. These measures

underpin a region's ability to lure educated, creative, and diverse people. Such individuals are expected to help create vibrant cities in the emerging "knowledge" economy and so are much in demand. These people will likely choose to locate in areas featuring superior quality-of-life attributes. We evaluate several of these here. Such yardsticks include housing affordability, income distribution, the share of cultural workers, and homicides. Newcomers' transportation prospects are assessed by comparing commute times in each area and the proportion of the employed labour force that does not drive an automobile to work. We measure a region's outdoor attractiveness by its air quality, how moderate its temperature is, and how many days of sunshine it typically receives.

Since some social attributes, like a robust social safety net, need to be paid for, a healthy economy that generates adequate tax revenues is an important prerequisite for a strong social performance.

Two Canadian metro areas, Calgary and Toronto, top the social rankings. (See Table 8.) Seattle and Halifax round out the A-rated jurisdictions, finishing in third and fourth place, respectively, making it a clean sweep atop the leaderboard for North American metro regions. The 10 cities receiving B grades are a disparate group featuring four cities from North America, three from Europe, two from Asia, and Sydney, Australia.

Greater Vancouver finishes in eighth place and earns a B grade. While it ranks three positions below Sydney—the top-rated B area—only 1.7 percentage points separate them. Two metro areas—Los Angeles and Rotterdam—are graded C. The four metro areas receiving D grades are also a diverse group, including two U.S. metropolitan statistical areas (Houston and Miami). Shanghai continues to languish in last place, finishing last in six individual indicators.

Table 9

Social Category Indicators

Indicators
Proportion of population 25 to 34 years old
Proportion of population that is foreign born
Proportion of population, age 25 and over, with at least a bachelor's degree
Proportion of population employed in cultural occupations
Comfortable climate index
Homicide rate
Housing affordability
Change in housing affordability
Average travel time to and from work
Travel to work: public transit, walking, and other non-auto commuting
Public transit rail network
Income inequality
Air quality
Age dependency ratio
Female workforce participation rate
EIU democracy index

6.1 Who's Best?

Calgary is our top-ranked metro area in the social category, moving up from an 11th-place ranking in 2016. Canada's oil capital remains a young, attractive, and dynamic metro area, despite the recent downturn in its economy from which it is now recovering. It is ranked A for the proportion of its population aged 25 to 34 years and B for the proportion of its 25-plus population with at least a bachelor's degree. The similar grade it gets for the share of its population that is foreign-born further demonstrates its attractiveness to newcomers. Its commute times are also decent, meriting a B grade. It is egalitarian, wealthy, and democratic, rating an A for its female workforce participation rate (where it is top-ranked), for its housing affordability (mainly due to relatively high local incomes), and its democracy index, while getting B scores for its comparatively equal income distribution (measured by its Gini coefficient) and its age dependency ratio. It is a relatively safe and clean metro area, earning an A grade for its air pollution and a B for its homicide rate. Calgary's downsides include a relatively low population share employed in cultural occupations and its comparatively cold climate index. It is assigned C grades in each of these categories. Calgary commuters love their cars: the area gets D grades for the proportion of its working population that commutes by public transit, biking, or walking and the relative length of its public transit railway network.

Toronto, Canada's most populous city, ranks second, an improvement from fifth in 2016. Similar to Calgary, Toronto's residents are well educated, diverse, and relatively young. The area gets an A grade and is top-ranked for the share of its population that is foreign-born. Canada is a country of immigrants, and Toronto—the country's financial capital—is a magnet for newcomers, with nearly half of its residents claiming a birthplace abroad. Its low air pollution and position in a democratic country are also important positives for newcomers; it gets A grades for both. The city also scores high for its population aged 25 to 34 and for the share of its population 25 years and older who have at least a bachelor's degree, earning B grades on both. Unfortunately, new arrivals are confronted by unaffordable housing costs, even though the city receives a flattering B grade for its housing affordability. Toronto is an egalitarian metro area, earning Bs for its female workforce participation rates and for its relatively even income distribution (as defined by the Gini coefficient). It also receives a B for the proportion of its population employed in cultural occupation. Despite ranking in third place for the length of its public transit railway network, Toronto gets only a C for the proportion of its working population that travels to work by public transit, biking, or walking. Perhaps as a result, area commuters also face C-level average travel times to work. The region also earns C grades for its cold climate and its age dependency ratio, suggesting that future tax increases may be an issue. On a positive note, Toronto did not receive a single D.

Seattle, a major seaport and high-tech centre and the hub of the U.S. Pacific Northwest, finishes in third place and also earns an A grade. This ranking is an improvement from Scorecard 2016, where it came in sixth. Like Calgary and Toronto, its population is young, educated, and culturally attuned. It gets an A grade for the proportion of its population aged 25 to 34 years and a B for the proportion of its 25-plus population with at least a bachelor's degree, while also meriting a B for the proportion of its population employed in cultural occupations. Its low air pollution (rated A), low homicide rates (rated A) and position in a democratic country (also graded A) are other attributes it shares with its Canadian

counterparts. But it beats Toronto and Calgary by getting a B grade for its mild climate. Seattle is also an affordable metropolitan area, rating an A for housing affordability and a B for the change in this indicator. On the downside, Seattle suffers from comparatively low female workforce participation rates and from an unequal income distribution, meriting C grades in both. The area also does not do well on public transportation measures. Seattle is graded D for both the proportion of its non-car commuting population and for the relatively short length of its public transit railway network. However, it does better on the average commute time to work, earning a B. As in Toronto, future tax increases may lurk: Seattle's age dependency ratio is graded only C.

Halifax, Nova Scotia's capital, is our last A rated metro region, ranking fourth, up from 15th in 2016, with its social ranking receiving a big boost from the inclusion of the new indicators. There is a lot to like about this medium-sized region (the 2016 Census population for its metropolitan area was 403,390). It is a clean, affordable and equitable place. The area is awarded an A grade and is top-ranked for its low air pollution. Homes are relatively affordable here and have been for a few years. Both its housing affordability and the change in this indicator are rated A. Relatively short commute times to work (for which the area is granted a B) are another attraction. (The less-positive implication of this is that the metro area gets only Ds for the proportion of its working population that travels to work by public transit, biking, or walking and for the absence of a public transit railway network.) Accordingly, young adults thrive here, and the region gets an A grade for the proportion of its population aged 25 to 34 years. One obstacle facing this young cohort is Halifax's relatively poor age dependency ratio, which gets only a C and could point to future tax hikes. More positively, the area's equity credentials are burnished by an A score on its democracy index and B grades for its relatively equitable income distribution and its female workforce participation rate. It is also a relatively safe place to live, earning a B grade for its homicide rate. Yet, Halifax lags in some areas; it gets only C grades for the proportion of its 25-plus population with at least a bachelor's degree and for the share of its population employed in cultural occupations. Its foreign-born population proportion is awarded a D. Tough winters are another relative drawback for Halifax, so its comfortable climate index is assigned only a C.

Sydney, our fifth-ranked metro area in the social category, has come a long way since its establishment as a British penal colony in the late 1700s. Its relative position in the rankings has changed little since it was ranked third in 2016. Our indicators paint a portrait of a cosmopolitan and welcoming metro region. It gets A grades for its foreign-born population share, the length of its public transit railway network (where it is top-ranked), its low air pollution, and its democracy index. It gets a B for the proportion of its population employed in cultural occupations. Newcomers will likely enjoy Sydney's subtropical climate, which merits a B. Those who put down roots will notice that it has a relatively egalitarian income distribution (its Gini coefficient is awarded a B) and that it is relatively young and safe. It gets B grades for the proportion of its population aged 25 to 34 years and for its homicide rate. Unfortunately, when these people seek a home, they will also learn that Sydney's housing affordability is relatively poor (this gets a C grade) and has eroded quickly over the last few years (earning a D score). The area does exhibit remnants of its frontier past; it merits only C for its female workforce participation rate. Employees seem to take a relatively long time to travel to work in Sydney and use their own vehicles to get there. Both Sydney's average commute time to work and the proportion of its working population that travels

to work by public transit, biking, or walking are awarded Cs. The area's social rating is dragged down by a D score it receives for its age dependency ratio, for the change in its housing affordability, and for the proportion of its 25-plus population with at least a bachelor's degree.

6.2 Focus on Greater Vancouver's Social Performance

Greater Vancouver's small drop in the rankings from seventh place in the 2016 report to eighth place in this version, and the identical letter grade of B, leaves us with the same conclusion as last time: it remains one of the world's most livable areas but has some vulnerabilities that need to be addressed.

On the scale of zero to one by which we rank the metro regions, its numeric score is 0.560, which is 0.045 points or 4.5 percentage points better than the previous report. In other words, Greater Vancouver improved its score, but it was still leapfrogged by other metro areas that showed even greater improvement.

Greater Vancouver's numeric grade is also a daunting 8.4 percentage points behind the leader Calgary and 2.2 percentage points behind Halifax, the last A-graded metro region in the social category. Table 10 summarizes the results for Greater Vancouver on all 16 social indicators from this scorecard and from the previous edition.

Table 10
Greater Vancouver's Social Performance

Indicator	Grade 2018	Grade 2016	Ranking 2018	Ranking 2016
EIU democracy index	A	-	2/20	-
Proportion of population that is foreign born	A	A	2/20	2/19
Air quality	A	A	4/20	1/20
Homicide rate	A	A	12/20	9/20
Female participation rate	B	-	5/19	-
Income inequality	B	C	8/20	11/20
Average travel time to and from work	B	C	9/19	10/19
Proportion of population aged 25–34	B	D	9/19	7/19
Share of population employed in culture	B	B	11/20	10/20
Age dependency ratio	C	-	7/20	-
Non-car commuting	C	C	8/18	8/17
Share of population with at least a bachelor's degree	C	C	9/20	9/20
Climate	C	B	12/20	12/20
Change in housing affordability	C	-	12/15	-
Housing affordability	C	D	13/15	15/17
Public transit railway network length	D	-	14/20	-

As befits a mid-ranked metro area, Greater Vancouver's letter grades by indicator are fairly balanced between A, B, C, and D. Specifically, it receives four A grades, five B grades, six C grades, and one D grade. Among the category's 16 indicators, Greater Vancouver's highest position is second place, and it

manages that feat in two indicators—the democracy index and the proportion of the population that is foreign born. The democracy index is a national-level indicator, so Greater Vancouver shares its second-place honours with its Canadian counterparts. Among the countries implicitly ranked here, only Denmark's democracy is rated higher than Canada's, so Copenhagen takes the top spot. Greater Vancouver's second-place finish for its high proportion of foreign-born residents follows closely behind leader Toronto, with their positions atop the leaderboard a testament to Canada's open immigration policy and its welcoming attitude toward newcomers.

The two other A grades for Greater Vancouver are in air quality and homicide rates, matching its performance in the previous report. Despite maintaining the A grades, Greater Vancouver fell in the rankings for both indicators—from first to fourth in air quality and from ninth to 12th in homicides. Still, Greater Vancouver's air quality remains high, with an average accumulation of fine particulate matter ($PM_{2.5}$) of just 7 milligrams per cubic metre (mg/m^3), 3 mg/m^3 higher than the reading from the previous scorecard, but only 2 mg/m^3 worse than this year's leader Halifax and much better than last-place Shanghai's average $PM_{2.5}$ reading of 52 mg/m^3. Despite the decline in air quality from the last report to this edition, there has been a general downward trend over the last two decades for most pollutants in the Greater Vancouver region, including carbon monoxide, nitrogen dioxide, sulphur dioxide, and particulate matter.[3]

Likewise, Greater Vancouver's homicide rate, though somewhat higher than those in Asian comparator regions, is significantly lower than those in U.S. metro areas. Although Greater Vancouver's homicide rate has been on a steep downward trend for 20 years, it jumped in 2014 and 2015, so the three-year moving average edged up in this scorecard compared with the previous one, increasing from 1.6 to 1.7 per 100,000 persons. In comparison, Miami's homicide rate, the highest among the metro areas covered in this scorecard, averaged 6.5 per 100,000 persons.

Included among Greater Vancouver's five B grades is the female workforce participation rate, one of this year's new social indicators. Canadian metro areas dominate the top of the rankings—Greater Vancouver sits in fifth place behind the other four Canadian census metropolitan areas benchmarked in this scorecard. Several factors likely explain why this ratio is elevated in Canada, not least of which is the country's generous maternity leave policy. In fact, the participation rate of mothers with children under the age of three was 69.5 per cent in Canada compared with 61.8 per cent in the U.S. in 2014—a 7.7 per cent difference.[4]

The share of workers employed in cultural industries also earns Greater Vancouver a B grade, matching Scorecard 2016's grade even though Greater Vancouver dropped from 10th to 11th place between the two reports. But the remaining three indicators that received B grades this year all improved their showing compared with the previous benchmarking analysis. Income inequality and average commuting times saw their grades improve from a C to a B, while the proportion of the population aged 25–34

[3] Fraser Valley Regional District and Metro Vancouver, *2013 Lower Fraser Valley Air Quality Monitoring Report*.
[4] Drolet, Uppal, and LaRochelle-Côté, *The Canada–U.S. Gap in Women's Labour Market Participation*.

enjoyed an even more impressive jump from a D to a B, despite a two-position drop in the relative ranking.

The higher grade for income inequality is a positive development, as the gap in income between rich and poor has become a hot-button political issue in Canada and elsewhere. Greater Vancouver's Gini coefficient fell from 0.44 in Scorecard 2016 to 0.41 in Scorecard 2018, indicating a more equitable income distribution. Finally, Greater Vancouver's higher grade in its concentration of those aged 25–34 years old is largely a function of a geographical definition change. Greater Vancouver earned only a D grade in the previous report when the indicator was calculated at the city level, but it earns a B grade in this edition now that the indicator is calculated at the metropolitan level. Despite its higher grade, it moved down from ninth to seventh among the peer metro areas.

The C group of indicators also includes a statistic new to the scorecard—the age dependency ratio. Greater Vancouver places in the top 10, but a C grade is levied because its ratio, at 42.2 per cent, is almost 14 percentage points higher than first-place Shanghai's (a lower ratio is deemed better because it signals lower pressure on the working-age population to cover the costs of the dependent population). Greater Vancouver is known as a magnet for retirees, a mild climate being one major reason why, so a lower grade is not unexpected.

The proportion of the workforce that commutes by car also earns Greater Vancouver a C, the same grade it received in the previous report. About 70 per cent of Greater Vancouver's working-age population drives to and from work, well above the proportions found in the Asian areas that dominate the top of the rankings. A C grade is also levied on the proportion of the population aged 25 and over with at least a bachelor's degree. Just over 34 per cent of this population cohort in Greater Vancouver holds at least a BA, while the share is closer to 50 per cent in first-place San Francisco.

Greater Vancouver also gets a C on climate, as determined by the Conference Board's comfortable climate index. True, the area is renowned for its mild climate, and a moderate daily maximum temperature is one component of the index. However, Greater Vancouver's high marks on that front are partly drowned out by too few days of sunshine, the other component of the index. Nevertheless, Greater Vancouver's 12th-place ranking still makes it is Canada's top-ranked CMA.

Greater Vancouver's final C grade is in housing affordability, measured as the median house price as a ratio of median household income. This is an improvement from Scorecard 2016 when the metro area earned a D grade. But the higher grade is no cause for celebration, as Greater Vancouver still ranks third from the bottom, with a ratio of 12.6, signalling severely unaffordable conditions. In addition, when comparing this ratio over the past five years, Greater Vancouver has seen the fourth greatest deterioration in housing affordability among the 15 metro regions for which we have data. In fact, the area's ratio has increased by 3.1 percentage points in five years, similar to other severely unaffordable areas such as Hong Kong and Sydney. This is another new indicator added to this year's report, and one of Greater Vancouver's six C grades in the social category.

Greater Vancouver's lone D grade in the social grouping also happens to be another new indicator: public transit railway network length in kilometres, a proxy for public transit access. Greater Vancouver's

relative performance on this measure is poor, ranking 14th out of 20, despite recent investments in rail including the Canada Line, which comprises 19.2 km of track. Greater Vancouver's SkyTrain Network length is 80 km. This is far below that of leader Sydney, which has 974 km of total track length. However, Greater Vancouver's score will likely improve in subsequent editions: Phases 1 and 2 of the TransLink Mayors' Council's 10-year transportation plan have both been funded and are under way, leading to a large increase in bus service, the expansion of existing rail lines, the addition of light-rail transit in Surrey, Newton, and Guildford, and a Millennium Line extension from VCC-Clark to Arbutus Street along the Broadway corridor.[5]

[5] Mayors' Council on Regional Transportation, *Regional Transportation Investments*, 11–12; TransLink, "Full Speed Ahead for the Mayor's Council's 10-Year Vision."

Table 11
Detailed Social Category Results

Social performance indicators	Definition	Significance	What about Greater Vancouver?	Grades							
Population 25–34 years old # cities ranked: 19	The proportion of the population aged 25–34 in 2016. Data were not available for Shanghai.	This age cohort is highly mobile and tends to be well educated. A metro area with a large proportion of this age grouping will be attractive to other young adults and will be better positioned for the future.	Two Canadian metro areas—Calgary and Halifax—lead the way. Despite its appeal to retirees, **Greater Vancouver** ranks ninth and earns a B grade. This is a poorer showing than in the 2016 scorecard, but the two rankings are based on different geographic boundaries and are not directly comparable. The 2016 scorecard featured city-level data, and this scorecard features regional-level data. European metro regions tend to do poorly. Miami, another popular place for retirees, also ranks low.	1.	Calgary	17.5	A	11.	Hong Kong	14.9	B
				2.	Halifax	16.6	A	12.	Singapore	14.4	C
				3.	Seattle	16.4	A	13.	Seoul	14.3	C
				4.	San Francisco	16.1	A	14.	Montréal	14.3	C
				5.	Sydney	16.0	B	15.	Manchester	14.3	C
				6.	Los Angeles	15.6	B	16.	Copenhagen	14.3	C
				7.	Portland	15.2	B	17.	Miami	13.6	C
				8.	Houston	15.1	B	18.	Rotterdam	13.6	C
				9.	**Vancouver**	**15.1**	**B**	19.	Barcelona	11.9	D
				10.	Toronto	15.0	B	20.	Shanghai	n.a.	
Immigrant population # metro areas ranked: 20	The proportion of the total population who were foreign-born in 2016, except Rotterdam (2015) and Manchester (2011).	Immigration is key to boosting the future workforce. Immigrants are attracted to tolerant and diverse metro	**Greater Vancouver** does very well on this indicator, landing in second place with an A grade, just behind top performer Toronto, a metro region whose population is almost half foreign born. Two other Canadian metro areas—Calgary and Montréal—	1.	Toronto	49.0	A	11.	Seattle	18.2	C
				2.	**Vancouver**	**44.7**	**A**	12.	Barcelona	17.2	C
				3.	Sydney	42.9	A	13.	Rotterdam	16.1	C
				4.	Miami	40.5	A	14.	Copenhagen	14.1	C
				5.	Los Angeles	33.6	B	15.	Portland	12.5	D

Social performance indicators	Definition	Significance	What about Greater Vancouver?	Grades							
		regions and regions that already boast a large immigrant population.	also land in the top 10. At the other end of the spectrum, six regions earn D grades, including Asian giants Hong Kong, Seoul, and Shanghai.	6.	Calgary	32.1	B	16.	Halifax	12.1	D
				7.	San Francisco	30.9	B	17.	Manchester	11.8	D
				8.	Montréal	25.6	B	18.	Hong Kong	8.4	D
				9.	Houston	23.5	C	19.	Seoul	3.5	D
				10.	Singapore	22.8	C	20.	Shanghai	1.2	D
Population with at least a bachelor's degree # metro areas ranked: 20	The percentage of the population aged 25 and over with at least a bachelor's degree in 2016, except Seoul, Singapore, and Copenhagen (2015) and Shanghai (2008).	Metro areas with a highly educated population are more attractive to other highly educated people.	**Greater Vancouver** ranks ninth, earning a C grade, as just over a third of Greater Vancouver's population aged 25 and over holds at least a bachelor's degree. Two regions—San Francisco and Copenhagen—get A grades, while Seattle follows closely behind with a B. The best-performing Canadian metro area is Toronto in seventh place with a B grade. Calgary finishes eighth one spot ahead of Vancouver. Montréal struggles on this indicator, earning a D grade.	1.	San Francisco	48.5	A	11.	Rotterdam	32.6	C
				2.	Copenhagen	47.8	A	12.	Halifax	32.1	C
				3.	Seattle	42.0	B	13.	Houston	32.0	C
				4.	Barcelona	40.5	B	14.	Seoul	30.7	C
				5.	Manchester	38.9	B	15.	Miami	30.5	C
				6.	Portland	38.9	B	16.	Montréal	28.7	D
				7.	Toronto	36.9	B	17.	Sydney	28.3	D
				8.	Calgary	36.0	B	18.	Singapore	28.2	D
				9.	**Vancouver**	**34.2**	**C**	19.	Hong Kong	25.1	D
				10.	Los Angeles	33.5	C	20.	Shanghai	22.7	D
				1.	Los Angeles	7.3	A	**11.**	**Vancouver**	**4.4**	**B**

Social performance indicators	Definition	Significance	What about Greater Vancouver?	Grades							
Cultural occupations* # metro areas ranked: 20	The proportion of the workforce employed in cultural occupations in 2016, except Barcelona, Manchester, Copenhagen, Shanghai, and Hong Kong (2015) and Rotterdam (2011).	This indicator is a proxy for access to culture. A metro area with a high proportion of cultural workers will be better able to attract people seeking "fun" places to live.	**Greater Vancouver** receives a B and places 11th on this indicator, with 4.4 per cent of its population employed in cultural occupations. It is the top-performing Canadian metro area. Three regions—Los Angeles, San Francisco, and Hong Kong—outshine the rest, garnering the only A marks. Shanghai, lagging well behind, is the only D-performing metro area.	2.	San Francisco	5.7	A	12.	Montréal	4.4	B
				3.	Hong Kong	5.7	A	13.	Manchester	4.3	B
				4.	Seattle	5.6	B	14.	Rotterdam	4.2	B
				5.	Barcelona	5.5	B	15.	Toronto	4.2	B
				6.	Portland	5.5	B	16.	Houston	3.5	C
				7.	Copenhagen	5.3	B	17.	Calgary	3.0	C
				8.	Seoul	5.2	B	18.	Halifax	2.7	C
				9.	Sydney	4.9	B	19.	Singapore	2.6	C
				10.	Miami	4.6	B	20.	Shanghai	0.8	D
Comfortable climate Index # metro areas ranked: 20	The comfortable climate index is a measure of how far the average maximum temperature strays from 15°C in the winter and from 25°C in the summer, adjusted for hours of sunshine. Data are averaged from 1971 to 2010.	Climate is an important factor in a metro area's attractiveness. Metro areas with mild weather and lots of sunny days score higher.	**Greater Vancouver** is the highest-ranked Canadian metro area on this indicator, coming in 12th place and earning a C grade. Calgary (13th), Halifax (14th), and Toronto (15th) are close behind. Not surprisingly, sun spots Barcelona, San Francisco, and Los Angeles occupy the top three spots, with A grades. Also receiving a mark of A are Shanghai, Houston, Portland, and Seoul. Copenhagen is at the bottom of	1.	Barcelona	16.2	A	11.	Seattle	69.2	B
				2.	San Francisco	21.4	A	12.	**Vancouver**	**100.0**	**C**
				3.	Los Angeles	27.4	A	13.	Calgary	101.5	C
				4.	Shanghai	44.2	A	14.	Halifax	105.9	C
				5.	Houston	50.6	A	15.	Toronto	109.6	C
				6.	Portland	53.3	A	16.	Rotterdam	110.9	C
				7.	Seoul	54.8	A	17.	Singapore	112.9	C
				8.	Sydney	59.6	B	18.	Manchester	121.8	C

Social performance indicators	Definition	Significance	What about Greater Vancouver?	Grades							
			the ranking and the only region to receive a D.	9.	Miami	59.9	B	19.	Montréal	135.3	C
				10.	Hong Kong	67.7	B	20.	Copenhagen	177.9	D
Homicide rate # metro areas ranked: 20	The number of homicides per 100,000 people. Data are an average of 2012–2016.	Metro areas with a low homicide rate offer a safe environment, making them more attractive.	With 1.7 homicides per 100,000 people, **Greater Vancouver** ranks in 12th place and earns an A grade. Two Asian metro areas—Singapore and Hong Kong—stand at the top of the field, with under one homicide per 100,000 people. Asian tigers Shanghai and Seoul also receive A grades. In contrast, U.S. metro areas do poorly, with all except Seattle placing outside the top 10. Even worse, the bottom four regions, including the only three to earn D grades, are American.	1.	Singapore	0.3	A	11.	Seoul	1.7	A
				2.	Hong Kong	0.5	A	**12.**	**Vancouver**	**1.7**	**A**
				3.	Shanghai	0.6	A	13.	Portland	1.8	A
				4.	Barcelona	0.7	A	14.	Halifax	2.1	B
				5.	Seattle	0.7	A	15.	Calgary	2.1	B
				6.	Copenhagen	1.0	A	16.	Sydney	3.1	B
				7.	Montréal	1.1	A	17.	Los Angeles	4.8	C
				8.	Manchester	1.4	A	18.	San Francisco	5.3	D
				9.	Toronto	1.4	A	19.	Houston	6.3	D
				10.	Rotterdam	1.6	A	20.	Miami	6.5	D
Travel to work: transit, walking, and another non-auto commuting	The proportion of the employed labour force that did not drive to work in 2016, except Singapore and Seoul (2015) and Barcelona and Manchester (2011). Data were not	A metro area with a high proportion of non-car commuters is more sustainable. A region that	Four Asian metro areas—Hong Kong, Seoul, Singapore, and Shanghai—top the list on this indicator, earning A grades. **Greater Vancouver** places in the middle of the pack, in eighth place with a C grade. U.S. metro areas dominate the lower half of	1.	Hong Kong	90.0 [U]	A	11.	San Francisco	27.5	C
				2.	Singapore	80.2 [U]	A	12.	Halifax	22.3	D
				3.	Seoul	77.0 [U]	A	13.	Calgary	22.1	D
				4.	Shanghai	74.8	A	14.	Seattle	16.9	D
				5.	Barcelona	44.5	B	15.	Portland	13.9	D

Social performance indicators	Definition	Significance	What about Greater Vancouver?	Grades							
# metro areas ranked: 18	available for Copenhagen and Rotterdam.	offers access to good public transit, bike paths, and walking paths, will be more attractive.	the list, accounting for five of the seven D grades. Houston ranks last, with only 5.1 per cent of its population not driving a car when travelling to work.	6. Sydney	33.9	C	16. Los Angeles	10.4	D
				7. Toronto	32.0	C	17. Miami	7.8	D
				8. Vancouver	**30.7**	**C**	18. Houston	5.1	D
				9. Montréal	30.3	C	19. Copenhagen	n.a.	
				10. Manchester	28.8	C	20. Rotterdam	n.a.	
Commuting time # metro areas ranked: 19	Calculated as the average time (in minutes) of a trip to and from work in 2017 for Seoul, in 2016 for Canadian metro areas, in 2015 for U.S. metro regions, Sydney, Copenhagen and Shanghai, 2013 in Hong Kong, and in 2011 in Barcelona. Data were not available for Rotterdam.	The lower the commute time to work, the more attractive the metro area.	Hong Kong dwarfs the competition in this indicator, earning one of two A grades. With a 22-minute round-trip commute, Hong Kongers spend less than half as much time commuting to work as do residents of third-place finisher Halifax. **Greater Vancouver** ranks ninth and earns a B grade. In terms of its Canadian competitions, it places ahead of Montréal (11th) and Toronto (15th). Three Asian metro regions—Singapore, Seoul and Shanghai—rank at the bottom.	1. Hong Kong	22.0	A	11. Montréal	60.0	B
				2. Copenhagen	38.0	A	12. Houston	60.4	B
				3. Halifax	48.0	B	13. Seattle	60.5	B
				4. Calgary	53.0	B	14. San Francisco	66.4	C
				5. Portland	53.1	B	15. Toronto	68.0	C
				6. Manchester	54.0	B	16. Sydney	70.0	C
				7. Barcelona	54.4	B	17. Singapore	80.0	C
				8. Miami	58.3	B	18. Seoul	80.0	C
				9. Vancouver	**59.4**	**B**	19. Shanghai	102.0	D
				10. Los Angeles	60.0	B	20. Rotterdam	n.a.	
Housing affordability	The ratio (expressed as a decimal) of the median house price to the gross	Housing affordability is a particularly	**Greater Vancouver** performs very poorly in this indicator, earning a C grade and placing	1. Halifax	3.4	A	11. San Francisco	9.1	B
				2. Houston	3.7	A	12. Los Angeles	9.4	B

Social performance indicators	Definition	Significance	What about Greater Vancouver?	Grades							
# metro areas ranked: 16	annual median household income. Metro areas where house prices are higher can perform well if the level of income in that metro area is also relatively high. Data are based in the year 2017. Data were not available for Seoul, Shanghai, Barcelona, Rotterdam, and Copenhagen.	important factor when deciding where to live. However, high income levels may compensate for high house prices. Regions with affordable housing receive the best grades.	13th among 15 comparator regions. Only Sydney and Hong Kong finish lower. In contrast, three Canadian metro areas—Halifax, Calgary, and Montréal—rank in the top five and earn A grades. Canada's financial capital, Toronto, tops the B ratings, finishing in 10th spot.	3.	Calgary	4.1	A	**13.**	**Vancouver**	**12.6**	**C**
				4.	Montréal	4.5	A	14.	Sydney	12.9	C
				5.	Manchester	4.6	A	15.	Hong Kong	19.4	D
				6.	Singapore	4.8	A	16.	Shanghai	n.a.	
				7.	Portland	5.5	A	17.	Seoul	n.a.	
				8.	Seattle	5.9	A	18.	Barcelona	n.a.	
				9.	Miami	6.5	A	19.	Rotterdam	n.a.	
				10.	Toronto	7.9	B	20.	Copenhagen	n.a.	
Income inequality # metro areas ranked: 20	Income inequality is defined using the Gini coefficient. The Gini coefficient represents the income distribution of a metro area. A Gini coefficient of 0 represents perfect income equality (that is, every person in the society has the same amount of income). A Gini coefficient of 1 represents perfect inequality (that is, one person has all the	The higher the income inequality, the lower the ranking a metro area receives.	European metro areas dominate the field in this indicator, as they earn three out of four A grades. The only European to not receive an A is Copenhagen, which instead gets a B. **Greater Vancouver** is a middle-of-the-pack performer, placing eighth and earning a B grade. Among its Canadian counterparts, only Montréal has less income inequality. U.S. metros San Francisco, Houston, Los Angeles, and	1.	Manchester	0.33	A	11.	Toronto	0.42	B
				2.	Rotterdam	0.34	A	12.	Portland	0.45	C
				3.	Seoul	0.35	A	13.	Seattle	0.46	C
				4.	Barcelona	0.35	A	14.	Singapore	0.46	C
				5.	Montréal	0.39	B	15.	Shanghai	0.47	D
				6.	Copenhagen	0.39	B	16.	San Francisco	0.48	D
				7.	Sydney	0.41	B	17.	Houston	0.49	D

Social performance indicators	Definition	Significance	What about Greater Vancouver?	Grades							
	income and the rest of the society has none). Data are based on the year 2015 for Canadian metro areas and on the year 2016 for all others.		Miami occupy four out of the bottom five spots.	**8.**	**Vancouver**	**0.41**	**B**	18.	Hong Kong	0.49	D
				9.	Halifax	0.42	B	19.	Los Angeles	0.50	D
				10.	Calgary	0.42	B	20.	Miami	0.51	D
Air quality # metro areas ranked: 20	Air quality is measured as the average accumulation of fine particulate matter that is 2.5 microns in diameter and less ($PM_{2.5}$). Units are in milligrams per cubic metre (mg/m^3). Data are based on the year 2013 for Canadian and European metro areas and on the year 2014 for all others.	High pollution levels may lead to health problems for a region's residents. Metro areas with good air quality are more attractive.	**Greater Vancouver** has the fourth cleanest air among the 20 comparator regions in the Scorecard, good enough for an A grade. Canadian metro areas establish a high standard when it comes to clean air, with all five receiving A grades. At the other end of the spectrum, four Asian metro regions—Singapore, Seoul, Hong Kong, and Shanghai—place in the bottom four, with the latter three garnering D grades.	1.	Halifax	5.0	A	11.	Houston	10.0	A
				2.	Seattle	6.0	A	12.	Copenhagen	11.0	A
				3.	Miami	6.0	A	13.	Los Angeles	11.0	A
				4.	**Vancouver**	**7.0**	**A**	14.	Manchester	13.0	B
				5.	Portland	7.0	A	15.	Rotterdam	15.0	B
				6.	Sydney	8.0	A	16.	Barcelona	15.0	B
				7.	Toronto	8.0	A	17.	Singapore	18.0	C
				8.	Calgary	9.0	A	18.	Seoul	24.0	D
				9.	San Francisco	9.0	A	19.	Hong Kong	29.0	D
				10.	Montréal	10.0	A	20.	Shanghai	52.0 [U]	D
Age dependency ratio	This ratio is calculated by dividing the population of those typically not in the labour force (those aged 0–14 and 65+) by the	A high dependency ratio suggests there are not enough people	**Greater Vancouver** ranks seventh but still only earns a C grade. The area is known as a magnet for retirees, given its mild climate, so a lower grade is	1.	Shanghai	28.5	A	11.	Los Angeles	46.1	C
				2.	Seoul	34.0	A	12.	Montréal	47.3	D
				3.	Hong Kong	37.3	B	13.	Portland	47.8	D

Social performance indicators	Definition	Significance	What about Greater Vancouver?	Grades							
# metro areas ranked: 20	population typically in the labour force (those aged 15-64). It is used to measure the pressure on the productive population. Data are based on the year 2016, except for European metro areas and Shanghai (2015) and Seoul (2014).	of working age to support the dependent population. These pressures on the productive population may force governments to raise taxes, thus making a metro region less attractive.	not a big surprise. Asian metro areas dominate the top of the rankings, while European areas cluster near the bottom. These results are not surprising either.	4.	Singapore	38.0	B	14.	Sydney	48.4	D
				5.	Calgary	40.2	B	15.	Houston	49.0	D
				6.	Halifax	41.7	C	16.	Rotterdam	51.1	D
				7.	**Vancouver**	**42.2**	**C**	17.	Copenhagen	51.4	D
				8.	Toronto	43.6	C	18.	Barcelona	52.6	D
				9.	Seattle	45.2	C	19.	Miami	53.0	D
				10.	San Francisco	45.8	C	20	Manchester	53.5	D
Female participation rate # metro areas ranked: 19	The female participation rate measures the proportion of the female working-age population (those aged 15+) active in the labour market (either working or actively looking for work). Data are for 2016, except for Manchester (2015), U.S. metro areas, Barcelona and Rotterdam (2014), and Copenhagen	A higher female workforce participation rate suggests a metro region encourages female participation in the economy and, more generally, supports progressive gender policies.	All the Canadian metro areas, including **Greater Vancouver**, rank highly in female workforce participation. Several factors likely explain why this ratio is elevated in Canada, not least of which is the country's generous maternity leave policy. U.S. metro areas show mixed results, while European and Asian cities tend to rank in the bottom half.	1.	Calgary	68.2	A	11.	Houston	58.8	C
				2.	Halifax	63.3	B	12.	Portland	58.5	C
				3.	Montréal	62.1	B	13.	Miami	56.6	D
				4.	Toronto	61.7	B	14.	Los Angeles	56.3	D
				5.	**Vancouver**	**61.2**	**B**	15.	Barcelona	55.5	D
				6.	Sydney	60.5	C	16.	Rotterdam	55.2	D
				7.	Singapore	60.4	C	17.	Manchester	55.1	D
				8.	Seattle	60.3	C	18.	Hong Kong	54.8	D
				9.	San Francisco	60.2	C	19.	Seoul	54.2	D

Social performance indicators	Definition	Significance	What about Greater Vancouver?	Grades							
	(2012). Data were not available for Shanghai.			10.	Copenhagen	59.4	C	20	Shanghai	n.a.	
Public transit railway network length in km # metro areas ranked: 20	This indicator is the total length of the public transit railway network in km. Data are for 2017.	This indictor allows us to evaluate the quality of each metro area's public transit system. A region with a more extensive public transit system will be, everything else being equal, more attractive.	**Greater Vancouver** performs poorly on this indicator, ranking 14th with a D grade. The SkyTrain network is 80 km long, far below that of leader Sydney. Toronto is the Canadian leader, ranking third with a B grade. Halifax ranks last.	1.	Sydney	974	A	11.	Los Angeles	178	D
				2.	Shanghai	675	B	12.	Rotterdam	174	D
				3.	Toronto	603	B	13.	Portland	97	D
				4.	Seoul	338	C	**14.**	**Vancouver**	**80**	**D**
				5.	Manchester	332	C	15.	Montréal	69	D
				6.	Copenhagen	272	C	16.	Calgary	60	D
				7.	Hong Kong	249	C	17.	Miami	39	D
				8.	San Francisco	239	D	18.	Houston	38	D
				9.	Singapore	207	D	19.	Seattle	35	D
				10.	Barcelona	190	D	20	Halifax	0.0	D
EIU democracy index # metro areas ranked: 20	The democracy index, compiled by the Economist Intelligence Unit, measures the state of democracy in 167 countries. The index is based on 60 indicators in five different categories measuring pluralism, civil	Metro areas in countries with full democracies are more attractive to people than those with flawed democracies or	The results of this ranking should not be a surprise. European and North American metro regions do well, while Asian metro regions lag, with Shanghai ranking last. **Greater Vancouver** is tied for first with its Canadian counterparts and	1.	Copenhagen	9.22	A	11.	Seoul	8.00	A
				2.	Toronto	9.15	A	11.	San Francisco	7.98	A
				2.	Montréal	9.15	A	11.	Los Angeles	7.98	A
				2.	**Vancouver**	**9.15**	**A**	11.	Portland	7.98	A
				2.	Halifax	9.15	A	11.	Seattle	7.98	A
				2.	Calgary	9.15	A	11.	Miami	7.98	A

Social performance indicators	Definition	Significance	What about Greater Vancouver?	Grades							
	liberties, and political culture. Data are from the 2017 report.	authoritarian regimes.	Copenhagen, all of which earn A grades.	7.	Sydney	9.09	A	17.	Houston	7.98	A
				8.	Rotterdam	8.89	A	18.	Singapore	6.32	B
				9.	Manchester	8.53	A	19.	Hong Kong	6.31	B
				10.	Barcelona	8.08	A	20	Shanghai	3.10	D
Change in housing affordability (2017 index minus 2012 index) # metro areas ranked: 15	This indicator subtracts the 2017 housing affordability index by the 2012 housing affordability index, so it measures how much affordability has changed over the most recent five-year period for which data are available. Data were missing for Shanghai, Copenhagen, Rotterdam, Barcelona, and Manchester.	Metro areas showing an improvement in affordability are more attractive to people than those showing a deterioration in affordability.	**Greater Vancouver** ranks 12th among the group of 15 metro regions featured in this indicator and garners a D grade. Only L.A., Sydney, and Hong Kong have seen a bigger deterioration in housing affordability over the last five years. Five metro areas showed an improvement in housing affordability between 2012 and 2016, including first-place Singapore and two Canadian areas—Montréal and Calgary.	1.	Singapore	-1.1	A	11.	Toronto	2.0	C
				2.	Montréal	-0.6	A	**12.**	**Vancouver**	**3.1**	**C**
				3.	Calgary	-0.2	A	13.	Los Angeles	3.2	C
				4.	Manchester	-0.2	A	14.	Sydney	4.6	D
				5.	Halifax	-0.1	A	15.	Hong Kong	5.9	D
				6.	Houston	0.7	B	16.	Shanghai	n.a.	
				7.	Seattle	1.1	B	17.	Copenhagen	n.a.	
				8.	Portland	1.2	B	18.	Rotterdam	n.a.	
				9.	San Francisco	1.3	B	19.	Barcelona	n.a.	
				10.	Miami	2.0	B	20	Manchester	n.a.	

Sources: Australia Census 2011; Statistics Australia; University of Canberra; Statistics Canada; Statistics Canada Census 2011; National Household Survey 2011; 2013 Canadian Income Survey; U.S. Bureau of Labor Statistics; Moody's Economy.com; American Community Survey; Eurostat; Office for National Statistics; Euromonitor International; Shanghai Statistical Yearbook; Government of Hong Kong; Hong Kong Census; Weather Network; Demographia International; The Economist; World Health Organization; Singapore Ministry of Manpower; Statistics Singapore; Singapore Census 2010; Korean Statistical Information Service; Chemosphere; Elsevier; Statistics Denmark; INRIX; 2thinknow; The Economist Intelligence Unit.

Social performance indicators	Definition	Significance	What about Greater Vancouver?	Grades
*Occupational data from the U.S. Bureau of Labor Statistics were partially secure for some metro areas. Data were either missing or not available for various occupational categories. Therefore, the rankings for U.S. metropolitan statistical areas are underestimated.				
U The metro area was considered an outlier and was thus removed when calculating the grades.				

7. Special Lens on Regional Coordination and Governance: Background

Chapter Summary

- Fast growth in large urban areas has led to urban sprawl, which increases the cost of municipal services.
- Diverging interests among municipal governments in metropolitan areas tend to increase friction and complicate coordination of services across jurisdictions.
- Thus, urbanization has made regional coordination and governance front-burner issues.
- Complicating things, municipal governments in Canada are usually fiscally and politically handcuffed.

The first two editions of the scorecard have painted a generally positive portrait of Greater Vancouver's socio-economic performance, but they have also drawn attention to several significant challenges facing Greater Vancouver, including poor housing affordability, lacklustre attraction of head offices, underinvestment in public transit and road infrastructure, and a lack of available land for port and other industrial expansion. As stressed in the 2016 scorecard and confirmed here, Greater Vancouver's longer-term performance hinges on the ability of its leaders to deal with these important challenges. In other words, Greater Vancouver cannot afford to rest on its laurels.

The 2016 report argued that greater regional coordination among the municipalities that make up Greater Vancouver is a prerequisite for successfully addressing these challenges. Put another way, local government fragmentation and related governance and service delivery issues remain obstacles to enhancing Greater Vancouver's socio-economic performance. Indeed, one of the shared characteristics of many of these challenges is that they are not specific to a single municipality—but affect the entire region. Common goals should provide an incentive for the municipalities that make up Greater Vancouver to act in a more coordinated manner, but unfortunately, coordinated actions have tended to be the exception rather than the rule.

Improved intermunicipal cooperation could help address some of Greater Vancouver's biggest challenges, but it would also allow Greater Vancouver to present a united face to the rest of the world. For example, jointly pursuing (rather than competing for) foreign investment attraction would likely increase the chances of success, while also greatly reducing duplication of effort and saving resources. The need for such a strategy is becoming increasingly apparent as globalization increases competition among the world's countries and the metro regions within them.

These regional coordination and governance issues were only touched upon in Scorecard 2016. But given their vital importance, the special lens in this edition of the scorecard is focused solely on this topic. Specifically, we identify the mix of solutions best suited to tackle Greater Vancouver's regional coordination and service delivery issues and suggest a set of best municipal governance practices to encourage their implementation. Accordingly, we examine the tools that have been used in other metropolitan regions to improve government coordination and governance, and assess their relevance

to Greater Vancouver. The special lens also includes a benchmarking analysis that ranks Greater Vancouver against seven other North American metro regions with indicators that measure, or proxy, good governance enablers and municipalities' ability to cooperate within a metropolitan area. The section concludes with a description of best practices that should be considered when reforming local governance structures and practices.

7.1 Urbanization

Urbanization—the movement of people from rural to urban areas—is a long-term trend that continues in most developing and developed countries, including in Canada. Urbanization is driven by both push and pull factors: the decline of agricultural employment has pushed people to move to urban areas to seek work, while at the same time people have been pulled to cities to take advantage of greater social and economic opportunity.

Within urbanization, we also note another trend—larger cities are typically growing faster than smaller ones. The advantages that cities provide both people and firms, which are collectively referred to as agglomeration economies, are stronger in larger metropolitan regions and tend to outweigh the challenges presented by living and operating in dense, urban areas. For instance, large urban areas typically offer better access to education programs, employment opportunities, health care, cultural activities, and amenities than smaller urban centres. Businesses, in turn, value the benefits of access to a sizable pool of workers, including those with highly specialized skills. Businesses that locate in a large metropolitan region greatly increase their chances of finding qualified workers.

At the same time, firms in the same industry tend to form clusters to collectively benefit from sharing ideas, skilled workers, suppliers, and infrastructure. Put another way, clustering reduces transportation costs by locating these factors of production close to one another. Like other agglomeration economies, the collective benefits of clustering are more likely to be achieved in larger urban areas than in smaller ones. Cities are thus the best way for people and businesses to connect.

Interestingly, the benefits of clustering and of living and locating in large metropolitan areas appear to be accelerating. This is linked to the information and communications technology (ICT) revolution and rise of the knowledge-based economy. Knowledge-based industries, which include those that are directly based on the production, distribution, and use of knowledge and information, are even more prone to clustering than other industries since they rely so heavily on knowledge transmission. One of the counterintuitive properties of knowledge transmission in the ICT and other knowledge-based industries is that it depends strongly on geographical proximity and face-to-face contacts between individuals, despite the fact technological advances have made it easier and cheaper to communicate across the world.[6]

[6] Miguélez, Moreno, and Artís, "Does Social Capital Reinforce Technological Inputs in the Creation of Knowledge?" 7.

The growing importance of the knowledge economy means that jobs are becoming more cognitive in nature, giving metro regions with large pools of skilled workers a clear advantage. Put another way, "the presence of highly skilled individuals—tied to the availability of higher education and the ability to attract highly skilled migrants—attracts firms, which in turn attracts more high-skilled individuals, creating a virtuous circle."[7]

There is another trend driving stronger economic and population growth in large metropolitan areas, particularly those in Canada—immigration. Immigration is Canada's main source of population growth, far exceeding natural increase (births minus deaths). Immigrants to Canada tend to settle in the big three urban centres—Toronto, Vancouver, and Montréal—because of job opportunities, social networks, and cultural amenities. This has created a positive feedback loop; previous immigrants attract new immigrants from the same ethnic communities, since their presence makes adapting to life in Canada easier. Moreover, the combination of an aging population and a low birth rate means immigration's contribution to population growth will only increase in the coming years, tipping the scales even further in favour of Canada's large metropolitan areas.

Unsurprisingly, therefore, North American metropolitan areas have seen impressive growth over the last three decades. Between 1990 and 2016, Calgary's population almost doubled, while the populations of Vancouver and Toronto increased by more than half, and the populations of Halifax and Montréal increased by roughly one-quarter. In comparison, the rest of Canada's population (excluding these five metro areas) increased by 21.5 per cent over the same period. (See Table 12.) In the United States, metropolitan statistical areas such as Seattle, Portland, and San Francisco boasted population growth of 48.4, 59.1, and 26.9 per cent, respectively, between 1990 and 2016, while the country's total population advanced by about 30 per cent. (See Table 13.)

Table 12

Metropolitan Population Growth in Canada, 1990–2016

Metropolitan area	Cumulative population growth (per cent)
Calgary	96.1
Vancouver	58.6
Toronto	56.4
Halifax	28.0
Montréal	24.2
Rest of Canada	**21.5**
Total Canada	**31.1**

Source: Statistics Canada; The Conference Board of Canada.

[7] Diaz, *Reinventing the West*, 9.

In most of these metro areas, the main source of population growth has been shifting from natural increase to migration (international, intercity, and interprovincial or interstate), a trend that reinforces the suggestion that these metro regions offer more and better opportunities.

Table 13

Metropolitan Population Growth in the United States, 1990–2016

Metropolitan area	Cumulative population growth (per cent)
Portland	59.1
Seattle	48.4
San Francisco	26.9
United States	**29.6**

Source: U.S. Census Bureau; The Conference Board of Canada.

Such rapid population increases are indicative of economic prosperity, because favourable conditions attract people and firms. More colloquially, people and firms tend to "vote with their feet." Indeed, the metropolitan areas examined here have, for the most part, enjoyed solid real GDP increases over the last 15 years. In particular, Portland, Vancouver, and Calgary have posted annual real GDP expansions of 4.0, 3.1, and 2.7 per cent, on average, since 2001. (See tables 14 and 15.) Only Halifax and Montréal lag the national average. The development of economic hubs and specialized clusters has generally supported the strong economic performances. As discussed in Scorecard 2016, Vancouver is, among other things, a transportation and high-tech hub. Meanwhile, Toronto is a leader in the financial industry, San Francisco attracts players in the new media and technology industries, Seattle is recognized for its aerospace and communications clusters, and Portland is a leader in clean-tech and athletic and outdoor apparel design.

Table 14

Metropolitan Real GDP Growth in Canada, 2001–16

Metropolitan area	Average annual real GDP growth (per cent)
Vancouver	3.1
Calgary	2.7
Toronto	2.2
Halifax	1.7
Montréal	1.5
Rest of Canada	**1.8**
Canada	**2.0**

Source: The Conference Board of Canada.

Table 15
Metropolitan Real GDP Growth in the United States, 2001-16

Metropolitan area	Average annual real GDP growth (per cent)
Portland	4.0
Seattle	2.6
San Francisco	2.2
United States	**1.8**

Source: U.S. Bureau of Economic Analysis; The Conference Board of Canada.

The labour market data tell a similar story; these areas feature strong labour force growth and low unemployment rates, the hallmarks of healthy and dynamic labour markets. (See tables 16 and 17.)

Table 16
Metropolitan Employment Indicators in Canada, 1990–2016

Metropolitan area	Labour force growth (annual average, %)	Employment growth (annual average, %)	Unemployment rate (1990, %)	Unemployment rate (2016, %)
Calgary	2.9	2.8	6.9	9.4
Vancouver	1.9	1.9	7.2	5.4
Toronto	1.7	1.6	5.2	7.0
Montréal	1.1	1.2	10.1	7.6
Halifax	1.1	1.2	8.3	6.2
Rest of Canada	**0.9**	**1.0**	**8.7**	**7.4**
Canada	**1.2**	**1.3**	**8.2**	**7.0**

Source: Statistics Canada; The Conference Board of Canada.

Table 17
Metropolitan Employment Indicators in the United States, 1990–2016

Metropolitan Area	Labour force growth (annual average, %)	Employment growth (annual average, %)	Unemployment rate (1990, %)	Unemployment rate (2016, %)
Portland	1.7	1.7	4.5	4.7
Seattle	1.5	1.5	4.0	4.5
San Francisco	0.9	0.9	3.5	3.8
United States	**0.9**	**1.1**	**5.6**	**4.9**

Source: U.S. Bureau of Labour Statistics; The Conference Board of Canada.

7.2 Service Delivery Issues

Now that we have outlined the main factors underpinning the rise of large metropolitan areas, we turn our attention to how such growth affects local government service delivery and, in turn, how governance and service delivery are related.

7.2.1 The Cost of Urban Sprawl

The widespread adoption of the automobile allowed most cities to respond to population growth pressures by sprawling. The automobile, along with widespread investments in road infrastructure, also affected the way new areas were developed—it made longer commutes possible and encouraged low-density developments increasingly distant from city centres.

Urban sprawl has many negative consequences. Along with posing environmental, social, and economic challenges, it also increases the costs of delivering municipal services, such as public transportation, waste collection, firefighting and policing, and road planning. By definition, urban sprawl and low-density housing increase the land area per capita, putting strain on local governments tasked with delivering services to its citizens. What's more, unplanned or uncontrolled sprawl makes service delivery more costly and inefficient. Additionally, major improvements in public transportation are hard and expensive to achieve in low-density areas because such areas lack the critical mass of users to make them financially viable. Low density areas also face higher costs to build, expand, maintain, and repair infrastructure.

7.2.2 Intermunicipal Coordination Issues

The growth and expansion of cities also has consequences specific to metropolitan areas—regions that consist of a dense urban core and less populated surrounding areas that collectively form a contiguous whole. Most metropolitan areas are not single political entities, since local government boundaries are difficult to alter. Instead, they often are made up of multiple individual municipalities, each with its own governing body, bylaws and regulations, and political agendas. Such diffuse governance can lead to the fragmentation in the delivery of public services.

While fostering intermunicipal coordination may seem simple in theory, it has been much more difficult in practice. Competition and mistrust between governing bodies is a common stumbling block. Moreover, positive and negative spillover effects of cooperation efforts are often difficult to predict, especially in terms of size and location. Municipal governments are understandably reluctant to subsidize another municipality's services by paying more for a service than their population share warrants. After all, each municipality's first responsibility is to provide services to its own citizens.

All told, diverging interests among municipal governments in any metropolitan area tend to increase friction and complicate coordination of service delivery. However, local governments' wish to remain independent and autonomous is understandable because proximity to voters should make local governments more responsive to their constituents' requirements than centralized authorities. In practice, however, proximity does not always equate with responsiveness, as populations in larger municipalities are typically more diverse, making it harder to find "one-size-fits-all" solutions for local governments' responsibilities in service delivery, policy-making, legislation, and regulatory enforcement.

That said, a strong case can be made that certain key municipal responsibilities should be coordinated within a metropolitan area, with one compelling reason being the fact that the political borders of individual local governments rarely coincide with a metropolitan region's effective economic

boundaries. The mismatch between political and economic boundaries, which is reflected in a growing number of commuters, often leads to a mismatch between where people pay taxes and where they benefit from local government services and infrastructure. For instance, individuals living in Surrey and commuting to downtown Vancouver pay property taxes only to the City of Surrey despite consuming local public services and infrastructure in Vancouver. This situation is repeated every day across all municipalities that make up Greater Vancouver, and this growing economic integration suggests that some form of municipal services coordination is warranted.

7.2.3 Lack of Municipal Power

A related governance issue for Canadian municipalities is that the revenue tools they have access to is severely constrained, making it difficult for them to cover the rising cost of delivering services to fast-growing populations. Canadian municipalities rely heavily on property taxes and user fees to cover the services they are required to provide. This discrepancy between Canadian municipalities' ability to raise revenues and their requirement to pay for services, along with the fact that they are prohibited from running operating deficits, often leaves them cash-strapped. Indeed, Canadian cities can only look in envy at cities in the United States and other OECD nations that have access to a wider array of revenue sources.[8]

Higher-level governments have also been known to complicate municipalities' fiscal situation. In both Canada and the United States, municipal governments are politically subservient to the provinces and states. This enables states and provinces to offload responsibilities to municipalities. Such downloading can include the responsibility to enforce provincial regulations or to maintain infrastructure. Higher-level governments also have the power to amalgamate or de-amalgamate municipalities, without requiring approval from citizens or local governments, although using this power can be politically risky.

Canada's current fiscal arrangement is based on a 19th-century architecture and grows out of a rural experience. It is long past time to give cities the power and resources they need for success. The Conference Board has long recommended that cities be granted a greater mix of fiscal tools that more closely match their responsibilities.[9] At a minimum, there needs to be better alignment between cities' spending responsibilities and their access to revenue. Of course, changes to municipal funding arrangements can have important ramifications for businesses and economic development and should thus be undertaken with extreme care.

7.2.4 Summary

With all this in mind, this special lens focuses on solutions that local governments and higher-level governments use to address the service delivery issues discussed above. In particular, we assess the three most common tools used globally to improve metropolitan service delivery: centralization, private sector engagement, and intermunicipal cooperation.

[8] Slack, *Revenue Sharing Options for Canada's Hub Cities*, 3.
[9] Brender, Cappe, and Golden, *Mission Possible: Successful Canadian Cities*, 101.

This leads us to an important point. Whether implementing any of these tools results in success or failure will largely depend upon the quality of the municipal governance structures that are in place. Governance can be defined as "the process by which public decisions are made, the mobilization of public and private resources to implement them, and the evaluation of their substantive outcomes."[10] Therefore, our focus on service delivery also necessitates a focus on governance. We identify a set of best local governance principles that, based on our analysis, will lead to better service outputs, independent of the tools that are chosen to improve service provision and delivery. In short, good governance is a necessary condition for efficient service delivery.

More precisely, in Chapter 8 we explore the advantages and disadvantages of solutions to municipal servicing issues. In Chapter 9, we assess the current governance situation and issues in Greater Vancouver. Chapter 10 benchmarks Greater Vancouver's good governance enablers and describes local governance best practices.

[10] Taylor, "Good Governance at the Local Level: Meaning and Measurement," 3.

8. Special Lens on Regional Coordination and Governance: Current Practices in Service Provision and Delivery

Chapter Summary

- This chapter presents three different solutions to improve service provision and delivery, as well as the arguments for and against their implementation.
- Despite its theoretical upsides, service centralization through amalgamation does not appear to work out in practice.
- Private outsourcing of services and public-private partnerships can be a cost-saving solution to municipal service provision and delivery, but competition and oversight are essential.
- Intermunicipal cooperation can offer both local autonomy and regional vision, but cross-jurisdictional competition hinders widespread use of this solution in Canada.

8.1 Centralization of Services

A common solution to the service provision and delivery problems examined in the previous chapter is to centralize municipal services under a single authority. This is sometimes achieved by merging the underlying jurisdictions of a given metropolitan area, creating one single political entity, a process known as amalgamation.[11] This practice was at one point particularly dominant in Canada, with provincial governments instituting amalgamation programs between the 1960s and 2002. In many cases, the results were disappointing, and some municipalities were de-amalgamated. Yet the concept has some strengths, which we explore here.

8.1.1 Arguments for Centralization Through Amalgamation

The potential benefits from amalgamation seem straightforward. First, it saves money on service provision, delivery, and overall government cost. Second, it reduces political friction in decision-making since only one government makes choices. Third, a single jurisdiction eliminates the requirement to coordinate service delivery across borders. And, finally, a single, larger political entity carries more weight when dealing with higher-tier governments.

Proponents argue that amalgamation lowers the cost of delivering municipal services because one centralized municipal government can take advantage of economies of scale. This is the economic concept that as the scale of production increases, the average cost of production decreases, albeit up to a certain point. Economies of scale mainly result from the spreading of fixed production costs over a larger output but may also be due to a reduction of variable costs per unit thanks to operational efficiencies. In fact, studies have identified economies of scale in local government services such as

[11] Annexation is a special case of amalgamation. Because of the prevalence of amalgamation in Canada, we focus on the broader concept of amalgamation.

water, sewage, and transportation networks, resulting in a higher quality of service delivered per dollar spent.[12]

In theory, amalgamation should also reduce costs because it reduces overlap—a single political division requires fewer elected officials and public servants than multiple divisions require. Reduced municipal staffing hinges on the idea that bordering municipalities usually offer similar or identical basic services, and thus a larger municipality can cut work and effort duplication. This leads to lower payroll and compensation costs, which account for a significant share of municipal governments' expenses.

Amalgamated governments can also save money and effort because their constituent municipalities no longer compete with neighbouring municipalities for funding or investment. To attract investment, individual municipalities may feel the need to keep taxes and other fees below break-even levels, which can be detrimental in the long term. Instead, by pooling their efforts, amalgamated municipalities may be more successful in attracting investment and promoting economic development across a larger region.[13]

Amalgamation may also have non-monetary benefits, such as boosting social equity by widening the tax base. Such a wider tax base would result in a more even distribution of the per capita costs of municipal services, which are usually high in low-density areas and low in high-density areas. In the same vein, spillover effects—where citizens of neighbouring municipalities "free ride" on services and amenities they do not financially support, often at the expense of the larger central municipality with the larger tax base—would be eliminated in an amalgamated area, since all taxes and services are collected and delivered by a single governing authority. Indeed, amalgamation has been touted as a way to "internalize the […] divergence […] of where citizens earn their income and where they consume services."[14]

In addition, proponents of amalgamation argue that a fragmented municipal structure in a metro area inevitably leads to complex relationships between governing bodies, resulting in less accountability, a lack of transparency, and less accessibility for citizens. A single governing entity makes it easier for citizens to hold their representatives accountable.

8.1.2 Arguments Against Centralization Through Amalgamation

Notwithstanding all the theoretical arguments in favour of amalgamation, municipal consolidation often looks different in practice. Most of the literature argues that realized cost savings from amalgamation are frequently offset by factors intrinsic to amalgamation.[15] For example, amalgamation often results in upward harmonization, which occurs when all previously independent municipalities are brought up to the same servicing standards, resulting in higher costs.[16] This outcome should not come as a surprise

[12] Vojnovic, *Municipal Consolidation in the 1990s*, 8.
[13] Ibid., 18.
[14] Courchene, "Ontario as a North American Region-State, Toronto as a Global City-Region: Responding to the NAFTA Challenge," 180.
[15] McDavid, "The Impacts of Amalgamation"; Derksen, "Municipal Amalgamation."
[16] Sharma, *The Paradox of Amalgamation*, 25.

since citizens and their elected officials would not accept a decrease in the quantity and quality of services after amalgamation. Accordingly, all previously independent municipalities now receive the highest pre-amalgamation service level and quality, defeating consolidation's cost-saving goal. In addition, wages and salaries of local officials and civil servants also tend to harmonize upwards. This also makes sense, as workers in the highest-paying, pre-amalgamation jurisdiction would strenuously resist taking a pay cut. Instead, workers in the other municipalities would get raises.

In other cases, authors have found that economies of scale for certain services were realized only at low population thresholds. For example, a study of police and fire protection costs in amalgamated Ontario municipalities found costs were at their lowest with populations of 50,000 and 20,000 people, respectively.[17] An OECD study found that the per unit cost for most services remains constant above 150,000 individuals.[18]

Other critics note that that a single, larger political unit is in fact less accessible and accountable and that each underlying municipality loses autonomy and thus part of its ability to serve its constituents.[19] Similarly, it has been shown that reduced competition between adjacent municipalities, stemming from amalgamation, "weakens incentives for efficiency and responsiveness" and reduces constituents' ability to vote with their feet.[20]

These conclusions on the effectiveness of amalgamation have been consistent across the world. Studies of local government in Australia, Sweden, and Denmark have found either no financial improvements or higher costs of government after amalgamation. One suggested explanation is that political amalgamation rarely covers the entire boundaries of an economic area.[21] This raises doubts about amalgamation's ability to eliminate spillover effects and free-riding.

The most prominent cases of amalgamation in Canada are Montréal and Toronto, which most research evaluates negatively.

[17] Found, "Economies of Scale in Fire and Police Services," 20–21.
[18] Organisation for Economic Co-operation and Development, *OECD Territorial Reviews: Montreal, Canada 2004*, 100.
[19] Ibid., 26.
[20] Miljan and Spicer, *De-Amalgamation in Canada.*
[21] Spicer and Found, *Thinking Regionally.*

Case Study: Montréal

Before 2002, the island of Montréal was divided into 28 municipalities, including the City of Montréal. While each municipality had its own council, a regional governing body, the Montréal Urban Community (MUC) was set up to overview island-wide services such as transportation. In 2002, the provincial government amalgamated these 28 municipalities into a new City of Montréal and replaced the MUC with the Montréal Metropolitan Community (CMM), a regional governing body covering 82 municipalities in the greater Montréal area (including many off-island).

Consolidation had many objectives:

1) to improve the quality and reliability of services in the metropolitan area;
2) to improve fiscal equity (i.e., to make sure that those using the city's services contributed to the costs);
3) to improve efficiency by eliminating fragmentation;
4) to improve government accountability by having a single authority; and
5) to reduce intermunicipal competition for investment.[22]

Despite these laudable goals, many Montréalers regarded this consolidation as a loss of autonomy and worried that "community participation in decision-making processes would be threatened."[23]

Two years later, a newly elected provincial government allowed the original municipalities to hold referenda on de-amalgamating. Of the 28 original municipalities, 22 held referenda, and of those, 15 voted to de-amalgamate. By 2006, the governance structure had become a monster of its own. The City of Montréal had a city council, each of its 19 boroughs had its own council, and each of the reconstituted municipalities also had its own council, albeit with less power than before the amalgamation. In addition, an agglomeration council was created to maintain collaboration between the City of Montréal and the de-amalgamated municipalities. Its responsibilities included matters such as public safety, social housing, sewage treatment, public transit, water supply, and economic promotion. Finally, the CMM remained in place with responsibilities that included economic development, regional planning, transportation, and affordable housing across the greater Montréal area (the island and the surrounding municipalities).

To this day, there remains local irritation concerning governance and taxation structures (the agglomeration council bills the de-amalgamated municipalities for a share of the services provided on the island of Montréal). The mayors of the de-amalgamated municipalities often complain that the taxes levied on their municipalities are not proportional to their population shares, and that their voting power in the agglomeration council is insufficient. Additionally, an OECD study stated that the first budget of the amalgamated Montréal was 2.0 per cent higher than the former cities combined pre-

[22] Kellas, "Montreal Amalgamation to Consortiation."
[23] Ibid.

consolidation budgets.[24] The authors argue that despite the minimal initial increase, harmonization of municipal wages would determine the long-term costs of amalgamation (at the time, the wages in the former city of Montréal were significantly higher than in the rest of the metropolitan area). Moreover, this hybrid amalgamation now costs an extra $400 million a year to run, by some estimates, and has over 100 elected officials.[25] There has been, apparently, one positive result: the CMM's creation has meant that small and wealthy off-island municipalities now contribute to the provision of affordable housing regionally.

[24] OECD, *Territorial Reviews*.
[25] Trent, *The Merger Delusion.*

Case Study: Toronto

The most recent instance of amalgamation in the Toronto area was 1998's provincially mandated consolidation of metropolitan Toronto's six municipalities (East York, Etobicoke, North York, Scarborough, York, and the City of Toronto). Before consolidation, each municipality was responsible for local issues, while a higher-level government, Metro Toronto, took care of larger items like transit, police services, and sewers. A 1997 poll showed about 76 per cent of citizens were against the amalgamation, often citing loss of access to local authorities as a main concern.

Although two different expert groups recommended the creation of a governing authority for the Greater Toronto Area, the provincial government instead chose to consolidate the existing upper-tier government and the lower-tier municipal governments within Toronto into a single political entity, with the goal of producing cost savings and simplifying government.[26] The Ontario government set up the Greater Toronto Services Board for regional coordination and development, although it was not granted taxing or legislative authority, and was given only reduced powers over transit development (it was dismantled in 2001).[27] The provincial government expected that the amalgamated Toronto would save up to $645 million after the consolidation and $300 annually thereafter.[28]

A myriad of studies and research papers argue that Toronto's amalgamation did not achieve its main goal of reducing taxpayer costs. Indeed, the number of government employees increased after amalgamation (likely the result of upward harmonization of service quality),[29] as did wages and salaries (again due to upward harmonization).[30] The cost of fire services, garbage collection, and parks and recreation also rose. Other cost increases identified in the literature include general government expenditures (capital and operating) and planning costs (capital expenditures decreased, but operating expenditures increased even more).[31] However, the research has not always shown if the increases are due to changes in wages or in service levels.[32] As well, these cost increases might have resulted from other factors besides amalgamation, such as the downloading of programs by the provincial government.

Finally, some have argued that governance did not improve after amalgamation because the city is now "too small to address the regional issues" and "too big to be very responsive to local residents."[33]

[26] Slack and Bird, "Does Municipal Amalgamation Strengthen the Financial Viability of Local Government?"
[27] Ibid.
[28] Schwartz, "Toronto Ten Years After Amalgamation."
[29] Slack and Bird, "Does Municipal Amalgamation Strengthen the Financial Viability of a Local Government?"
[30] Schwartz, "Toronto Ten Years after Amalgamation."
[31] Dilkens, "A Comparative Analysis of Municipal Government in Ontario."
[32] Slack and Bird, "Does Municipal Amalgamation Strengthen."
[33] Ibid.

8.1.3 Last Word on Centralization

What is the bottom line? We would argue that the unsuccessful cases of amalgamation in Canada that have been described above, as well as others from around the world, are not so much a testament against the centralization of services as they are an argument against amalgamation as a governing structure. Indeed, the problems of amalgamation tend to stem from poor governance practices—such as lack of inclusivity and accountability—and, therefore, they do not diminish the case for recommending the centralization of services under other governing structures.

8.2 Private Sector Participation in Service Provision and Delivery

A second solution to service delivery and cost issues arising from urban growth and sprawl is to engage the private sector by means of public-private partnerships or outsourcing. This option offers opportunities to address issues and reduce costs without the pitfalls of centralization of services through amalgamation, but it also raises concerns, particularly surrounding accountability and transparency. Agreements between government and private contractors are common in the U.S. and Europe, where the case has been made for public-private cooperation, despite some of the concerns laid out below.

Unfortunately, studies to date have found little empirical evidence supporting a link between privatization and cost savings in specific service areas.[34] Because every municipality faces a different market structure and regulatory framework, the viability and success of private sector participation in service provision and delivery must be evaluated on a case-by-case basis.

Private sector engagement is not limited by governing structure. Amalgamated governments, fully fragmented governments, and multi-tiered governments (i.e., independent municipalities with a supra-municipal authority or agency) can all outsource or enter public-private partnerships for the provision or delivery of specific services.

8.2.1 Arguments for Private Sector Participation

Just as with centralization of services, the theoretical upsides to private sector participation are straightforward. In general, they involve a division of responsibilities, ideally one where government retains ownership of assets, develops policies, and chooses the level of service, while the private sector oversees service delivery.[35] The touted strengths of these arrangements include time and cost savings for municipalities, higher quality of services, and improved financial flexibility to build infrastructure.[36] The proliferation of private sector participation in service delivery in Canada, especially in the form of public-private partnerships, came partly as a solution for municipalities facing rising costs, provincial and federal downloading, and limited revenues. Some municipalities can also fully outsource or privatize a service over which they have jurisdiction.

[34] Bel and Warner, “Does Privatization of Solid Waste and Water Services Reduce Costs?”
[35] Slack, “Financing Large Cities and Metropolitan Areas.”
[36] Gill, *Canada as a Global Leader: Delivering Value Through Public-Private Partnerships*.

A common argument for engaging the private sector is that its inherent profit-maximizing and cost-minimizing mindset can help reduce the operating costs of delivering municipal services. Private firms are, in theory, more productive and flexible than the public sector, resulting in the same service delivery with fewer resources. The competition created by having multiple private firms bid for a municipal contract can also allow municipalities to identify and choose the most efficient provider.

Another strength of private sector engagement is the sector's ability to provide a higher quality of services. Indeed, some argue that the private sector is a better source of skilled and experienced workers. Although this is debatable, it could well be that engaging the private sector will result in a higher likelihood of finding service providers with more experience and better skills, mainly because the pool of such providers is larger than when service delivery is the sole responsibility of local governments.

Finally, public-private partnerships and outsourcing can improve municipalities' financial flexibility because they may allow them to shift capital costs of infrastructure projects onto private sector partners, thus allowing infrastructure building and service improvement without taking on public debt.[37] Municipal public-private partnerships allow also the inclusion of a maintenance and operations role for the private partner.[38]

8.2.2 Arguments Against Private Sector Participation

There are also arguments against private sector participation. First, private sector participation in practice has not always delivered the promised cost reductions and service quality improvements. Second, private sector participation in the provision or delivery of municipal services can endanger accountability and transparency.

The first problem with outsourcing services to the private sector is that the services may not meet citizen expectations. Indeed, service quality is one of the main reasons some municipalities have brought services back in-house. Issues include contractor problems, failure to meet obligations, and customer service complaints.[39]

Privatization is not always the cheapest option either. Studies have shown that although some services can be cheaper when outsourced to the private sector, others will be more expensive or just as costly as when outsourced to other municipalities.[40] In the case of public-private partnerships, transaction costs also tend to be higher given the complex nature of these partnerships.[41]

Successful private outsourcing relies on competition and the ability to enforce accountability and monitor quality, items often overlooked by municipalities. Significant problems can arise if these

[37] Ibid.
[38] Gill, *Canada as a Global Leader: Delivering Value Through Public-Private Partnerships*.
[39] Reynolds, Royer, and Beresford, *Back in House.*
[40] Spicer and Found, *Thinking Regionally*; Bel and Warner, "Does Privatization of Solid Waste and Water Services Reduce Costs?"
[41] Gill, *Canada as a Global Leader: Delivering Value Through Public-Private Partnerships*,

principles are not adhered to.[42] Indeed, lack of competition in the market and lack of municipal enforcement powers can result in lower quality of services because private firms no longer have an incentive to provide better, cheaper, and more efficient services. Implementing quality control measures is an additional management cost that municipalities sometimes fail to recognize when partnering with the private sector. This drawback can be mitigated with the use of public-private partnerships, which usually include checks and balances "that result in drivers for contract adherence."[43]

Surrendering taxpayer dollars to private companies to provide municipal services is theoretically problematic in the absence of municipal quality control. This is because, while governments attempt to maximize welfare, the private sector seeks to maximize profits. This sometimes leads to "corner-cutting" and substandard service provision. Blurring the lines between private and public entities can also jeopardize citizens' trust in government.

8.2.3 Private Sector Participation in Practice

In Canada, fiscal strain arising from provincial and federal program downloading to municipalities, the rising costs of providing municipal services, and limited access to growing revenue sources have resulted in local governments turning to the private sector to satisfy demand while keeping costs in check. Existing literature identifies mixed results: some municipalities have achieved cost reductions, while others have brought outsourced services back in-house.

For instance:

- In Montréal, sidewalk construction and repair was outsourced in the early 2000s, but following discovery of corruption in the construction industry, some boroughs decided to bring sidewalk work back in-house. These boroughs cited cost savings as the main reason.[44]
- In Winnipeg, the use of a public-private partnership for the Chief Peguis Trail extension project resulted in 17.6 per cent in savings and completion ahead of schedule.[45]
- In Hamilton, Ont., changes in ownership of a private contractor were followed by sewage spills, staff layoffs, and fines to the city. Such disasters prompted the city to re-assume responsibility for water and wastewater treatment at the end of the 10-year contract. The city also saved money.[46]
- In Chilliwack, B.C., the use of a public-private partnership allowed the construction of the Prospera Centre—a 5,000-seat arena with twin rinks—at low cost and on time.[47]

[42] Van Slyke, "The Mythology of Privatization in Contracting for Social Services."
[43] Gill, *Canada as a Global Leader: Delivering Value Through Public-Private Partnerships*.
[44] Reynolds, Royer, and Beresford, *Back in House.*
[45] McBride, "Municipal P3s: Exploring the Success Factors."
[46] Reynolds, Royer, and Beresford, *Back in House.*
[47] Hollands, *Toward More Efficient Municipal Government in Canada*.

- In Wood Buffalo, Alta., a contract for specialized transit services was awarded to a private company. The contractor was responsible for facility management, capital assets procurement, transit planning, fares, and customer services. An audit revealed the company was not following staffing guidelines, did not meet timelines for construction projects, and recorded too many customer complaints. The service was subsequently brought back in-house, with similar costs but better quality.[48]

- Goderich, Ont., outsourced its water and wastewater operating functions to a private contractor in 2000 to increase capacity and create long-term value. Following a successful five-year term and an independent performance audit, the contract has been renewed twice since then.[49]

- In Banff, Alta., wastewater treatment was contracted to different providers. After the release of partially treated sewage into the Bow River, the town changed contractors to operate and maintain the treatment plant. While negotiating a new 10-year contract, an in-house delivery option resulted in significant cost savings.[50]

- In Ottawa, a consortium of private firms designed, built, and financed the city's first LEED-certified facility: the Ottawa paramedic service headquarters. Cited advantages of this public-private partnership include quick delivery of the facility, a firm price contract, and management by the private partner with established service levels.[51]

- In Saint John, N.B., capacity limitations pushed the city to partially outsource solid waste collection. In 2010, contractors submitted bids to take over the entire solid waste collection service. Presented with different options, city council opted to bring all solid waste collection back in-house, resulting in savings of $700,000 in one year.[52]

- In Calgary, parking enforcement was transferred by the police department to the Calgary parking authority, which mainly employed the Corps Commissionaires. In 2015, the Calgary parking authority announced it was moving its enforcement services in-house to improve customer service.[53]

Typically, failure to achieve cost savings and to maintain quality occurred when there was no competition for the contract, when the municipality had not defined procedures to monitor and control quality, or when the municipality had not retained ownership of the assets.

The literature finds similar results internationally. In the United States, data covering some 430 municipalities between 2002 and 2007 showed that the number of new outsourcing deals was about the

[48] Reynolds, Royer, and Beresford, *Back in House.*
[49] The Canadian Council for Public-Private Partnerships, *Public-Private Partnerships: A Guide for Municipalities.*
[50] Reynolds, Royer, and Beresford, *Back in House.*
[51] The Canadian Council for Public-Private Partnerships, *Public-Private Partnerships: A Guide for Municipalities.*
[52] Reynolds, Royer, and Beresford, *Back in House.*
[53] Ibid.

same as the number of cases brought in-house to be delivered by the municipalities,[54] showing once again that private sector contracting produces mixed results and that it must be considered on a case-by-case basis. The main reasons cited for bringing services back in-house were inadequate quality of service and insufficient cost savings.[55] In Germany, municipalities have begun to bring energy, waste management, and public transport services back under public management because of quality slippage and out-of-line price increases by private contractors.[56] In the United Kingdom, some municipalities have repatriated services such as waste collection and public transit, judging they can deliver these less expensively. In France, a notable example of re-sourcing was Paris resuming responsibility for water services in 2010, saving €35 million and reducing consumer prices by 8 per cent in the first year.[57]

Notwithstanding such repatriations, most "failures" appear to result from poor governance practices. Chief among these is the inability to monitor quality—due to poorly negotiated contracts, local government neglect, or lack of resources. Under the right circumstances, the private sector can help with service provision and delivery of municipal services.

8.3 Intermunicipal Cooperation

Cooperation between jurisdictions is a third service delivery solution to address increasing pressures in fast-growing metropolitan areas. This option, often implemented through intermunicipal agreements, can allow municipalities to address region-wide servicing demands without sacrificing local autonomy. Cooperation between neighbouring jurisdictions is also more flexible than centralization of services and private sector engagement. Yet the presence of too many intermunicipal agreements presents a threat to government accountability, as it can increase friction and red tape, and officials can attempt to shunt responsibility for problems to other municipalities and departments.

Just as with private sector participation, this type of arrangement comes in a variety of forms and defies one-size-fits-all solutions. Thus, the success of intermunicipal cooperation must be evaluated case by case. The degree of cooperation between jurisdictions is an important consideration and can fall anywhere between full integration—which leads to autonomy loss—and complete independence—which can hinder successful resolution of regional issues. The required level of cooperation often hinges on the nature and complexity of the servicing issues to be addressed.

Table 18 shows a framework used to compare provision mechanisms of public goods and services and can serve to assess the degree of government cooperation.[58] It can be used to classify types of intermunicipal agreements by the level of integration between municipalities. This level of integration is measured on two dimensions: the mechanism of integration and the scope of collaboration.

[54] "Warner and Hefetz, "Insourcing and Outsourcing."
[55] Ibid.
[56] Wagner and Berlo, "The Wave of Remunicipalisation of Energy"; Hall, *Re-Municipalising Municipal Services in Europe.*
[57] Ibid.
[58] Feiock, "The Institutional Collective Action Framework."

The mechanisms of integration, in increasing degree, are "embeddedness," "contracts," and "delegated authority." As agreements move from embeddedness to delegated authority, they become more formal and less flexible, there is more legal protection for the signatories, transaction costs increase, and the ability to address regional servicing issues rises.[59] Since any step beyond delegated authority would be tantamount to imposing a central authority on municipalities, we do not consider this option.

The scope of collaboration has two sub-dimensions: the number of partners and the number of issues covered (from bilateral and single-issue cooperation to collective and all-issue cooperation). The lower left-hand corner of the table represents agreements with low cooperation and low transaction costs, while the upper right-hand corner represents high cooperation agreements with higher transaction costs, higher capacity to address regional issues, and less local autonomy.[60]

Table 18
Feiock's Institutional Collection Action Framework

		Mechanism of Integration		
		Embeddedness	**Contracts**	**Delegated authority**
Scope of Collaboration	**Collective/complex**	Multiplex self-organizing systems	Councils of governments	Regional authorities
	Multilateral/intermediate	Working groups	Partnerships and multilateral local agreements	Multi-purpose districts
	Bilateral/simple	Informal networks	Service contracts	Single-purpose special districts

Source: Richard C. Feiock, "The Institutional Collective Action Framework."

8.3.1 Arguments for Intermunicipal Cooperation

Overall, the literature suggests intermunicipal cooperation is an efficient means to mitigate service cost and delivery pressures. The most commonly cited strengths of this approach are its potential for flexibility, cost savings, service harmonization, and managing spillover effects.

Intermunicipal cooperation has an advantage over centralized service provision and delivery because municipalities can choose their partners and the services to be covered under a specific agreement. Therefore, fragmented-but-cooperating municipal governments benefit from much more flexibility in service provision and delivery than in an amalgamation arrangement where services are centralized

[59] Ibid.
[60] Ibid.

under one authority. A municipality can, for example, enter an agreement over waste collection services with one neighbouring municipality and strike a different deal for fire and police service coverage with another. Furthermore, even though regional planning and decision-making is required at higher levels of cooperation, there is no requirement for an imposed regional authority.

The many types of potential intermunicipal partnerships can give local governments more flexibility than private sector partnerships—where options such as service swapping or co-management are not usually available.[61] Adding to this flexibility factor, partner municipalities can choose which services should be dealt with on a regional level. And since participation in intermunicipal agreements is voluntary, it is likely that they will address the most important regional issues. Overall, intermunicipal cooperation offers more options to local governments looking to address specific needs.

Intermunicipal cooperation also presents an opportunity for, but does not guarantee, service delivery cost savings. Gains are possible due to the principle of comparative or absolute advantages. In other, words, cooperative agreements can allow neighbouring municipalities to increase productivity by redirecting resources to the provision and/or delivery of services in which they have developed expertise (notably by owning better equipment) and trading with neighbours. Successful agreements of this type can cut costs since each unit of service is produced by the most efficient local government.

Agreements between municipalities can also contribute to harmonizing services across larger geographical areas. Indeed, if a municipality is not able to provide a service of acceptable quality—which is not hard to conceive of, as municipalities have limited resources—a neighbouring government with relevant expertise and capability can help close the gap, rendering service delivery uniform across jurisdictions.[62] Thus, such agreements can vastly improve the quality and quantity of services offered across entire metropolitan areas. And, unlike service centralization, these agreements would not result in an upwards harmonization of wages across municipalities. That said, municipalities that are "closing the gap" could experience an increase in costs because they are offering services to a wider base. This potential negative outcome needs to be considered before proceeding with such arrangements.

Less tangible advantages of intermunicipal cooperation include staving off forced amalgamation by higher-level governments (because competition between municipalities can lead to uncooperativeness, which may force provincial governments to mandate amalgamation to address regional issues) and higher social and political acceptability than private sector partnerships. Finally, intermunicipal cooperation can help control spillover effects. Indeed, policy coordination can be an effective tool to ensure service continuity and to manage shared resources across borders.[63]

[61] Spicer and Found, *Thinking Regionally*.
[62] Spicer, "Regionalism, Municipal Organization and Interlocal Cooperation in Canada"
[63] Spicer, "Cooperation and Capacity."

8.3.2 Arguments Against Intermunicipal Cooperation

Intermunicipal cooperation also has its flaws. These include weak political accountability, lack of cost saving guarantees, and non-negligible transaction costs. Yet the flexibility offered by the wide range of agreement types can help mitigate these threats.

One of the most common drawbacks of intermunicipal cooperation is a potential for accountability loss. This threat arises when service provision and/or delivery is transferred to a different municipality or co-managed between two or more municipalities. Indeed, when multiple jurisdictions share responsibility for a service, they can pass blame around when problems arise.

Municipalities are also often skeptical about cooperating agreements because cost savings in service provision and delivery are not guaranteed. Research has found that economies of scale in intermunicipal agreements are not widespread.[64] Instead, cost savings appear to be the result of competition, and not dependent on the private or public nature of the provider. Therefore, pursuing intermunicipal agreements or outsourcing to the private sector would not make much of a difference in terms of cost savings. In other words, savings will depend on identifying the lowest-cost provider and on the nature of the service.[65] In some cases, intermunicipal agreements may generate better outcomes than private sector outsourcing, while in other cases the opposite may be true.

In a similar vein, transaction costs surrounding intermunicipal agreements can be significant. These include building agreement-monitoring capacity and dividing any resulting gains. Higher degrees of cooperation require more complex agreements and thus more resources, like lawyers and accountants, to implement, monitor, and manage.

8.3.3 Intermunicipal Cooperation in Practice

The literature shows that Canadian use of intermunicipal agreements lags that in the United States. Some suggest that, because of the high number of services that Canadian municipalities provide to their constituents, they are missing out on significant service improvement opportunities.[66] For instance, while some American metropolitan areas count hundreds and sometimes thousands of intermunicipal agreements, the Greater Toronto Area has less than two hundred.[67] Canadian intermunicipal agreements identified across six CMAs in a paper by the Munk School of Global Affairs' Institute on Municipal Finance and Governance count just 2.87 municipal participants per agreement on average, indicative of low coverage and low integration,[68] especially as most major CMAs in Canada count about 20 municipalities.

[64] Byrnes, Dollery, and Allen, "Do Economies of Scale Exist in Australian Local Government?"; Fox and Gurley, "Will Consolidation Improve Sub-National Governments?"
[65] Spicer and Found, *Thinking Regionally*.
[66] Ibid.
[67] Spicer, "Cooperation and Capacity."
[68] Ibid.

Some suggest competition among jurisdictions limits intermunicipal agreements. One study found that some local governments in Canada will avoid cooperation over concerns that it will lead to growth being diverted to a neighbouring municipality.[69]

Provincial government reluctance to foster intermunicipal cooperation may be another constraint. Canadian provinces have tended to favour centralizing measures, including forced amalgamation to solve regional problems.

Other agreement limiting factors include local government fears that cooperation can lead to amalgamation, but we have found no evidence of this. It is also possible that few municipalities know or understand existing intermunicipal agreements.

Canadian intermunicipal agreements that do exist usually cover two main services: public transportation and fire protection.[70] Most of these agreements appear to be low integration arrangements, as they cover only service delivery. These agreements tend to be "in the form of mutual aid or fee-for-service arrangements,"[71] without the need for regional-level planning and decision-making processes. For instance, Ottawa and Gatineau have each their own public transportation agency (OC Transpo and Société de transport de l'Outaouais), with some bus lines from OC Transpo being able to cross into Gatineau and vice versa. The two cities recently entered an agreement that creates a joint transit planning and coordination group. This group will make recommendations but does not have decision-making authority. Intermunicipal cooperation between these two municipalities is obviously complicated by the fact that they are located in two different provinces.

A special case in Canada is found in British Columbia, where the regional district system provides a framework for intermunicipal agreements. The role of these districts is to provide governance at a regional level, to manage the provision of services, and to facilitate the delivery of services. Yet regional districts feature a significant voluntary aspect; even though a municipality cannot opt out of a regional district, it can decide to act alone, or with other municipal partners, on the provision of a specific service,[72] effectively encouraging intermunicipal cooperation. In addition, regional districts only provide member-agreed services, making them agents of their municipalities. Since the regional districts must rely on agreements by their members to act on policy matters, regional decision-making is achieved without regional authority being imposed.[73]

European countries such as Austria, Denmark, Finland, Iceland, Ireland, the United Kingdom, and Ukraine are all seeing a rise in the number of intermunicipal agreements as cities seek to reduce costs and improve municipal services. This trend, although not caused by the 2008 economic crisis, has been accelerated by it.[74]

[69] Spicer and Found, *Thinking Regionally*
[70] Spicer, "Cooperation and Capacity."
[71] Ibid.
[72] British Columbia Ministry of Community Services, *A Primer on Regional Districts in British Columbia*.
[73] Ibid.
[74] Davey, *Local Government in Critical Times*.

9. Special Lens on Regional Coordination and Governance: Governance and Regional Coordination in Greater Vancouver

Chapter Summary

- This chapter presents Greater Vancouver's current governance structure and issues.
- The area counts two important regional bodies: Metro Vancouver and TransLink.
- Transportation, policing, economic development, and land use planning are key regional issues exacerbated by local government fragmentation.

9.1 Current Situation

Greater Vancouver is no stranger to issues surrounding municipal governance, particularly due to its rapid growth. The area posted real GDP growth of 3.1 per cent per year, on average, between 1987 and 2016. Over the same period, employment expanded by an average of 2.2 per cent per year. The Conference Board's Municipal Outlook Service projects output and job growth will slow somewhat, but Greater Vancouver will remain one of Canada's fastest-growing metropolitan areas.

A persistently healthy local economy, with its many industrial clusters, has spurred this growth and attracted individuals and firms over the years. The metropolitan area's population increased by 1.4 per cent annually, on average, between 2000 and 2016—a solid rate of growth in a country where an aging population and decreasing fertility rates are the dominant demographic trends.

This fast expansion and growing commuting, combined with the area's criss-crossing of municipal groupings and local governments, can lead to service delivery challenges and rising costs for local governments. These trends also make it difficult for Greater Vancouver to present a united face to the rest of the world, compromising its ability to attract business investment. They also likely play some role in the region's poor and deteriorating housing affordability. Indeed, observers frequently note the difficulty of achieving local consensus because Greater Vancouver is fragmented. For instance, demographer David Baxter has noted that:

> The City of Vancouver only represents 26 percent of its CMA's population. Hence, bringing municipalities together to express a consensus of regional concerns would require bringing the municipal representatives of the remaining 73 percent of the regional population on board. By comparison, the Toronto City council only has to deal with another 53 percent, and the mayor of the City of Montréal the remaining 57 percent … [this might suggest that] regional partnerships and cooperation would … require much more energy here in Vancouver than in most other metropolitan regions in Canada."[75]

[75] Baxter et al., *Numbers & Respect*.

Statistics Canada's definition of the Vancouver census metropolitan area encompasses 39 jurisdictions (cities, villages, First Nations territories, etc.). Those with 2016 Census populations over 100,000 are Vancouver, Surrey, Burnaby, Richmond, Coquitlam, Langley, and Delta. This census put the CMA's total population at 2,463,431.

An important mechanism put in place by British Columbia to address the "fragmentation in the provision of—or planning for—services"[76] across the province was the regional district system discussed in section 8.3.3. The regional district covering the Vancouver metropolitan area is known as the Greater Vancouver Regional District and encompasses Metro Vancouver. It does not line up perfectly with the CMA, as it incorporates 21 municipalities, one electoral area, and one Treaty First Nation. Table 19 lists the jurisdictions covered by Metro Vancouver.

Table 19
Jurisdictions Within Metro Vancouver

Jurisdiction	Population
Anmore (village)	2,210
Belcarra (village)	643
Bowen Island (municipality)	3,680
Burnaby (city)	232,755
Coquitlam (city)	139,284
Delta (district municipality)	102,238
Langley (city)	25,888
Langley (district municipality)	117,285
Lions Bay (village)	1,334
Maple Ridge (city)	82,256
New Westminster (city)	70,996
North Vancouver (city)	52,898
North Vancouver (district municipality)	85,935
Pitt Meadows (city)	18,573
Port Coquitlam (city)	58,612
Port Moody (city)	33,551
Richmond (city)	198,309
Surrey (city)	517,887
Tsawwassen (First Nation)	816
Vancouver (city)	631,486
West Vancouver (district)	42,473
White Rock (city)	19,952
Electoral Area A*	16,133
Abbotsford (city)*	141,397

* Electoral Area A comprises about 818 square kilometres of unincorporated land within the regional district boundaries and includes University of British Columbia and the university endowment lands, among other areas.
** Abbotsford is a member of the Greater Vancouver Regional District parks function only.

[76] Cashaback, *Regional District Governance in British Columbia.*

Source: Statistics Canada.

9.2 Current Governance Structures

So far, this special lens has examined existing solutions to address municipal servicing issues in a context of urban growth and sprawl. Although these solutions vary widely in nature and structure, their success or failure could ultimately be determined by the quality of governance.

Governance—in particular good governance—is a complex concept, as its definition varies across countries, economic actors, and researchers.[77] Our goal here is to examine the quality of public governance. Because high-quality governing authorities and high-quality outcomes are typically related, and since it makes more sense from a practical standpoint to consider the structure of government than individual policies, we discuss governance in Vancouver as it relates to its two regional bodies: Metro Vancouver and TransLink. Aside from the services covered by these two agencies, there seems to be a dearth of other regional-scale planning, provision, and delivery of services in the Vancouver area.

9.2.1 Metro Vancouver

Metro Vancouver collaboratively plans and delivers several regional-scale services. Its core services are drinking water, wastewater treatment, and solid waste management. The regional body also regulates air quality, plans for urban growth, manages a regional parks system, and provides affordable housing. All told, the organization has nine departments with close to 1,500 employees.[78] While Metro Vancouver operates trunk water and sewer services, property owners may not notice because they purchase services from municipal utilities.

More specifically, four separate corporate entities, each with a different set of members, operate as Metro Vancouver. These are:

- Metro Vancouver Regional District
- Greater Vancouver Sewerage and Drainage District
- Greater Vancouver Water District
- Metro Vancouver Housing Corporation

As discussed in Chapter 8, regional districts may provide a prime framework for intermunicipal agreements on service delivery and regional planning because, although created by provincial law, they do not have absolute authority and require agreements between their constituent municipalities before taking action. That said, this process—although more representative, accountable, and democratic than amalgamation—requires more energy and effort because the interests of the individual municipalities often diverge and a regional vision is often missing.

Metro Vancouver's governance structure is anchored on its board of directors, which is composed of elected officials, appointed by and from their respective municipal or First Nation councils who, of course, are voted into or out of office by voters. In addition, each director of the board holds voting

[77] Taylor, "Good Governance at the Local Level."
[78] Metro Vancouver, "About Us."

power proportionate to the population they represent, with a maximum of five votes per director, and all decisions must be passed by either majority consent or for key decisions, such the regional growth strategy, by unanimous consent.[79] Thus, Metro Vancouver's authority stems from the municipalities it encompasses.

On the other hand, Metro Vancouver has been critiqued for several governance shortcomings, including that it does not have a directly elected board and that it lacks timeliness in making major decisions for the region. Disputes between the body's component municipalities, particularly over land use planning, can lead to delays in approving and integration regional land use plans. (We examine land use planning issues in more detail in section 9.3.4.)

9.2.2 TransLink

TransLink is the other regional agency in Greater Vancouver, and it might be the only possible public transportation solution in a multi-jurisdiction area like the Lower Mainland, as it helps resolve many of the issues that arise from cross-jurisdictional commuting.

This transportation agency was created in 1998 as the Greater Vancouver Transportation Authority and was fully implemented in April 1999 by the government of British Columbia. It is responsible for various modes of transportation in the Metro Vancouver region as well as the West Coast Express, which extends into the Fraser Valley Regional District. Its governance structure includes the Mayors' Council of 21 mayors of Metro Vancouver municipalities (all the areas listed above for Metro Vancouver, except Anmore and Bowen Island) and the Chief of Tsawwassen First Nation. The Mayors' Council approves various TransLink plans and financial transactions and appoints the majority of TransLink's board of directors from a candidate list put together by a screening panel.[80] The screening panel is appointed by the Greater Vancouver Gateway Council, the Chartered Professional Accountants of British Columbia, the Mayors' Council, the minister responsible for TransLink, and the Greater Vancouver Board of Trade. The screening panel's list of candidates is not required to include any elected officials.

TransLink has been criticized for the challenges inherent in its bifurcated governance model, with key decisions divided between a board of directors and a mayors' council. Since 2017, the two bodies have worked by means of joint committees, resulting in the recent approval of a plan to fund the regional share for Phase 2 of the 10-year vision for regional transportation.

9.3 Regional Issues to Be Addressed

To better study the merits and criticisms inherent in the current regional governance structure of Greater Vancouver, we relate it to the critical issues that hold back its economy and quality of life. Many of these issues were identified in Scorecard 2016 and have been highlighted again in Scorecard 2018:

[79] Metro Vancouver, *Procedure Bylaw Consolidated*; *Local Government Act*; Metro Vancouver, "Regional Growth Strategy Delayed."
[80] TransLink, "Governance Model."

transportation, policing, economic development, and land use planning, the latter of which affects both housing affordability and industrial land availability.

9.3.1 Transportation

Moving people through any densely populated area is a challenge. Over the years, transportation infrastructure development, advancements in transportation technology, and a preference for single-family homes have resulted in commuters living increasingly further from their workplaces, creating urban sprawl, traffic congestion and pollution. Such commuters leapfrog municipal boundaries, necessitating the coordination of transportation planning between jurisdictions. Therefore, regional transportation authorities are the preferred solution for most municipalities. In British Columbia's Lower Mainland, the resulting entity is TransLink.

Despite TransLink's best efforts, the two benchmarking indicators focused on Greater Vancouver's transportation system yielded relatively mediocre results. Recall that the average travel time to and from work was 56 minutes per day in 2016, a middle-of-the-pack performance that earned a flattering B grade largely because of Shanghai's interminable 102-minute commute. Also, recall that about 30 per cent of commuters use non-car means of travel, a C grade performance that lags far behind those of the Asian metro areas. The new indicator this year relating to public transit rail length in kilometres places Greater Vancouver near the back of the pack (a D grade). An encouraging development was the recent affirmation—and funding commitment—by the Mayors' Council of Phase 2 of TransLink's 10-year transportation plan, which includes two new rail transit lines.

9.3.2 Policing

Policing is fragmented in the Greater Vancouver area and might benefit from closer links between municipalities. Components of the Vancouver CMA with their own police departments are the City of Vancouver, West Vancouver, Delta, New Westminster, and Port Moody. Other municipalities hire the RCMP. In 2016, Richmond considered creating its own police force, but it has not done so to date.[81]

Several observers have suggested that some form of regional police force would be useful. For instance, in May 2017, a policy forum of the B.C. Chamber of Commerce passed a resolution that noted "from a practical perspective, dividing police resources along municipal borders, especially ones that are adjacent, makes little or no sense."[82]

This is not a new criticism; a commission of inquiry cited lack of coordination between police forces in the Lower Mainland as a key factor allowing serial killer Robert Pickton to prey on area women. A report following his capture concluded that "the inability to fully address cross-jurisdictional issues was a critical police failure, substantially limiting the effectiveness of the investigations."[83] More generally, although Greater Vancouver earns an A in the homicide rate category in Scorecard 2018, its grade is flattered by high homicide rates in the U.S. metro areas. Indeed, Greater Vancouver still falls in the

[81] "Richmond Police Department Would Offer City More Control."
[82] Cleverley and DeRosa, "New Approach to Policing in B.C. Urged."
[83] Oppal, *Forsaken: The Report of the Missing Women Commission of Inquiry: Executive Summary*, 85.

bottom half of the rankings, with a homicide rate above both Montréal's and Toronto's. Perhaps a unified police force could help improve this outcome.

The literature concurs with these observations. The most common intermunicipal agreements elsewhere in Canada include fire and police services.[84] This is unsurprising, as these services need to be immediately available, and the problems they address do not respect municipal boundaries. Centralization of these services for the entire metropolitan region would address these issues, though as discussed in the previous chapter, it may not necessarily lower costs.

9.3.3 Economic Development

There are at least 10 economic development agencies among the 21 municipalities, one Treaty First Nation, and one electoral area that make up the Metro Vancouver regulatory entity, something that likely fosters duplication of effort and interjurisdictional competition. Indeed, business groups observe that "understanding the role of international and interprovincial trade in underpinning the economic well-being of Metro Vancouver has been hampered by the region's fragmentation into a multiplicity of distinct cities and towns—all overseen by a regional government that conspicuously lacks authority in matters such as economic development, trade, and business and investment attraction."[85]

Another issue that stems from the fragmentation of the Lower Mainland region is the licensing process for mobile businesses (such as contractors). Up until recently, a mobile business was required to obtain a different licence for every jurisdiction in which it conducted business, leading to inefficiencies and high costs, hindering economic activity. Fortunately, the provincial government, the Union of British Columbia Municipalities, and local governments have created a mobile business licence program to streamline the licensing process in the province.[86] The program takes the form of agreements that allow mobile businesses to operate across multiple jurisdictions under a single licence. To date, 15 mobile business licence agreements exist in British Columbia, but none of them encompasses all of Greater Vancouver. Instead, four separate agreements, signed between 2012 and 2013, appear to cover most of the region:

- The Metro West region of the Greater Vancouver area agreement encompasses the cities of Burnaby, Delta, New Westminster, Richmond, Surrey, and Vancouver.
- The Fraser Valley area agreement covers the cities of Abbotsford, Chilliwack, Delta, Langley, Pitt Meadows, and Surrey, as well as the districts of Hope, Kent, Maple Ridge, and Mission, and the Township of Langley.
- The Tri-Cities area agreement includes the cities of Coquitlam, Port Coquitlam, and Port Moody.
- The North Shore area agreement covers the city of North Vancouver and the districts of North Vancouver and West Vancouver.[87]

[84] Spicer and Found, *Thinking Regionally*.
[85] Finlayson and Peacock, "Metro Vancouver Needs a Cohesive Economic Development Plan."
[86] British Columbia Employment, Business & Economic Development, "Mobile Business Licence Program."
[87] Ibid.

This is not necessarily a drawback, as smaller mobile businesses are likely to operate only within the boundaries of one of these agreements. However, a higher level of integration across the Greater Vancouver region would certainly reduce the amount of red tape and facilitate business activity.

As highlighted in both scorecard reports, intermunicipal competition for resources and investment is detrimental to the long-term economic development of a metropolitan region. Previous efforts to launch regional economic development initiatives—like the Greater Vancouver Economic Partnership and the Economic Leadership Council—have failed for a variety of reasons. There are still gains to be made by integrating the different economic development agencies or by delegating the responsibility for regional economic development to Metro Vancouver—as long as the body has appropriate authority. Economic development is an obvious area that could gain from centralization and/or improved coordination.

To help address these issues, Metro Vancouver has launched the Regional Prosperity Initiative, which has assembled a group of local public and private stakeholders with the objective to promote the region for mutual benefit.[88] The initiative has put forward two projects thus far, one to develop a regional mobile business licensing program and the other to streamline the process for obtaining filming permits and licences.[89] The regional mobile business licensing project could bring some relief to the housing affordability issues in the area—which we explore in the next section—by lowering some of the constraints to increasing housing supply.

9.3.4 Land Use Planning: Housing Affordability and Availability of Industrial Land

Land use planning is a contentious issue among municipalities in fast-growing metropolitan areas. Common areas of disagreement include density targets and parkland protection. Disagreements between municipalities can be addressed via regional planning, to the detriment of local autonomy. Although it can be argued that in the long term the benefits of regional land use planning far outweigh the potential loss of local autonomy, the problem can be tackled from a cooperating angle instead.

In the Lower Mainland, Metro Vancouver is the steward of the regional land use plan. The legal framework that governs Metro Vancouver requires that each member municipality develop a "regional context statement."[90] It is housed in the local official community plan (OCP) and must be submitted to the Greater Vancouver Regional District for acceptance. It essentially demonstrates how the local aspirations—as expressed in the OCP—align with and support the regional vision—as expressed in a regional growth strategy (which also must be adopted by all affected local governments). The *Local Government Act* also lays out a dispute resolution process to settle matters where a local government does not accept a regional growth strategy, or if a regional district does not accept the regional context statement. For example, in 1994, Surrey voted to partially reject the higher housing densities specified

[88] Metro Vancouver, *Regional Prosperity Initiative*.
[89] Ibid.
[90] *Local Government Act,* 2015 R.S.B.C.*,* ch. 1, part 13—Regional Growth Strategies.

in the draft plan. Langley Township and Richmond also resisted the plan. In the end, Surrey and Langley Township negotiated settlements with the Greater Vancouver Regional District on their own.[91]

Even though this governance structure attempts to satisfy both municipal autonomy and regional vision simultaneously, the required consensus on land use planning is difficult to achieve.

9.3.4.1 Housing Affordability

An important land use planning issue in Greater Vancouver is housing affordability. From the benchmarking analysis, we found that Greater Vancouver's ratio of median house prices to median household income is one of the highest in the scorecard. In addition, we found that no other metro area has seen a sharper deterioration in housing affordability over the past five years than Greater Vancouver.

The fact that housing in Greater Vancouver is expensive is unsurprising, as strong population growth has resulted in a shortage of available land, especially around the inner core. Although the problems plaguing housing affordability in Vancouver are complex and cannot be fully resolved just by municipal coordination, better governance can at least alleviate some pressure on the supply side of the housing market. For instance, increased cooperation in Metro Vancouver's board of directors could support housing supply by streamlining the permit procurement process.

Both demand and supply factors make accommodation costly in Vancouver. Local housing demand has been fuelled by economic factors such as healthy employment growth and low mortgage rates, by demographic factors including population growth and immigration, by geographic factors like the mild climate and proximity to the ocean and mountains, and by a high quality of life. This has sparked both local demand and offshore interest. Despite the August 2016 imposition of a tax on foreign buyers, the area's average resale price hit a record high in May 2017 and broke that record once again in November 2017.

At the same time, housing supply is limited first and foremost by unique geographic constraints. The region is bordered by the Pacific Ocean to the west, the North Shore Mountains to the north, the U.S. border to the south, and the Agricultural Land Reserve (ALR) to the east.

Other issues also hamper supply, including neighbourhood resistance to residential intensification, what is colloquiality referred to as nimbyism (not in my back yard). In the same vein, area homebuilders argue that Greater Vancouver presents a challenging development approval process, some of it due to local government fragmentation. Indeed, area cities have varying construction rules and processes. A 2014 report by the Greater Vancouver Homebuilders Association identified several issues, including excessive diversity in costs and timing of municipal approvals among Metro Vancouver municipalities and lack of clarity at the outset of an application, as well as overly lengthy approval processes with unnecessary bottlenecks.[92]

[91] Taylor and Burchfield, *Growing Cities*, 65.
[92] Holden and Sidhu, *Getting to Groundbreaking.*

Improving building permits and construction processes would, we believe, alleviate some of the pressure on housing affordability—identified in the scorecard—by increasing supply. Possible actions include:

- setting regulatory fees "sufficient to pay for needed infrastructure and amenities, yet not so high that they pose an unfair burden on newcomers or create divides in the municipality"
- improving public engagement
- empowering municipal staff to solve site-specific challenges and shepherd specific projects through the municipal permitting process and interpret policy along the way
- improving municipal websites to include complete, accurate, and up-to-date information
- sharing best practices among area municipalities
- setting predictable fees and levies, including standardized community access charges
- conducting concurrent reviews of different stages (e.g., rezoning and permitting) of the development application
- increasing the certainty and transparency in community amenity contribution (CAC) negotiations[93]

Some of these ideas were echoed in an executive briefing by the McKinsey Institute, which also made the following suggestions:

- Cities should consider establishing "by right" special development zones in a few areas where deviations from city zoning and land use codes are permitted with minimal review. Vancouver municipalities could collectively agree to some of these.
- Distribute digital surveys and use analytic tools to track citizen sentiment and individuals' actual patterns of land use; these could more completely dovetail municipal housing decisions with voter expectations.[94]

Other measures that could improve housing supply and thus affordability include:

- A vacant unit tax would decrease the number of unoccupied but unavailable homes. This would also help regulate the short-term rental of properties through services like Airbnb. These short-term rentals remove units from the stock of housing available for longer-term occupancy. The City of Vancouver established an empty homes tax this year with the hope of relieving the pressure on Vancouver's rental housing market.

[93] Ibid.
[94] Woetzel et al., *Housing Affordability*

- A regional strategy to house seniors could add to the housing supply by helping seniors who are looking for decent, nearby alternatives to living in familial homes that exceed their requirements. In fact, upscale Shaughnessy neighbourhood in Vancouver saw its population decline by 7 per cent (140 people) between the 2011 and 2016 censuses.[95] Other neighbourhoods, mainly on the west side also experienced population drops over those five years: the Dunbar, Arbutus Ridge, and Kerrisdale neighbourhoods declined by an average of 3 per cent.

While centralized authority might be a step too far in addressing these issues, greater regulatory alignment and rule harmonization among the area's municipalities surrounding residential development, especially the building permit approval process, would go a long way to making it easier to plan for growth across the metropolitan area.

9.3.4.2 Availability of Industrial Land

Greater Vancouver's well-known land supply constraints confront competing land demand from residential, industrial, recreational, and agricultural users. Unsurprisingly, there is wide agreement that the Vancouver area faces a shortage of industrial land. (See Table 20.) This is worrisome because Vancouver needs industry to provide jobs so it does not develop a reputation as a playground for the rich. As well, various Vancouver Fraser Port Authority facilities occupy industrial lands, and encroachment on these from competing uses (particularly residential) could cut capacity at Canada's largest seaport, with potentially national implications.

Table 20
Stock of Vacant Industrial Land in Vancouver Region, 2015

Developed and vacant inventory by sub–region (hectares)				
	Developed	**Vacant**	**Total**	**% vacant**
Burnaby/New Westminster	1,360	77	1,438	5
Delta/Tsawwassen First Nation	1,272	326	1,598	20
Langley	749	193	942	20
North Shore	398	28	426	7
Northeast Sector	1,156	36	1,192	3
Richmond	1,458	307	1,765	17
Maple Ridge/Pitt Meadows	324	419	743	56
Surrey/White Rock	1,728	857	2,584	33
Vancouver	625	17	642	3
Total	9,070	2,260	11,330	20

Source: *Metro Vancouver 2015 Industrial Lands Inventory: Technical Report*.

A Metro Vancouver report estimated that in 2015, the region's stock of vacant land was down 19 per cent from 2010. Metro Vancouver forecast that the vacant industrial land supply would be "substantially

[95] Penner, "Population Shrinking in Vancouver's High-Priced Single-Family Neighbourhoods."

absorbed" by 2030 and noted that even "before full depletion, the remaining land supply would be small, scattered parcels that would not be viable for larger industrial development."[96] On a brighter note, this same report suggests that some of the developed land might be available for further intensification. In general, the Metro Vancouver municipalities would be well advised to collectively consider how industrial land will be protected and administered.

Indeed, municipal cooperation on industrial land use planning could help internalize some important positive spinoffs from the start-up of new industrial facilities. These include spinoffs to other area municipalities from a facility located in another city. Another positive spinoff would be the potential improvement of the entire region's reputation as a good place for a given industry if a new firm contributes to a regional industrial cluster, which could be leveraged by a regional economic development agency.

Given the time-sensitive nature of investment attraction, and given its growing importance, increased cooperation among Metro Vancouver's constituent municipalities is required in issues pertaining to land use planning. In fact, this might well be an area where centralized decision-making could be ideal if higher cooperation is impossible to achieve.

[96] Metro Vancouver, *Metro Vancouver Industrial Lands Inventory*, 10.

10. Special Lens on Regional Coordination and Governance: Governance Scorecard and Best Practices

Chapter Summary

- This chapter ranks Greater Vancouver's good-governance enablers against seven other metropolitan areas. Greater Vancouver receives a letter grade of B, ranking third.
- We highlight four global best practices of regional governance.
- The Conference Board recommends that efforts to improve regional coordination reflect these best practices.

10.1 Scorecard

In previous chapters, the special lens qualitatively assessed Greater Vancouver's governance and service delivery framework. This section uses quantitative tools, namely a benchmarking exercise, to take our analysis one step further. But first, a note of caution. Comparing metropolitan areas with different governance and servicing structures on the quality, cost, or coverage of the services they provide to their citizens is a delicate exercise. This is because, as discussed above, the success of municipal service provision and delivery can often be evaluated only on a case-by-case basis. There are also two other reasons why comparisons are difficult:

1) Most municipalities use their own set of tools to address their servicing issues.
2) Service delivery often spills over the boundaries of a metropolitan area, making it difficult to quantify the exact cost and coverage of providing a specific service.

With these considerations in mind, we benchmark the quality of governance across metropolitan areas, giving us an indication of the relative strength of regional governance decision-making processes in the observed metropolitan areas, including Greater Vancouver. Even though the quality of governance does not necessarily lead to better provision and delivery of services, we suggest that it is a necessary condition to manage urban growth and address the issues we have highlighted. Better governance is also more likely to result in better regional coordination, which is key to managing growth and attracting businesses and people.

To avoid some of the pitfalls described above, we confine our benchmarking analysis to North American metro areas. Specifically, we compare the quality of Greater Vancouver's governance against major Canadian metropolitan areas (Toronto, Montréal, Calgary) against its Pacific Northwest competitors (Seattle and Portland) and against gateway metro regions with a major seaport (San Francisco, Halifax).

Table 21 presents the overall results from our governance benchmarking exercise. Greater Vancouver does well, ranking second and earning a B grade. The Seattle metropolitan area ranks first, with fewer local governments per 100,000 people than Vancouver and a higher percentage of women councillors than all the other metropolitan areas examined here. We delve into each indicator and their results below.

Table 21
Overall Governance Ranking, Selected Metropolitan Areas

Ranking	Metropolitan area	Grade
1	Seattle–Tacoma	A
2	Greater Vancouver	B
3	Halifax	B
4	Montréal	C
5	Toronto	C
6	San Francisco–Oakland–Hayward	C
7	Portland–Vancouver–Hillsboro	C
8	Calgary	D

The benchmarking methodology used here is the same as the one used for the overall ranking of this scorecard, except for the two indicators (regional transit agency and regional economic development agency) that are binary (either a yes or a no). Appendix 2 describes the methodology in more detail. We used the following indicators to produce the overall benchmarking score:

1. **Number of local governments per 100,000 population in the metropolitan area.** This indicator gives us a sense of how easy or difficult it is to coordinate across a metro region. We argue that the larger the number of governments, the greater the difficulty to align different interests and agendas for regional development. Montréal is a negative outlier for this indicator, with an automatic D-grade (since it has the largest number of local governments per 100,000 population). Vancouver ranks fifth out of eight, with a letter grade of C (1.73 governments per 100,000 people) and behind Calgary (1.43 governments per 100,000 people) and Seattle (1.50 governments per 100,000 people). Toronto ranks first, with 0.80 local governments per 100,000 people. We count the lowest-tier governments and general-purpose governments.

   Table 22
   Number of Local Governments per 100,000 Population

Ranking	Metropolitan area	Grade
1	Toronto	A
2	Halifax	A
3	Calgary	B
4	Seattle–Tacoma	B
5	Greater Vancouver	C
6	San Francisco–Oakland–Hayward	D
7	Portland–Vancouver–Hillsboro	D
8	Montréal	D

2. **Percentage of women councillors.** This indicator serves as a proxy for inclusivity. Research by The Conference Board of Canada and other researchers finds that companies with more female

representation in their boards of directors are more efficiently managed.[97] The same reasoning can be applied to publicly managed institutions like municipal councils. Because some metropolitan areas have many local governments, multiple-tiered governments, and overlap of elected officials at different levels of local government, we focus on the percentage of women councillors in the core city of the metropolitan area. Halifax ranks last, with women representing only 11.8 per cent of its council. Seattle ranks best on this indicator, as 66.7 per cent of its councillors are women. The City of Vancouver ranks fourth and earns a B grade, as women represent 45.5 per cent of the council.

Table 23
Percentage of Women Councillors

Ranking	Metropolitan area	Grade
1	Seattle–Tacoma	A
2	San Francisco–Oakland–Hayward	A
3	Portland–Vancouver–Hillsboro	B
4	Greater Vancouver	B
5	Montréal	C
6	Toronto	C
7	Calgary	D
8	Halifax	D

3. **Own-source revenues as a share of total local government revenues.** In our view, municipalities with greater financial and fiscal autonomy that rely less on external sources of revenue are more likely to exhibit good governance. International experience suggests "that the most responsible and accountable local governments are those that raise their own revenues and set their own tax rates."[98] Tax autonomy may also promote efficiency because there is some evidence that local governments "are inclined to use their own resources more wisely than if their funding comes from another level of government."[99] Since municipal accounts data for metropolitan areas are not available, we use state and provincial local general government revenues as a proxy. This means we assume that all local governments within a state or a province will have similar levels of own-source revenue. The state of Washington (Seattle–Tacoma metropolitan area) ranks first with 64.4 per cent of its local general governments' revenues being own-sourced. British Columbia (Vancouver metropolitan area) ranks third, with 63.3 per cent. Calgary and the San Francisco metropolitan area obtain automatic D grades as outliers.

Table 24

[97] Burnett Vachon and Lavis, *Women in Leadership*; Credit Suisse Research Institute, *Gender Diversity and Corporate Performance.*
[98] Slack, *How Much Local Fiscal Autonomy Do Cities Have?* 3.
[99] Ibid.

Percentage of Own-Source Revenue

Ranking	Metropolitan area	Grade
1	Seattle–Tacoma	A
2	Montréal	A
3	Greater Vancouver	A
4	Halifax	B
5	Portland–Vancouver–Hillsboro	C
6	Toronto	D
7	Calgary	D
8	San Francisco–Oakland–Hayward	D

Note: The Portland–Vancouver–Hillsboro metropolitan statistical area spans two states (Oregon and Washington), so we used a population-weighted average to estimate its percentage of own-source revenue.

4. **Regional economic agency.** This indicator is a binary variable, taking a value of zero if there is no regional economic development agency and a value of one if such a body exists. We argue that a single regional economic development agency is key to promoting a metropolitan area's economic growth. The presence of such an agency is an indicator of higher coordination, competence, and inclusivity of the municipalities within a metro area. Only three out of the eight metropolitan areas do not have a regional economic agency encompassing the entirety of their boundaries and are assigned a zero: Vancouver, Toronto, and Seattle. All other metro areas area assigned a one.

5. **Regional transit agency.** This indicator is also a binary variable, taking a value of zero if there is no regional transit agency and a value of one if there is a regional transit agency. A regional transit agency is an indicator of coordination between the municipalities within a metro area. Research suggests that strategic decision-making and implementation is likely more time-efficient when the main decision-making body is a regional transit agency than when multiple local transit agencies attempt to coordinate across municipal borders. Three out of the eight metropolitan areas do not have a regional transit agency encompassing the entirety of their boundaries: Calgary, Portland, and Seattle. Greater Vancouver scores a one given the presence of TransLink.

What is the bottom line? The benchmarking analysis suggests that Greater Vancouver has a good foundation when it comes to good governance enablers, earning an honorable B grade. This analysis shows that even though Greater Vancouver is highly fragmented (with many local governments per 100,000 population), a high percentage of women councillors, a high percentage of own-source revenue, and the presence of a regional transit agency help offset this fragmentation.

However, as discussed previously, there are areas where Vancouver can improve its regional governance quality. Indeed, this scorecard ranking evaluates only the presence or lack thereof of necessary elements for quality governance. The next section builds on our previous discussion of Greater Vancouver's regional governance structure—and regional issues—by formulating best practices to improve regional coordination.

10.2 Best Practices

This chapter concludes with a description of best practices that should be taken into account when any type of governance reform at the municipal or regional level is considered. It is difficult to provide a step-by-step guide to successful solutions to regional issues, since one-size-fits-all solutions do not exist. However, this scorecard highlights key practices that make region-wide planning and decision-making more effective and service provision and delivery solutions more likely to succeed:

1. A decentralized form of metropolitan governance can maintain local government autonomy and keep decision-making close to constituents while still addressing regional issues. Clear authority is key to keeping such a structure functioning.

2. Municipal participation in regional coordination should be voluntary. This increases flexibility over which services should be shared or delegated, as well as with whom a municipality enters an agreement. Even for services that in our view should be centralized in most city-regions—transit, economic development, and policing—municipalities' buy-in is preferable to a federally or provincially imposed solution. Most—if not all—cases of imposed cooperation (i.e., amalgamation) in Canada have yielded underwhelming results, with promised benefits rarely materializing.

3. Competition is the key determinant of cost savings in service delegation or sharing arrangements. This means it does not matter if a municipality is outsourcing services to the private sector or to a neighbouring municipality, as long as there is enough competition to identify the most efficient provider.

4. Provincial governments have a key role. They should balance the services municipalities are required to provide with their ability to fund them. They should also support collaboration and cooperation between municipalities in order for local governments to better address service delivery pressures in response to the rapid growth experienced in Canada's major urban centres.

5. There is more than one way to successfully address municipal service delivery and governance issues. Each possibility involves trade-offs, so it is crucial to evaluate solutions on a case-by-case basis.

Although two regional bodies currently represent Greater Vancouver—Metro Vancouver and TransLink—even greater intermunicipal cooperation is warranted, since local fragmentation continues to exacerbate many of Greater Vancouver's most pressing issues. If attempts are made to reform governance structures and practices within and between Greater Vancouver institutions, The Conference Board of Canada recommends they reflect the best practices described above.

11. Conclusion

Chapter Summary

- This scorecard assesses Greater Vancouver's performance relative to 19 international metropolises on a package of 22 economic and 16 social indicators.
- Greater Vancouver's rank on this scorecard improved to seventh place in 2018 from ninth in 2016 (although Canadian rival Toronto moved up even further—from 10th to sixth).
- Despite decent economic and political prospects, Greater Vancouver could do even better by addressing nagging issues in both realms and enhancing regional cooperation.

This scorecard updates our 2016 comparison of Greater Vancouver's position on key economic and social indicators with that of 19 other international metropolitan areas. The goal of this benchmarking is to grade Vancouver's competitiveness and attractiveness to both businesses and people—key underpinnings of future prosperity and growth. Our report presents separate economic and social rankings of our municipalities, them combines these into an overall score. We pay particular attention to changes since 2016.

Our overall assessment is generally positive for Greater Vancouver—the region places seventh on the ranking of 20 metro regions—up from ninth in our 2016 evaluation. Nonetheless, Greater Vancouver continues to trail overall leader Singapore by a significant margin and Canadian counterparts Calgary and Toronto by a lesser amount. It does come ahead of Montréal and Halifax.

This clearly indicates room for improvement; poor scores on some indicators warn against complacency. Greater Vancouver still faces significant challenges to remain competitive in the quest for knowledgeable and mobile talent and thus to maintain its economic vitality. This contest is intensified by commencement of the baby-boom generation's retirement.

In the economy category, Greater Vancouver jumps from ninth place in Scorecard 2016 to seventh place in Scorecard 2018 and earns a B grade, although many issues we identified earlier remain. Areas of concern include relatively low marks for its marginal effective tax rate on capital investment (made worse by major U.S. tax reform), weak labour productivity, low real GDP per person, after-tax income per capita, a small market size, and a relative failure to attract both participants in international association meetings and international visitors. Still, better news is found elsewhere. Greater Vancouver places fourth in a group of 14 metro areas for which we have data on KPMG's total tax index (a measure of total taxes paid by similar corporations); it also does well by having relatively low office rents and healthy port cargo tonnage and port container traffic. Moreover, between 2016 and 2018, Greater Vancouver improved is position on indicators measuring the strength of the high-tech sector.

Greater Vancouver also performs generally well on some of the indicators that directly measure economic performance. The region ranks fairly high on real GDP per capita growth, labour productivity growth, and the unemployment rate. Implementation of the Comprehensive and Progressive Agreement for Trans-Pacific Partnership trade deal (a resurrection of the Trans-Pacific Partnership) should provide a

further lift to Greater Vancouver's economy over the medium and long term. Although the U.S. is no longer part of the agreement, Canada and the 10 remaining TPP countries concluded discussions and finalized the text of an agreement in January. This should remove tariffs on important British Columbia exports, including steel and iron, fish and seafood, agriculture and agri-food, and wood and forestry products. The deal would also facilitate temporary foreign entry for Canadian business people, smooth the way for many service suppliers, and set clear rules for Canadian investors.

In the social evaluation, Greater Vancouver ranks eighth and earns a B grade because of its high foreign-born population share, low homicide rate, good air quality, and democratic values. Greater Vancouver's score was pulled lower by its relatively small light-rail network and its deteriorating housing affordability. A $1.4-billion expansion of the SkyTrain service should help improve scores on both these indicators—the former directly and the latter by bringing more distant homes within acceptable commuting range.

Our evaluation of Greater Vancouver's regional coordination and governance starts with the premise that greater coordination among area municipalities is needed to address regional challenges. We identified this as an issue in Scorecard 2016, but coordinated action remains disappointing. Items that could probably benefit from better intermunicipal collaboration include poor housing affordability, lacklustre head office attraction, underinvestment in public transit and roads, and a lack of available port and industrial land. Progress on these fronts, we argue, could increase the area's attractiveness to foreign investment and mobile skilled workers, while decreasing the duplication of effort.

This governance examination also assesses three models through which governments could provide regional services: amalgamation, private outsourcing, and intermunicipal cooperation. Amalgamation seems like the worst bet because of upward harmonization of service delivery and employee remuneration, failure to achieve scale economies, and lack of intermunicipal competition. Outsourcing can save money under certain circumstances, but it needs to be closely monitored. Municipal cooperation can offer local autonomy and regional vision, but frequently suffers various "too many cooks" ailments and significant transaction costs.

Although the Greater Vancouver economy has grown strongly in recent years, we argue the area could do even better if its regional challenges were addressed, particularly with coordinated action from Greater Vancouver's component municipalities. Some of these challenges are real economic impediments, including poor housing affordability, low labour productivity, and inadequate infrastructure investment. We recommend that efforts to improve regional coordination, whatever they may be and whenever they may start, should adhere to current best practices. It would be tragic if regional coordination issues remained obstacles that hindered the region's ability to realize the benefits of being a transportation gateway and impaired the arrival of talented people and business investment—all signposts on the march to greater prosperity.

Appendix 1: Benchmarking Methodology

The overreaching goal of the scorecard is to provide a comprehensive overview of the Greater Vancouver metro area's performance in relation to 19 international metropolises on key economic and social indicators. We benchmark the features that make these cities attractive to businesses and skilled workers, thereby revealing Greater Vancouver's relative competitive strengths and weaknesses. Therefore, this scorecard should help the Greater Vancouver Board of Trade identify priority areas for policy advocacy.

To gauge Greater Vancouver's performance, The Conference Board of Canada used its standard methodology for benchmarking. The Conference Board of Canada has been a Canadian leader in benchmarking analysis since it began producing its flagship *Performance and Potential* reports in 1996. Renamed *How Canada Performs* in 2007, this multi-year research program identifies relative strengths and weaknesses in the socio-economic performance of Canada and its provinces and territories. Following in the footsteps of *How Canada Performs*, the Centre for Municipal Studies began producing metro-level benchmarking reports in 2007.

Metropolitan Area Selection Process

The first step involved selecting which metropolitan areas to include in the benchmark analysis. The selection of cities was done in consultation with the Greater Vancouver Board of Trade and evolved over a period of months to enable a test run for data availability. In the end, 20 metropolitan areas, including Greater Vancouver, were chosen. All the selected metropolitan areas meet one or more of the following criteria:

- The metropolitan area is a gateway metro region and contains a major seaport within its boundaries (Hong Kong, Sydney, Seoul, Shanghai, Singapore, Rotterdam, San Francisco, Los Angeles, Miami, Houston, Halifax).
- The metro region is one of Greater Vancouver's Canadian competitors (Calgary, Montréal, Toronto, Halifax).
- The metro region is one of Greater Vancouver's Pacific Northwest competitors (Seattle and Portland).
- The metro region is comparatively sized to Greater Vancouver (Manchester, Portland, Copenhagen).
- The metro region is in a rapidly emerging economy (Shanghai).
- The metropolitan area is a popular tourist destination (Hong Kong, Miami, Barcelona, Los Angeles, and Singapore).

Indicator Selection Process

The second step involved selecting which indicators to include in the analysis. Like the comparator regions, the indicators were selected in consultation with the Greater Vancouver Board of Trade.

The search for indicators began with a commitment to find measures that influence Greater Vancouver's attractiveness to both individuals and businesses. The indicators that were selected provide valuable information about the performance or status of a metropolitan area within a category, either as a direct

output (e.g., disposable income) or a proxy measure (e.g., proportion of the workforce employed in cultural occupations as a proxy for access to culture) and were tested by the Conference Board for availability and reliability. A total of 32 indicators were chosen for the two categories: economy and social.

Unfortunately, it was impossible to collect data on all 32 indicators for every metropolitan area, mainly because of data incomparability. However, all 32 indicators were available for the Vancouver region. All data sources were rigorously screened to ensure that each indicator for the international cities had the same definition as its Canadian counterpart. In other words, we wanted to avoid an "apples to oranges" comparison. All international data were converted to U.S. dollars using OECD purchasing power parity exchange rate estimates for the given year.

Benchmarking studies use annual historical data as a means of comparison. Given that this study was launched in the summer of 2015, data beyond the year 2014 were unavailable for any of the indicators. This does not imply, however, that the results of this study are compromised. A benchmarking analysis, by definition, is a relative comparison. Therefore, it is reasonable to assume that if 2015 full-year data were included in this study, the overall rankings would remain stable.

Ranking Method

This study uses a report card–style ranking of A–B–C–D to assess the performance of metropolitan areas for each indicator. We assigned a grade level using the following method: for each indicator, we calculated the difference between the top and bottom performer and divided this figure by four. A metropolitan area received a scorecard ranking of A on a given indicator if its score was in the top quartile, a B if its score was in the second quartile, a C if its score was in the third quartile, and a D if its score was in the bottom quartile. A metropolitan area was assigned an "n.a." if data were unavailable for that indicator.

For example, on the labour attractiveness indicator "cultural occupations," the top performer (Copenhagen) had 7.9 per cent of its workforce employed in cultural occupations in 2013, while the bottom performer (Shanghai) had only 0.7 per cent. Applying the method for scoring yields the following ranges for each grade:

A: 6.1–7.0 per cent

B: 4.3–6.0 per cent

C: 2.5–4.2 per cent

D: 0.7–2.4 per cent

(Note: In this example, a high score indicates a high level of performance. For indicators where a low score signifies a high level of performance—such as on housing affordability—the ranking levels are reversed, i.e., the highest result receives the lower grade.)

Each indicator was also carefully screened for outliers. In a handful of cases, one metro region scored so well that it left nearly every other metro area garnering a C or D grade. Conversely, some scores were so poor that they left nearly every other metro area with an A or B grade.

How did we tackle this issue? When an outlier resulted in a skewed distribution of grades, we removed that metro region when calculating the grades. In other words, obvious outliers were eliminated from the grading calculation using the following method:

1) the outlier was attributed a letter grade (an A or a D depending on whether it negatively or positively skewed the grades);
2) the top and bottom performers were identified among the remaining metro regions, and the grading method described above was applied.

For example, on the indicator "number of participants in international association meetings," Barcelona was identified as an outlier and was assigned an A grade. In 2014, it hosted 127,469 participants in international association meetings, more than twice the number of second-place Copenhagen. Among the remaining 18 metro regions, the top performer was now considered to be Copenhagen, which had 57,551 participants in 2014, while the bottom performer was Houston, which had only 1,826. Applying the method for grading, the ranges for A–B–C–D are:

A: 43,621–57,551 participants

B: 29,690–43,620 participants

C: 15,758–29,689 participants

D: 1,826–15,757 participants

Failure to identify Barcelona as an outlier would have resulted in Barcelona earning the lone A grade and all other metro regions scoring a C or D grade on this indicator. No metro region would have received a B.

It must be emphasized that two cities getting an A grade do not necessarily perform equally according to this methodology. In the example above, a metro region with 57,000 participants would get an A grade in the same way that a metro region with 43,700 participants would. However, when we establish a ranking of cities, the metro region with 57,000 participants would place higher than the one with 43,700, even if they both get an A grade. Thus, in the tables, when looking at cities with the same letter grade, the one with the higher score is listed first. It must also be emphasized that the rankings for each indicator are relative. A metro region receives an A grade because it outperforms all other cities in our sample, not because it is necessarily a global leader.

Category Rankings and Overall Score

The overall category rankings are based on a composite index (an average of the normalized scores for each indicator in the specific category). In other words, the top-ranking metropolitan area for a given indicator will receive a 1, while the bottom-ranking metropolitan area will receive a 0.

To use the example above, a score of 1 would be attributed to Barcelona given that it leads all other metro regions with 127,469 participants. With Barcelona being an outlier, a score of 1 would also be assigned to second-ranked Copenhagen, which hosted 57,551 participants in 2014. Meanwhile, a zero would be attributed to Houston given that it ranks last with 1,826 participants.

Using the formula, Barcelona's score of 1 = (57,551 – 1,826) ÷ (57,551 – 1,826), Houston's score of 0 = (1,826 – 1,826) ÷ (57,551 – 1,826), and a metropolitan area with 20,401 participants, for example, would get a score of 0.33 = (20,401 – 1,826) ÷ (57,551 – 1,826).

To calculate a category ranking, the metropolitan areas were then ranked according to their composite index scores. No attempt was made to give explicit differential weights to indicators according to importance: we are implicitly giving equal weight to each indicator. We assigned a grade level to the overall category performance using the following method: we calculated the difference between the category composite index of the top and bottom performer and divided this figure by four. A metropolitan area received a scorecard rating of A for the category if its score was in the top quartile, a B if its score was in the second quartile, a C if its score was in the third quartile, and a "D if its score was in the bottom quartile.

An overall ranking was established by taking a weighted average of the economy and social category scores. We did not assign an explicit differential weight to each category. Thus, each category was assigned a weight of 0.5.

Finally, it is important to note that although we generate an overall score that ranks each metro area based on the scores from the economy and social categories, we do not create an overall composite letter grade. The two categories cover entirely different sets of indicators, so assigning an overall grade would falsely assume that the two categories can be aggregated.

Methodological Note on Special Lens Benchmarking

The overall ranking is based on a composite index of indicators 1 and 2 (an average of the normalized scores for each indicator) with penalties applied to the final score if indicators 3 or 4 take a value of 0. For metropolitan areas obtaining the same letter grade, the ranking is based on their composite index score (including penalties).

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255 Smyth Road, Ottawa ON
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