

# China: Canada's Strategic Imperative

Dan Ciuriak

## Key Points

- China continues to grow in strategic importance as a trade and innovation partner: it features untapped growth potential from internal integration and is underwriting East Asian regional integration through initiatives such as the One Belt, One Road trade corridor, the Asian Infrastructure Investment Bank and the Regional Comprehensive Economic Partnership Agreement.
- From the cocoon of an aging developing economy, a new China is emerging — young, urban, university-trained and tech savvy.
- Driven by its singular focus on technological advance, and fuelled by heavy research and development (R&D) spending and a rapidly growing R&D workforce, China is becoming an innovation hub.
- China wants a free trade agreement (FTA) with Canada; as globalization faces headwinds in Canada's traditional markets, Canada should seize the offer.

---

## Introduction

With both the Canada-European Union Comprehensive Economic and Trade Agreement (CETA) and the Trans-Pacific Partnership (TPP) signed — although neither is fully sealed nor delivered<sup>1</sup> — Canada has ticked off its top-two trade negotiating objectives. The next big one is China. China has signalled its interest and the case for Canada is compelling:

- China is the world's third-largest economy after the United States and the European Union and the world's largest trading hub;
- China is home to more than 100 Fortune 500 companies that are expanding their footprint overseas as foreign investors;
- China's development trajectory is increasing the emphasis it will give to domestic priorities — and thus increasing the importance of strengthened treaty-backed market access;
- China is rapidly developing as an innovation centre; and

---

<sup>1</sup> Withdrawal from the TPP was on US President Donald Trump's list of "first hundred days" actions and on January 23 he signed an executive order withdrawing the United States from the TPP. Questions about the net benefit of the TPP to Canada remain open.

---

## About the Author

Senior Fellow **Dan Ciuriak** joined CIGI's Global Economy Program in April 2016, focusing on the innovation and trade research theme.

At CIGI, Dan is exploring the interface between Canada's domestic innovation and international trade and investment, including the development of better metrics to assess the impact of Canada's trade agreements on innovation outcomes.

Based in Ottawa, Dan is the director and principal of Ciuriak Consulting Inc. He is also a fellow in residence with the C.D. Howe Institute and an associate with BKP Development Research and Consulting GmbH of Munich, Germany.

Previously, he was deputy chief economist at Canada's Department of Foreign Affairs and International Trade (DFAIT) (now Global Affairs Canada), with responsibility for economic analysis in support of trade negotiations and trade litigation and served as contributing editor of DFAIT's Trade Policy Research series (2001–2007 and 2010 editions). He has also held several other positions at DFAIT, including as deputy to the chair of the Asia-Pacific Economic Cooperation Economic Committee and as finance counsellor at Canada's Embassy in Germany.

→ China is acquiring the qualifications of a true economic power and must be engaged as such, with the full range of diplomatic tools, including economic diplomacy.

These factors combine to make engaging China a strategic imperative for Canada. The next logical step in Canada's economic diplomacy with China is an FTA.

---

## China's Growth Trajectory

Since 2007, while the world economy has sputtered, China's economy has tripled in size.<sup>2</sup> This reflects in roughly equal measure China's real growth, which saw the economy double in real terms, and the convergence of its internal economy to global pricing, as evidenced by the convergence of its market exchange rate with its purchasing power parity exchange rate.<sup>3</sup>

China's economy has slowed in recent years, which has brought out the bears: "sell China" was the story of 2016. Each slowdown in China has been interpreted as secular until it turned out to be cyclical — and China has always been much more cyclical than its official statistics indicate. Structurally, the factors that are driving its growth trajectory remain in place. Cities are the engines of economic growth and China's rapid urbanization continues apace. Its internal connectedness is growing through its massive infrastructure program, which has been called "the single-biggest buildout of infrastructure in the history of mankind" (Woetzel 2013); connectedness drives competition. And China continues to be only 54 percent of the way to operating fully at world prices.<sup>4</sup>

---

2 Between 2007 and 2016, China's GDP rose from US\$3.57 trillion to US\$11.4 trillion (International Monetary Fund [IMF] 2016).

3 Between 2007 and 2016, the ratio of China's GDP measured at purchasing power parity to China's GDP measured by market exchange rate fell from 2.52 to 1.87 (ibid.).

4 In 2016, the IMF estimates that China's GDP measured in US dollars at current market prices is 54 percent of the level of its GDP measured in US dollars at purchasing power parity (ibid.). Full convergence would equalize these measures in equilibrium.

---

## China's Economic Miracle at the Firm Level

Firms are the software of a market economy. The “economic miracles” in East Asia are best captured by the number of world-class firms that have emerged in the region. Japan still stands out for the number of its firms in the top tier of the Fortune 500. But China is making its mark, taking over the bottom tier and setting the stage for these firms’ move up the ranks.

China already has its fair share of Fortune 500 firms on a population-weighted basis (the country accounts for just under 20 percent of the global population). However, it is above average on a GDP basis (China accounts for about 12 percent of global GDP), which is spectacular for a country that is still not an advanced country. This statistic is all the more impressive in light of the fact that, in 2016, China also had seven of its firms listed in the world’s top 100 most innovative firms, as identified by Forbes (2016).<sup>5</sup> In 2015, Huawei Technologies Co., Ltd. moved into the top 50 US patent recipients (number 50 with 799 US patents granted).

These metrics are important because of firms’ role in international trade and investment, as well as in the broader scheme of economic development. Modern trade theory recognizes that it is firms — not countries — that trade and invest. Firms also innovate and aggregate technologies into commercially relevant bundles. They are the repositories of stocks of intellectual property (IP), tacit production “know how,” as well as knowledge of supplier and customer relations. They expose their workers to this in-house knowledge and develop their skills, which they take with them when they move on to new jobs.

---

5 Although Thomson Reuters did not list any Chinese firms on its list of Top 100 innovators, Chinese firms are liberally sprinkled throughout the 2016 State of Innovation report. See Thomson Reuters (2016).

---

## China's Inward Developmental Trajectory

China has long been encouraged to shift its growth focus from exports to domestic demand. Indeed, it has formally refocused, as exemplified in its official economic plans. Moreover, this rebalancing is evident in the numbers: China’s two-way trade as a share of its GDP has declined steeply since the mid-2000s, even as the trade figures continued to grow.<sup>6</sup>

China’s main challenges are now domestic, including, above all, improving its environmental performance and quality of growth. Industrialization and urbanization are engines for generating externalities — both positive (for example, knowledge spillovers) and negative (for example, pollution) — and these must be addressed through regulation. Rising per capita incomes also drive demand for regulation, as those who can afford it demand quality. As China’s focus turns inward, the risk of trade disruption grows, not from tariffs but from regulations.

The narrative of China’s rise to date has been one of its trading partners using trade remedies to slow the flood of imports from China and China using trade remedies in retaliation to discipline such practices. This narrative will start to change as China transforms, becomes a higher-cost producer and increasingly targets domestic objectives. For example, China tightened standards for import of canola seed — ostensibly to control for a plant pest, but raising questions about its real motive (Hui 2016). Canada would be well advised to be ahead of the curve on this by obtaining strengthened, treaty-backed market access.

---

6 See, for example, Setser (2016) for a commentary and interpretation.

---

# China's Innovation Trajectory

China's innovation dynamic is intense. It is already at the technological frontier in some areas and rapidly converging to that frontier in many others: China has made major breakthroughs with its gigantic 500 metre aperture spherical telescope, the launch of the world's first hacker-proof quantum satellite and the world's fastest computer, the supercomputer Sunway Tianhe-1A. China is also closing the technological gap rapidly in areas such as artificial intelligence, genetic engineering, 5-G broadband technology and the "Internet of Things" (Wong 2016).

Perhaps nothing exemplifies China's technological trajectory better than its aerospace program: it has two space stations of its own, has sent an unmanned space ship to orbit the moon, plans a lunar landing to obtain samples in 2017 (the Chang'e 5) and has launched a regional jet (Comac's ARJ21) that is now entering commercial service. That there is likely very little, if any, original Chinese content in the design of the advanced systems used in these ventures is not the point. The fact that the ARJ21 is 10 years late and will likely prove to be a commercial failure is not the point. The point is that China has gotten onto the learning curve in these most complex of undertakings; its progress up the learning curve will be steep. For example, a recent report from J.D. Power and Associates on quality performance in China's automotive sector found that China, which trailed the United States badly in 2005, had converged to US levels of quality performance a decade later (Trudell and Hagiwara 2015).

China's acquisition of technological capability is multi-faceted and is strongly supported by its official development policy.

First, China acquires foreign technology through inward foreign direct investment with stipulations attached regarding technology transfer. For example, its improvement in global high-speed rail competitiveness was due to "re-innovation" of advanced countries' technology. Re-innovation may be construed as illegitimate infringement, although it may also be characterized as legitimate "tweaking." Tweaking other companies' products is routine corporate practice: Apple "tweaked" FaceTime after losing a patent infringement lawsuit against VirnetX, a patent holding

company. A US online gaming company, Curse Inc., has developed a voice chat system modelled on a Chinese online gaming system, reversing the historical dynamic in which Chinese firms develop derivative versions of US products.

Second, China's Fortune 500 companies invest abroad at scale, with technology acquisition a key objective. High-profile acquisitions include Lenovo's acquisition of IBM's personal computer manufacturing business and China National Offshore Oil Corporation's acquisition of the firm's capabilities through its absorption of Nexen. Huawei, meanwhile, has created a network of over 20 R&D centres worldwide to tap into foreign knowledge networks. Demonstrating another mode for leapfrog advances in technology, a Shandong-based coking firm bought a failing German company, Kaiserstuhl III, in 2003 and relocated it to China (Poganatz 2007). Buying and rebuilding the German coking plant allowed the Chinese coking industry to quantum leap its technological development in coking production by decades.

Finally, China also builds its own technology domestically, through "introduction, digestion, absorption, and re-innovation" (see, for example, Kwan 2015). This has been enabled by massive investments in education and R&D.

By 2020, China will have almost 200 million graduates from its 2,900 community colleges and universities, which currently feature an enrolment of 37 million, some 40 percent in science and technology. China's active R&D workforce is now in the four million range (Wong 2016). While the quality of China's university graduates is not considered to be on a par with that of the United States, it can be observed that today's undergraduate degree is worth about as much as the high school diplomas of past generations — and the rise of the United States to the top of the global economy was not based on the number of its Ph.D.s, but on its broad foundation of literacy and numeracy developed by universal secondary education. China has reached a critical mass on that score. Furthermore, it is generating not only a high number of graduates, but also quality human capital: Shanghai rose to first place in the 2012 Program for International Student Assessment (or PISA) in mathematics, reading and science.

On R&D, China's spending now amounts to 2.1 percent of GDP, or about US\$220 billion, which is second only to that of the United States in dollar terms. China's IP stock is rising exponentially:

according to the World Intellectual Property Organization, in the most recent year of data, China accounted for 34 percent of global patent filings (United States: 22 percent), 50 percent of new industrial designs (United States: nine percent) and 76 percent of new trademarks (United States: 13 percent). This dynamic has been enabled by the launch of a major patent examiner recruitment and training program.

Ian Harvey, the former chair of London's Intellectual Property Institute, describes China's innovation dynamic as "seismic": IP laws and the quality of the rights are on a par with global standards, courts make sophisticated rulings and, while there is a significant level of infringement, IP enforcement is also strong: Chinese companies can and do sue other Chinese companies (Harvey 2015). China is, thus, developing strong internal IP competition.

---

## The Metrics of Economic Power: Measuring China's Progress

When China moved ahead of the United States as the world's largest economy in 2014,<sup>7</sup> the perennial discussion of China as an "economic power" was reinvigorated. Some commentators made a big deal out of it (*Vanity Fair* trumpeted "The Chinese Century"); others rushed to argue that this change in rankings meant very little, if anything at all.

The term "economic power" is often tossed around, but generally in a very loose fashion. How do we determine if a country is an economic power and how do we measure the extent of this power? Dan Ciuriak (2004) suggested four criteria to measure economic power, which is taken, in the paper, to mean the ability to use economic tools to exert influence across a variety of domains, including especially in the political domain:

- Market size: possession of a large domestic market that is capable of absorbing large amounts of imported goods provides a country

with considerable leverage in world affairs, as other nations become dependent on exports to it. This pre-supposes that the country is willing to open its market — and to deny access selectively to exercise that leverage.

- Export power: control over strategic exports, such as oil or high technology goods (including sophisticated military equipment), also provides a nation with a wellspring of influence in non-economic domains.
- Financial centre: a hallmark of an economic hegemon is the supply of an international currency.
- International "club-maker": another hallmark of economic power is the ability to sponsor the formation of international institutions.

In 2004, China was not an economic power on the basis of these metrics. Its domestic market was still relatively small: its imports were largely tied into export processing activities rather than endogenous demand structures; its exports did not have strategic value, as it was effectively selling cheap labour; its currency, the renminbi (RMB), was soft and the Chinese domestic bond market was embryonic; and China was still joining clubs (for example, it had just joined the World Trade Organization [WTO] under terms that were unusually onerous), not sponsoring them.

A decade later, things have significantly changed.

- China's domestic market is now, in many sectors, of major importance to global companies. For example, China is the world's biggest automobile market and is projected to be the world's largest civil aviation market over the coming decades. Showing the potential of its import power, China recently obtained New Zealand's agreement to declare China's economy as operating under market conditions for WTO purposes as part of its FTA with New Zealand.
- China's rapid progress up the technology learning curve is the precursor to being able to wield influence by restricting exports (although this strategy flopped when applied to rare earth metals). As documented above, China is now starting to make technological breakthroughs.
- China possesses the world's third-largest bond market, the RMB is well on its way to full convertibility and its use as an international

---

<sup>7</sup> China surpassed the United States in terms of GDP measured at purchasing power parity by the IMF, and on a more complex analysis conducted by the World Bank. See Stiglitz (2014).

transactions currency is being promoted through the establishment of RMB hubs. These steps are necessary precursors to China becoming an economic power.

- Finally, Beijing has started to sponsor clubs, including the Asian Infrastructure Investment Bank and the One Belt, One Road initiative for trade facilitation, and is a key player in the Regional Comprehensive Economic Partnership negotiations, which are formally led by the Association of Southeast Asian Nations.

China is not yet a full-fledged economic power, going by these metrics, but it now has some of the accoutrements and has started to exercise that power, at least on a regional basis, and in Africa on an out-of-region basis. It would be premature to speak of China as a global economic power — but it has gotten to square one, where a decade ago it was not on the board.

---

## Conclusion

China has been increasing its economic clout for some time. With the TPP and CETA signed, Canada is setting its sights on China as the next big trade partner with whom to negotiate a trade agreement.

Standard analysis of the gains from a trade agreement with China suggest they would be sizeable for both parties (Dawson and Ciuriak 2016); indeed, for Canada, they would be greater than what Canada would get from the TPP. China currently accounts for only about four percent of Canada's exports and Canada only absorbs about 1.3 percent of China's exports; a trade agreement between the two countries would likely increase those numbers. More importantly, an agreement would help Canadian firms forge stronger links with China's partners.

To date, the obstacles to a Canada-China FTA have been mainly on this side of the Pacific as Canada has moved cautiously in a politically sensitive area. But, at a time when globalization is being shaken and walls are being built, Canada needs to pursue a strategic vision of breaking down walls. An FTA with China would be a good start.

---

## Works Cited

- Ciuriak, Dan. 2004. "The Laws of Geoeconomic Gravity Fulfilled? China's Move towards Centre Stage." *Asian Affairs: An American Review* 31(1). Previously presented at the Annual Meeting of the American Association of Chinese Scholars, Indianapolis, October 26–28, 2003.
- Dawson, Laura R. and Dan Ciuriak. 2016. "Chasing China: Why an Economic Agreement with China Is Necessary for Canada's Continued Prosperity." Research Report for the Canadian Council of Chief Executives.
- Forbes. 2016. "The World's Most Innovative Companies: 2016 Rankings." [www.forbes.com/innovative-companies/list/2/#tab:rank](http://www.forbes.com/innovative-companies/list/2/#tab:rank).
- Harvey, Ian. 2015. "China's Proud Patent Progress." <http://ianharvey-ip.com/china/chinas-proud-patent-progress/>.
- Hui, Ann. 2016. "What's really behind China's decision to restrict canola: science or politics?" *The Globe and Mail*, August 30.
- IMF. 2016. World Economic Outlook Database, October 2016. Washington, DC: IMF.
- Kwan, Chi Hung. 2015. "China Aiming for Growth by Innovation: Private-sector companies as the leading force." Research Institute of Economy, Trade and Industry.
- Poganatz, Hilmar. 2007. "Der Entrümpeler." *Brand eins Wirtschaftsmagazin*, January. [www.brandeins.de/archiv/2007/selbststaendigkeit/der-entruempler.html](http://www.brandeins.de/archiv/2007/selbststaendigkeit/der-entruempler.html).
- Setser, Brad. 2016. "China Is Pivoting Away From Imports, Not Just Rebalancing Away From Exports." *Follow the Money*, May 24.
- Stiglitz, Joseph E. 2014. "The Chinese Century." *Vanity Fair*, December 4.
- Thomson Reuters. 2016. "Disruptive, Game-Changing Innovation: 2016 State of Innovation." <http://stateofinnovation.thomsonreuters.com/>.
- Trudell, Craig and Yuki Hagiwara. 2015. "Made-in-China Quality Is Not Good Enough, Lexus Says." *Bloomberg*, November 3.
- Woetzel, Jonathan. 2013. "China's next chapter: The infrastructure and environmental challenge." Washington, DC: McKinsey & Company.
- Wong, John. 2016. "How China is fast narrowing the technology gap with the West." *The Straits Times*, November 1.

---

## About the Global Economy Program

Addressing limitations in the ways nations tackle shared economic challenges, the Global Economy Program at CIGI strives to inform and guide policy debates through world-leading research and sustained stakeholder engagement.

With experts from academia, national agencies, international institutions and the private sector, the Global Economy Program supports research in the following areas: management of severe sovereign debt crises; central banking and international financial regulation; China's role in the global economy; governance and policies of the Bretton Woods institutions; the Group of Twenty; global, plurilateral and regional trade agreements; and financing sustainable development. Each year, the Global Economy Program hosts, co-hosts and participates in many events worldwide, working with trusted international partners, which allows the program to disseminate policy recommendations to an international audience of policy makers.

Through its research, collaboration and publications, the Global Economy Program informs decision makers, fosters dialogue and debate on policy-relevant ideas and strengthens multilateral responses to the most pressing international governance issues.

---

## About CIGI

We are the Centre for International Governance Innovation: an independent, non-partisan think tank with an objective and uniquely global perspective. Our research, opinions and public voice make a difference in today's world by bringing clarity and innovative thinking to global policy making. By working across disciplines and in partnership with the best peers and experts, we are the benchmark for influential research and trusted analysis.

Our research programs focus on governance of the global economy, global security and politics, and international law in collaboration with a range of strategic partners and support from the Government of Canada, the Government of Ontario, as well as founder Jim Balsillie.

---

## À propos du CIGI

Au Centre pour l'innovation dans la gouvernance internationale (CIGI), nous formons un groupe de réflexion indépendant et non partisan qui formule des points de vue objectifs dont la portée est notamment mondiale. Nos recherches, nos avis et l'opinion publique ont des effets réels sur le monde d'aujourd'hui en apportant autant de la clarté qu'une réflexion novatrice dans l'élaboration des politiques à l'échelle internationale. En raison des travaux accomplis en collaboration et en partenariat avec des pairs et des spécialistes interdisciplinaires des plus compétents, nous sommes devenus une référence grâce à l'influence de nos recherches et à la fiabilité de nos analyses.

Nos programmes de recherche ont trait à la gouvernance dans les domaines suivants : l'économie mondiale, la sécurité et les politiques mondiales, et le droit international, et nous les exécutons avec la collaboration de nombreux partenaires stratégiques et le soutien des gouvernements du Canada et de l'Ontario ainsi que du fondateur du CIGI, Jim Balsillie.

---

## CIGI Masthead

### Executive

President **Rohinton P. Medhora**

Director of Finance **Shelley Boettger**

Director of the International Law Research Program **Oonagh Fitzgerald**

Director of the Global Security & Politics Program **Fen Osler Hampson**

Director of Human Resources **Susan Hirst**

Director of the Global Economy Program **Domenico Lombardi**

Chief Operating Officer and General Counsel **Aaron Shull**

Director of Communications and Digital Media **Spencer Tripp**

### Publications

Publisher **Carol Bonnett**

Senior Publications Editor **Jennifer Goyder**

Publications Editor **Patricia Holmes**

Publications Editor **Nicole Langlois**

Publications Editor **Sharon McCartney**

Publications Editor **Lynn Schellenberg**

Graphic Designer **Melodie Wakefield**

For publications enquiries, please contact [publications@cigionline.org](mailto:publications@cigionline.org).

### Communications

For media enquiries, please contact [communications@cigionline.org](mailto:communications@cigionline.org).

Copyright © 2017 by the Centre for International Governance Innovation

The opinions expressed in this publication are those of the author and do not necessarily reflect the views of the Centre for International Governance Innovation or its Board of Directors.



This work is licensed under a Creative Commons Attribution – Non-commercial – No Derivatives License. To view this license, visit ([www.creativecommons.org/licenses/by-nc-nd/3.0/](http://www.creativecommons.org/licenses/by-nc-nd/3.0/)). For re-use or distribution, please include this copyright notice.

Printed in Canada on paper containing 10% post-consumer fibre and certified by the Forest Stewardship Council and the Sustainable Forestry Initiative.

Centre for International Governance Innovation and CIGI are registered trademarks.

---

Centre for International  
Governance Innovation

67 Erb Street West  
Waterloo, ON, Canada N2L 6C2  
[www.cigionline.org](http://www.cigionline.org)

