

January 10, 2019

Presentation to the Canadian Economic Club – January 9, 2019

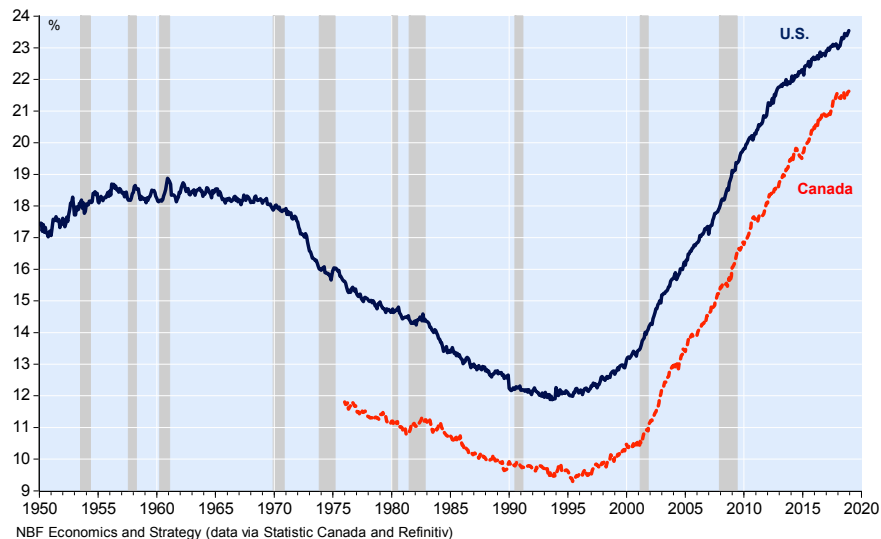
By Stéfane Marion

It's humbling to be an economist trying to forecast the path of our economic life in the midst of unprecedented demographic change and the rapid introduction of innovative technologies. The structure of the economy has evolved dramatically since the 2008 financial crisis and I'm not sure that economic models have been properly calibrated to account for these changes. Also, policymakers may not grasp how much is at stake.

1. Over the past decade, workers aged 55+ have surged from 16% of total employment to a record 22% (24% in the U.S.) and that share will keep growing. **Message to central banks: don't expect much in terms of wage inflation.** This cohort of workers is not prone to ask for pay increases and its turnover is much lower than that of other age groups.

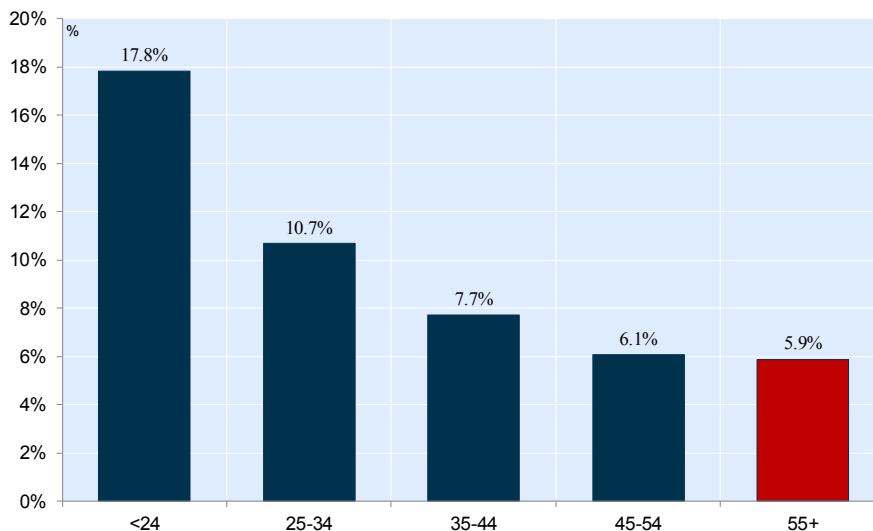
World: An aging workforce

Share of workers aged 55+ in total employment



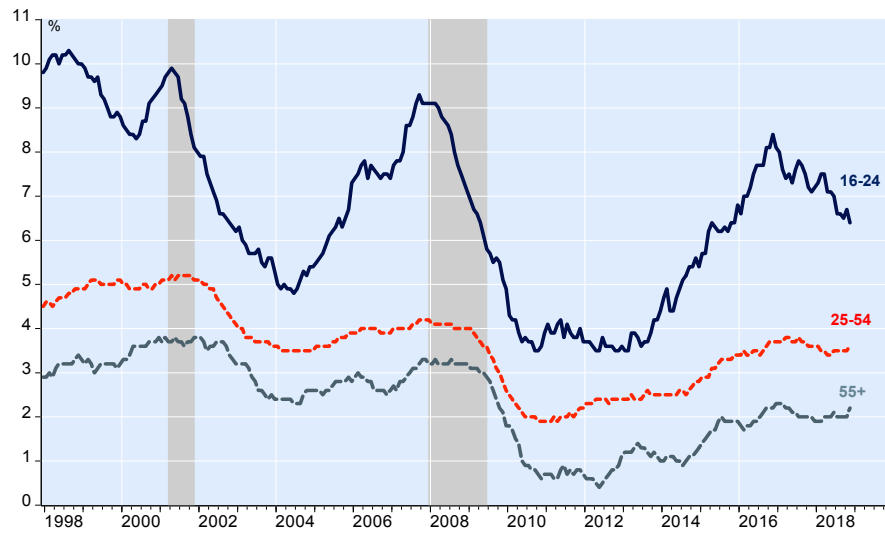
U.S.: Labour turnover rate is lower for older workers

Turnover rate by age group



U.S.: Wage increases are smaller for older workers

12-month moving average of median wage growth



NBF Economics and Strategy (data via <https://www.frbatlanta.org/chcs/wage-growth-tracker?panel=1>)

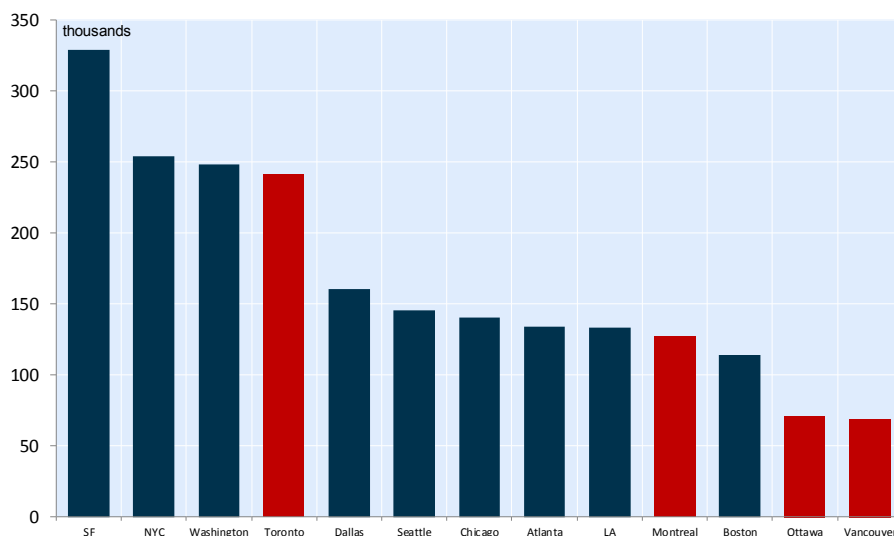
2. At the same time, the rapid shift of the economy toward the innovation sector is forcing us to reassess how we read the economic tea leaves (remember, the iPhone was introduced just a decade ago). What does it all mean?

In the previous century, competition was about accumulating physical capital. *Today, it's about attracting the best human capital.* So perhaps we should stop fretting about muted growth of traditional business investment in machinery and equipment.

But the knowledge economy tends to cluster in large urban areas for their thick labour markets and knowledge spillovers. **The GTA is on the verge of becoming the second largest tech talent pool in North America, second only to the San Francisco Bay area.** Montreal is now in the top 10 and Vancouver and Ottawa are not far behind (chart).

Canada: Tech talent pool on the rise

Tech talent labour pool in metropolitan areas (Canada and the U.S.)*

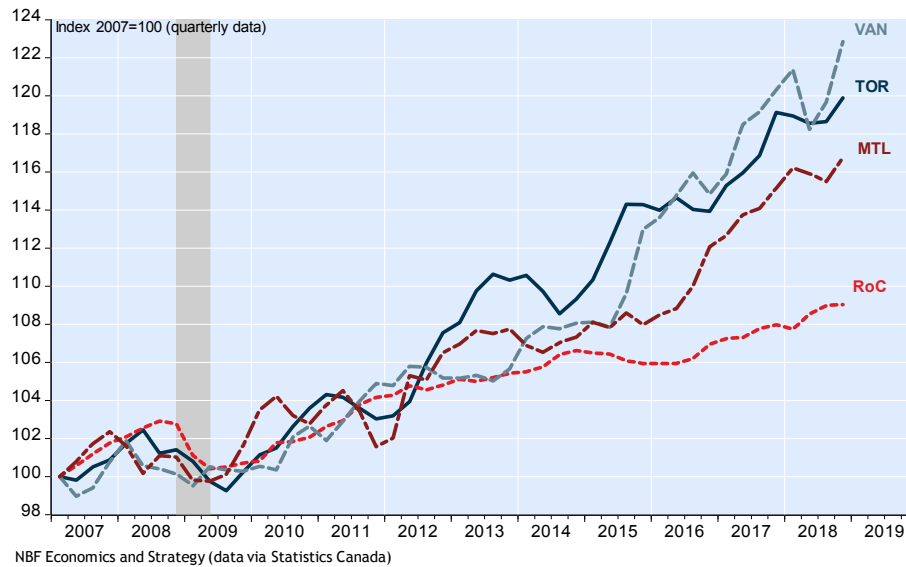


* Software developers, programmers, computer support, database & systems, technology & engineering related, computer & information system managers
NBF Economics and Strategy (data via CBRE)

Enrico Moretti estimates that the innovation sector has a multiplier effect three times greater than that of manufacturing.¹ That helps explain why Toronto, Montreal, and Vancouver currently account for a disproportionate share of job creation in Canada – 60% in the last decade and 74% in the last three years (chart). The need to upgrade and build new infrastructure will remain an issue for the foreseeable future. Housing supply will also be a big issue for these metropolitan areas.

Canada: Job creation in the main cities

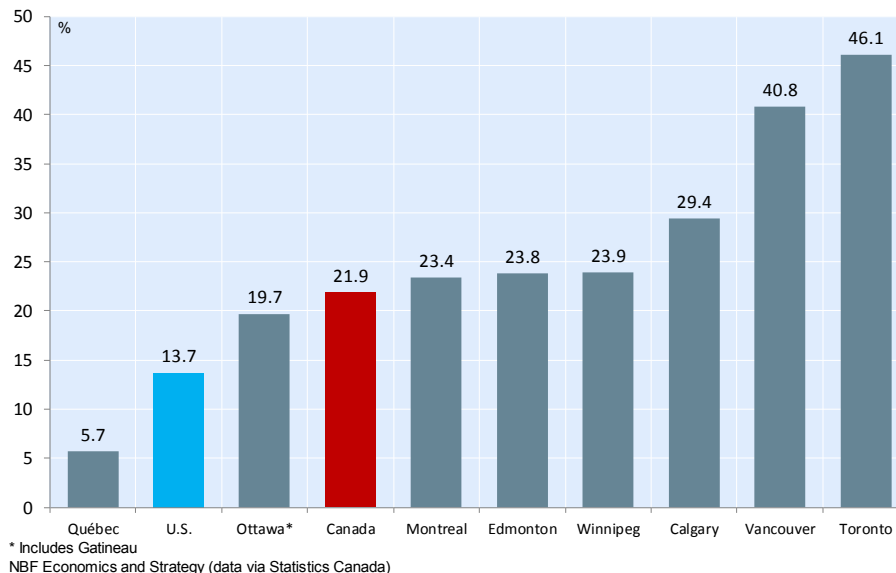
Job creation in greater Vancouver, greater Toronto, greater Montreal and rest of Canada (RoC)



Immigration has been a key source of labour supply. **Skilled immigrants generate substantial local spillovers (46% of Toronto’s population is foreign born – chart). Some 70% of Canada’s population growth is due to immigration, and more than 60% of immigrants aged 15–64 have post-secondary education – the highest proportion in the world (chart). Canada has turned out to be the world’s most successful talent poacher.**

Canada: Perspective on foreign-born population

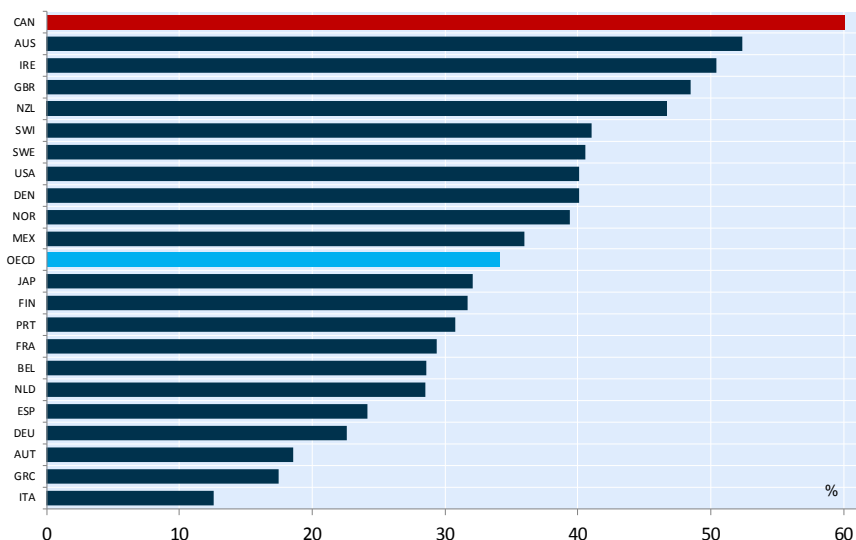
Foreign-born population as a share of total



¹ Enrico Moretti, “The new geography of jobs” (2013).

Canada: The most educated immigrants in the world

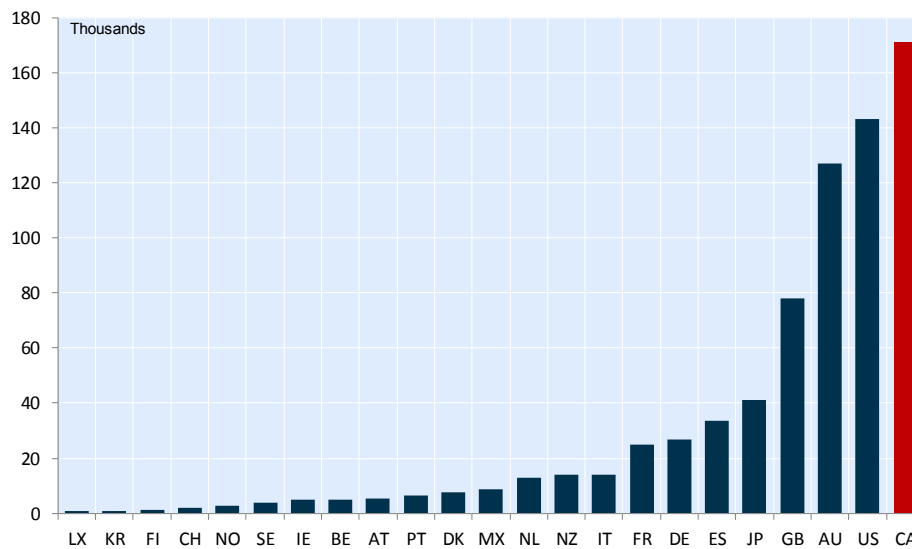
Percentage of foreign-born 15-64 with post-secondary education



NBF Economics and Strategy (Indicators of Immigrant Integration 2018: Settling In - © OECD 2018, figure 3.1)

Canada: Highest inflow of workforce-ready immigrants in the OECD

Annual "economic category" admissions to permanent residence (2015)

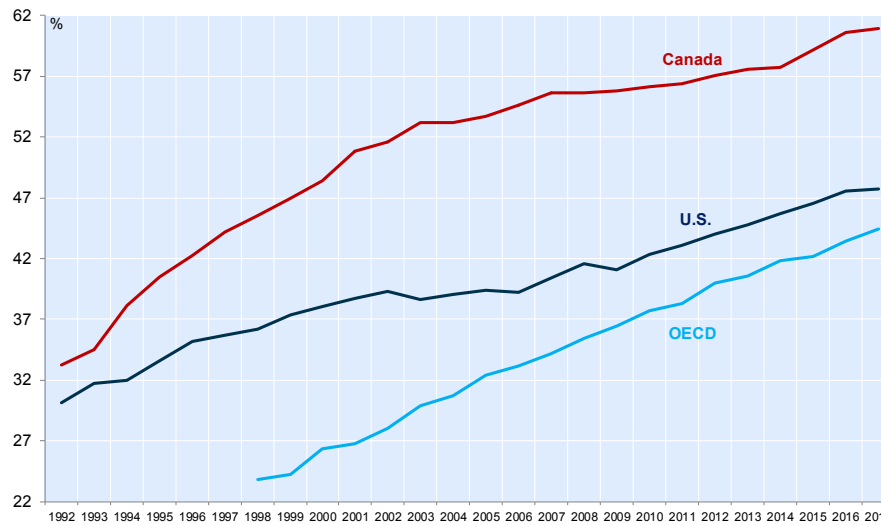


NBF Economics and Strategy (OECD data <https://data.oecd.org/migration/permanent-immigrant-inflows.htm#indicator-chart>)

This has served us well. More than 60% of our total population aged 25-34 has post-secondary education, the highest percentage of any OECD country and a massive 13 percentage points higher than the U.S. percentage.

Canada: An educated workforce can support higher debt

Share of population aged 25-34 with tertiary education

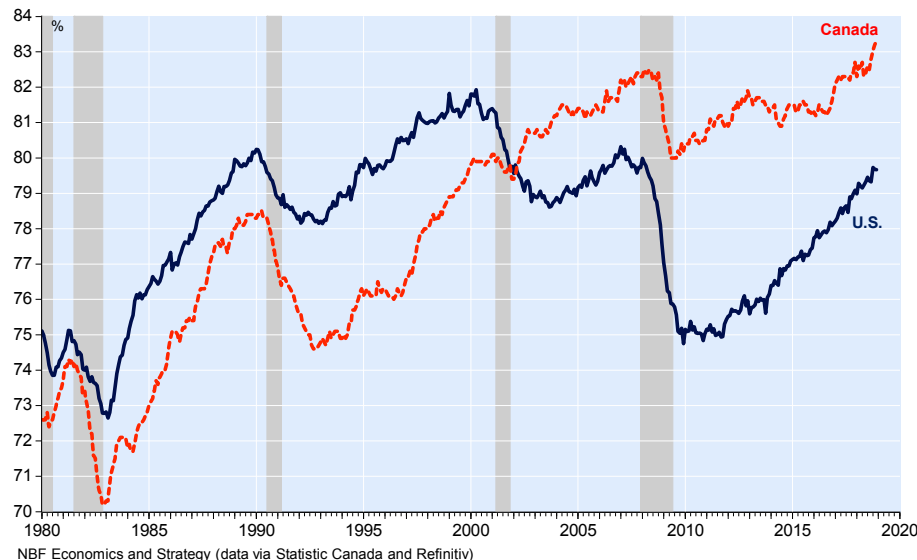


NBF Economics and Strategy (OECD data via <https://data.oecd.org/eduatt/population-with-tertiary-education.htm>)

An educated workforce is key to maximizing the employment rate of prime-aged Canadians, which last month exceeded **83% for the first time ever**. That's a whopping 4 percentage points higher than the U.S. rate (a difference equivalent to 5 million U.S. workers). Canadian labour markets have done a superb job of adapting to globalization and technological changes. That's the story of our resilience.

Canada: Record employment for prime-aged workers

Employment-to-population ratio for people aged 25-54

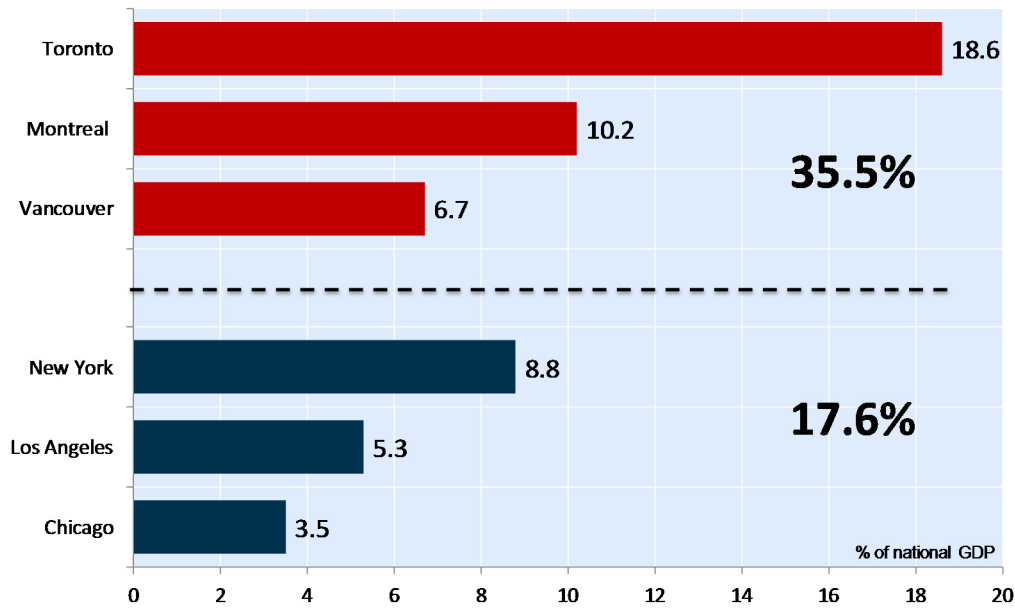


NBF Economics and Strategy (data via Statistic Canada and Refinitiv)

But there's a flip side. Canada's big-three metro areas (GTA, Montreal, Vancouver) account for 35.5% of our country's economic output, compared to only 17.6% for the U.S. big three (NYC, LA, Chicago).

Canada: Extreme concentration

Share of national output accounted by top-3 metropolitan areas: Canada vs. the U.S.



NBF Economics and Strategy (data via BEA and Statistics Canada)

This development has led to large decline in the social acceptance of developing Canada’s all-important resource sector. City dwellers nowadays have a sense of entitlement to the use of rural areas only as their playground.

The International Institute for Sustainable Development quotes the United Nations as ranking Canada first among G7 countries in comprehensive wealth, thanks to its vast reserves of natural capital. Canada has nearly five times the natural capital per capita of the next best-endowed G7 country (the U.S.). If not for its natural resources, Canada would fall near the bottom of the G7 group in comprehensive wealth.

Why are we ashamed of exploiting our resources when we are so blessed to have them? It’s high time that people in Canada’s large metropolitan areas be better informed of the key role of the resource sector in the funding of our social programs. The responsible exploitation of our resources is critical to a fair distribution of wealth and to the socioeconomic well-being of regions.

Economics and Strategy

Montreal Office

514-879-2529

Stéfane Marion

Chief Economist and Strategist
stefane.marion@nbc.ca

Matthieu Arseneau

Deputy Chief Economist
matthieu.arseneau@nbc.ca

Krishen Rangasamy

Senior Economist
krishen.rangasamy@nbc.ca

Paul-André Pinsonnault

Senior Fixed Income Economist
paulandre.pinsonnault@nbc.ca

Marc Pinsonneault

Senior Economist
marc.pinsonneault@nbc.ca

Kyle Dahms

Economist
kyle.dahms@nbc.ca

Jocelyn Paquet

Economist
jocelyn.paquet@nbc.ca

Angelo Katsoras

Geopolitical Analyst
angelo.katsoras@nbc.ca

Toronto Office

416-869-8598

Warren Lovely

MD & Head of Public Sector Strategy
warren.lovely@nbc.ca

General

This Report was prepared by National Bank Financial, Inc. (NBF), (a Canadian investment dealer, member of IIROC), an indirect wholly owned subsidiary of National Bank of Canada. National Bank of Canada is a public company listed on the Toronto Stock Exchange.

The particulars contained herein were obtained from sources which we believe to be reliable but are not guaranteed by us and may be incomplete and may be subject to change without notice. The information is current as of the date of this document. Neither the author nor NBF assumes any obligation to update the information or advise on further developments relating to the topics or securities discussed. The opinions expressed are based upon the author(s) analysis and interpretation of these particulars and are not to be construed as a solicitation or offer to buy or sell the securities mentioned herein, and nothing in this Report constitutes a representation that any investment strategy or recommendation contained herein is suitable or appropriate to a recipient's individual circumstances. In all cases, investors should conduct their own investigation and analysis of such information before taking or omitting to take any action in relation to securities or markets that are analyzed in this Report. The Report alone is not intended to form the basis for an investment decision, or to replace any due diligence or analytical work required by you in making an investment decision.

This Report is for distribution only under such circumstances as may be permitted by applicable law. This Report is not directed at you if NBF or any affiliate distributing this Report is prohibited or restricted by any legislation or regulation in any jurisdiction from making it available to you. You should satisfy yourself before reading it that NBF is permitted to provide this Report to you under relevant legislation and regulations.

National Bank of Canada Financial Markets is a trade name used by National Bank Financial and National Bank of Canada Financial Inc.

National Bank Financial Inc. or an affiliate thereof, owns or controls an equity interest in TMX Group Limited ("TMX Group") and has a nominee director serving on the TMX Group's board of directors. As such, each such investment dealer may be considered to have an economic interest in the listing of securities on any exchange owned or operated by TMX Group, including the Toronto Stock Exchange, the TSX Venture Exchange and the Alpha Exchange. No person or company is required to obtain products or services from TMX Group or its affiliates as a condition of any such dealer supplying or continuing to supply a product or service.

Canadian Residents

NBF or its affiliates may engage in any trading strategies described herein for their own account or on a discretionary basis on behalf of certain clients and as market conditions change, may amend or change investment strategy including full and complete divestment. The trading interests of NBF and its affiliates may also be contrary to any opinions expressed in this Report.

NBF or its affiliates often act as financial advisor, agent or underwriter for certain issuers mentioned herein and may receive remuneration for its services. As well NBF and its affiliates and/or their officers, directors, representatives, associates, may have a position in the securities mentioned herein and may make purchases and/or sales of these securities from time to time in the open market or otherwise. NBF and its affiliates may make a market in securities mentioned in this Report. This Report may not be independent of the proprietary interests of NBF and its affiliates.

This Report is not considered a research product under Canadian law and regulation, and consequently is not governed by Canadian rules applicable to the publication and distribution of research Reports, including relevant restrictions or disclosures required to be included in research Reports.

UK Residents

This Report is a marketing document. This Report has not been prepared in accordance with EU legal requirements designed to promote the independence of investment research and it is not subject to any prohibition on dealing ahead of the dissemination of investment research. In respect of the distribution of this Report to UK residents, NBF has approved the contents (including, where necessary, for the purposes of Section 21(1) of the Financial Services and Markets Act 2000). This Report is for information purposes only and does not constitute a personal recommendation, or investment, legal or tax advice. NBF and/or its parent and/or any companies within or affiliates of the National Bank of Canada group and/or any of their directors, officers and employees may have or may have had interests or long or short positions in, and may at any time make purchases and/or sales as principal or agent, or may act or may have acted as market maker in the relevant investments or related investments discussed in this Report, or may act or have acted as investment and/or commercial banker with respect hereto. The value of investments, and the income derived from them, can go down as well as up and you may not get back the amount invested. Past performance is not a guide to future performance. If an investment is denominated in a foreign currency, rates of exchange may have an adverse effect on the value of the investment. Investments which are illiquid may be difficult to sell or realise; it may also be difficult to obtain reliable information about their value or the extent of the risks to which they are exposed. Certain transactions, including those involving futures, swaps, and other derivatives, give rise to substantial risk and are not suitable for all investors. The investments contained in this Report are not available to retail customers and this Report is not for distribution to retail clients (within the meaning of the rules of the Financial Conduct Authority). Persons who are retail clients should not act or rely upon the information in this Report. This Report does not constitute or form part of any offer for sale or subscription of or solicitation of any offer to buy or subscribe for the securities described herein nor shall it or any part of it form the basis of or be relied on in connection with any contract or commitment whatsoever.

This information is only for distribution to Eligible Counterparties and Professional Clients in the United Kingdom within the meaning of the rules of the Financial Conduct Authority. NBF is authorised and regulated by the Financial Conduct Authority and has its registered office at 71 Fenchurch Street, London, EC3M 4HD.

NBF is not authorised by the Prudential Regulation Authority and the Financial Conduct Authority to accept deposits in the United Kingdom.



U.S. Residents

With respect to the distribution of this report in the United States of America, National Bank of Canada Financial Inc. ("NBCFI") which is regulated by the Financial Industry Regulatory Authority (FINRA) and a member of the Securities Investor Protection Corporation (SIPC), an affiliate of NBF, accepts responsibility for its contents, subject to any terms set out above. To make further inquiry related to this report, or to effect any transaction, United States residents should contact their NBCFI registered representative.

This report is not a research report and is intended for Major U.S. Institutional Investors only.

This report is not subject to U.S. independence and disclosure standards applicable to research reports.

HK Residents

With respect to the distribution of this report in Hong Kong by NBC Financial Markets Asia Limited ("NBCFMA") which is licensed by the Securities and Futures Commission ("SFC") to conduct Type 1 (dealing in securities) and Type 3 (leveraged foreign exchange trading) regulated activities, the contents of this report are solely for informational purposes. It has not been approved by, reviewed by, verified by or filed with any regulator in Hong Kong. Nothing herein is a recommendation, advice, offer or solicitation to buy or sell a product or service, nor an official confirmation of any transaction. None of the products issuers, NBCFMA or its affiliates or other persons or entities named herein are obliged to notify you of changes to any information and none of the foregoing assume any loss suffered by you in reliance of such information.

The content of this report may contain information about investment products which are not authorized by SFC for offering to the public in Hong Kong and such information will only be available to, those persons who are Professional Investors (as defined in the Securities and Futures Ordinance of Hong Kong ("SFO")). If you are in any doubt as to your status you should consult a financial adviser or contact us. This material is not meant to be marketing materials and is not intended for public distribution. Please note that neither this material nor the product referred to is authorized for sale by SFC. Please refer to product prospectus for full details.

There may be conflicts of interest relating to NBCFMA or its affiliates' businesses. These activities and interests include potential multiple advisory, transactional and financial and other interests in securities and instruments that may be purchased or sold by NBCFMA or its affiliates, or in other investment vehicles which are managed by NBCFMA or its affiliates that may purchase or sell such securities and instruments.

No other entity within the National Bank of Canada group, including National Bank of Canada and National Bank Financial Inc, is licensed or registered with the SFC. Accordingly, such entities and their employees are not permitted and do not intend to: (i) carry on a business in any regulated activity in Hong Kong; (ii) hold themselves out as carrying on a business in any regulated activity in Hong Kong; or (iii) actively market their services to the Hong Kong public.

Copyright

This Report may not be reproduced in whole or in part, or further distributed or published or referred to in any manner whatsoever, nor may the information, opinions or conclusions contained in it be referred to without in each case the prior express written consent of NBF.