Shifting the balance of global economic power: The Sinosphere in ascension towards dominance

Sierra Rayne[a,*], Kaya Forest[b]

[a] *Chemologica Research, 318 Rose Street, PO Box 74, Mortlach, Saskatchewan, Canada, S0H 3E0*
[b] *Department of Environmental Engineering, Saskatchewan Institute of Applied Science and Technology, Palliser Campus, 600-6th Avenue NW, PO Box 1420, Moose Jaw, Saskatchewan, Canada, S6H 4R4*

Abstract

The Sinosphere is in ascension towards global economic dominance on both total and per capita bases, marking a fundamental shift in the balance of global economic and military power that is taking place absent any robust structural democratic and human rights reforms in this region. In contrast to comparisons during the 1980s of Japan potentially overtaking the United States as the world's largest economy, both purchasing power parity (PPP) and current United States dollar GDP metrics consistently project that China's gross domestic product (GDP) will exceed that of the United States sometime between 2015 and 2020. The Sinosphere's GDP-PPP passed that of The Commonwealth (including India) in 2011, The Commonwealth (excluding India) in 2005, the Francosphere member states in 2003, the Francosphere member and observer states in 2009 - subsequently widening the gap in all cases - and is predicted to surpass that of the Anglosphere by the early 2020s. China's military spending now exceeds that of all other nations bordering the East and South China Seas combined and the gap is widening rapidly. At current rates of increase, China's military expenditures may surpass those of the United States within the next decade. On a per capita basis, China's GDP-PPP is expected to overtake that of the United States and Canada by the early to mid-2030s, whereas Russia and the EU are projected to be surpassed by China in per capita GDP-PPP by the late 2020s.

Keywords:
Sinosphere, Anglosphere, Francosphere, The Commonwealth, Economic power

Introduction

A fundamental shift in global economic power is underway. Despite claims that "[t]he [A]nglosphere yet reigns supreme" [1], economic data tell a different story. As defined by Kotkin and Parulekar, the Anglosphere is comprised of the United States, Canada, the United Kingdom, Ireland, Australia, and New Zealand and is predicted to "remain the ascendant player on the world stage for a long time to come" [2]. According to these authors, "[a] little-noted fact these days is that the Anglosphere is still far and away the world's largest economic bloc. Overall, it accounts for more than one-quarter of the world's GDP [gross domestic product] - more than $18 trillion. In contrast, what we can refer to as the Sinosphere - China, Hong Kong, Taiwan, and Macau - accounts for only 15.1 percent of global GDP, while India generates 5.4 percent. The Anglosphere's per-capita GDP of nearly $45,000 is more than five times that of the Sinosphere and 13 times that of India. This condition is unlikely to change radically any time soon" [2]. In contrast, the radical change appears to be upon us. Figure 1 shows the share of global GDP (on a purchasing power parity [PPP] basis) [3] for the Anglosphere and Sinosphere between 1980 and 2012, including International Monetary Fund (IMF) projections out to 2017. Absent a geopolitical catastrophe that freezes or reverses multidecadal trends, it appears that the Sinosphere will comprise a larger portion of global GDP than the Anglosphere by the early 2020s.

These predictions should not be surprising. China appears ready to overtake the United States as the world's largest economy within a few years. Geopolitical observers have heard such bold assertions before. As Fensom notes, "[a]t the end of the 1980s, Japan was forecast to overtake the U.S. and become the world's top economy. Its unparalleled rise could not be halted, according to the experts at the time. Is history repeating itself, or will China's new leadership prove capable of defying the doomsayers?" [4] However, there appear to be notable differences in predictions from the 1980s regarding Japan potentially becoming the world's largest economy versus analogous predictions at present about China achieving the same status.

Figure 2 shows GDP-PPP data [3] between 1980 and 2012 for China, Japan, and the United States. The dashed lines show regression extensions of the 1980 to 1989 GDP-PPP growth trends for Japan and the USA which were not expected to cross until well into the future (likely sometime

*Corresponding author. Tel.: +1 306 690 0573. E-mail address: sierra.rayne@live.co.uk (S. Rayne).

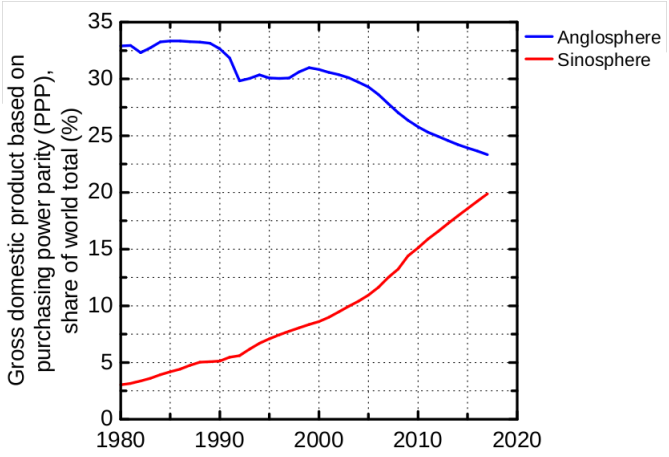

Figure 1: Actual and predicted share of global gross domestic product on a purchasing power parity basis for the Anglosphere and Sinosphere between 1980 and 2017.

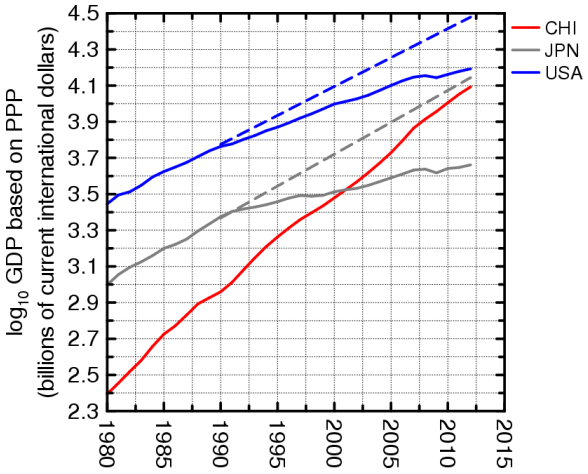

Figure 2: Gross domestic product on a purchasing power parity basis for China (CHI), Japan (JPN), and the United States (USA) between 1980 and 2012.

in the early 22nd century; Figure 3). As is evident from Figure 2, China's GDP-PPP is already very close to that of the United States and closing rapidly. In addition, the GDP-PPP for the United States has been progressively adopting a concave down trajectory since the early 1990s. Absent a major geopolitical disruption or relevations of problems in the reporting of China's GDP-PPP data, the intersection of China's GDP-PPP with that of the United States in the near future (i.e., likely between 2015 and 2020) is as close to a projected economic certainty as one can attain.

It appears impending predictions during the 1980s that Japan would soon take over the largest economy spot were based on United States dollar equivalent GDP metrics. Figure 4 shows GDP on a current United States dollar basis [5] between 1960 and 2011 for China, Japan, and the United States. By the end of the 1980s, this GDP met-

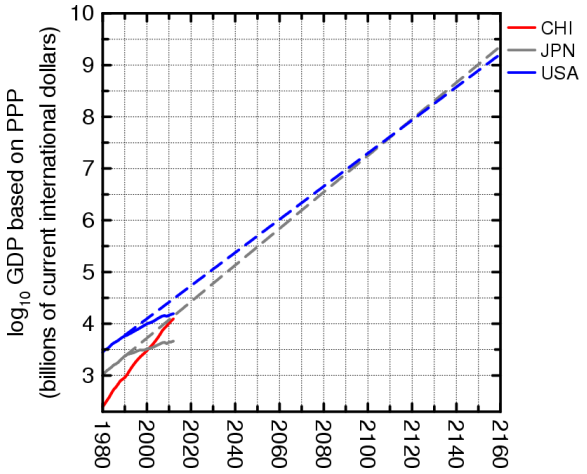

Figure 3: Regression extensions of the 1980 to 1989 gross domestic product on a purchasing power parity (GDP-PPP) basis growth trends for Japan (JPN) and the United States (USA) as well as 1980-2012 GDP-PPP data for China (CHI), Japan, and the United States.

ric suggested that Japan would likely overtake the United States sometime during the 1990s. However, the so-called 'lost decade(s)' of Japan from the early 1990s to the present halted this potential GDP intersection. It is also important to note the shape of the GDP temporal trends for the United States and Japan from the early 1970s through the 1980s: both are concave down. Conversely, note the current GDP time trends for the United States and China since the mid-1970s: the United States is concave down whereas China is concave up. Major economies generally exhibit slow transition periods between economic acceleration and deceleration. For nations in economic decline / stagnation, there is generally a trend from concave up growth to concave down growth, after which stagnation or even prolonged negative growth can occur. China is still clearly in concave up growth, and it is sufficiently close to the United States in GDP that even if China turned to concave down growth over the coming few years, it appears likely to still overtake the concave down lower growth rates of the USA.

One must also keep in mind that even as China's economy is thought to be slowing down, its annual real GDP growth rate remains at 8.2% [3] during 2012, compared to a 2012 United States growth rate of only 2.1% [3]. China's economic growth rate could decline by 50% below current levels and it would still be growing about twice as fast as the United States. Overall, multiple economic indicators give a better projection of likely trends. During the 1980s, GDP-PPP and GDP (current United States dollar basis) metrics yielded dramatically different conclusions regarding the likelihood of Japan's economy overtaking that of the USA. In contrast, both metrics clearly indicate that China's GDP is expected to exceed that of the USA within the next decade.

Similarly, China's GDP-PPP has already overtaken, or

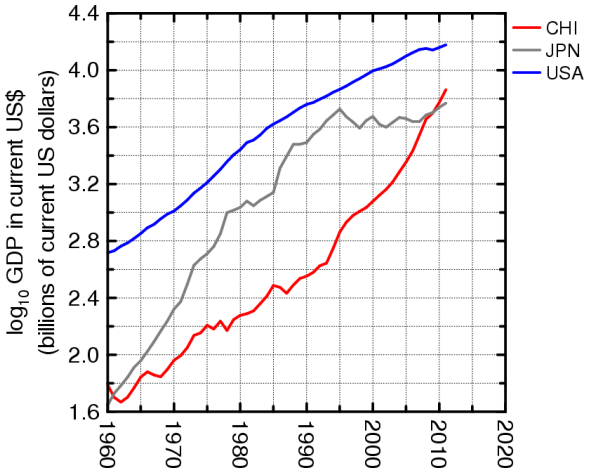

Figure 4: Gross domestic product on a current United States dollar basis for China (CHI), Japan (JPN), and the United States (USA) between 1960 and 2011.

is predicted to overtake in the near future, that of other major economies. Figure 5 shows actual and projected GDP-PPP [3] for Canada, China, Russia, the United States, and the European Union. China's GDP-PPP overtook Canada's in 1982 and that of Russia in 1992, and will likely surpass the European Union (along with the United States) sometime between 2015 and 2020.

Other groupings of nations that can be compared to the Sinosphere include The Commonwealth and the Francosphere. If a Commonwealth rises again among former 'British Commonwealth' independent states, it will most likely need to be rather ironically called the 'Indian Commonwealth.' For the current analysis, data for all 54 current members of The Commonwealth (www.thecommonwealth.org/Internal/191086/191247/142227/members/; including Fiji, which had its membership suspended in 2009) will be considered. Figure 6 shows the share of global GDP-PPP [3] for The Commonwealth nations (with and without India) compared to that of the Sinosphere between 1980 and 2012, along with projections out to 2017. The Sinosphere is in comparatively complete economic dominance, regardless of whether we include India in The Commonwealth or not. With India, the global economic influence (using GDP-PPP share as the metric) of The Commonwealth is increasing slightly (but at nowhere near the exponential rate that the Sinosphere has maintained for over three decades). Without India, the global economic influence of The Commonwealth is in clear decline. In 1980, India contributed 18% of The Commonwealth's GDP. In 2011, that value had increased to 36%. By 2017, the contribution is expected to increase to over 41%.

The Francosphere can be defined as the member states and observer nations of the International Organisation of La Francophonie (www.francophonie.org). The combined GDP-PPP [3] of the Francosphere member states dropped below that of The Commonwealth (not including India) in

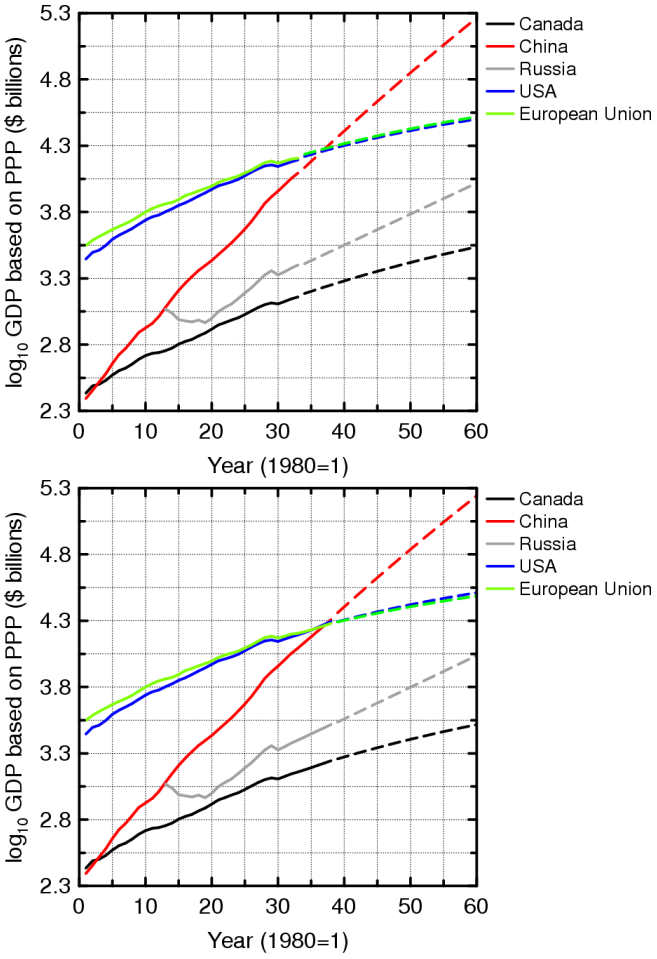

Figure 5: Actual (1980-2012) and projected gross domestic product on a purchasing power parity basis for Canada, China, Russia, the United States (USA), and the European Union. The upper panel includes IMF data up to 2012 and projections [by the authors] thereafter. The lower panel includes IMF data and IMF projections up to 2017 and projections [by the authors] thereafter.

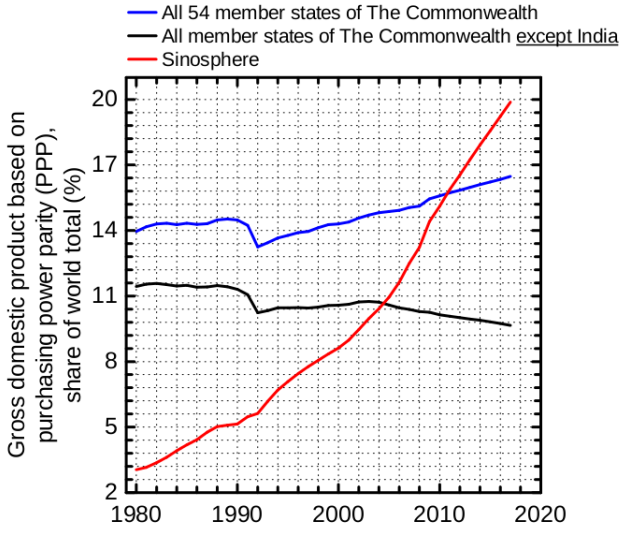

Figure 6: Actual and predicted share of global gross domestic product on a purchasing power parity basis for the Francosphere and Sinosphere between 1980 and 2017.

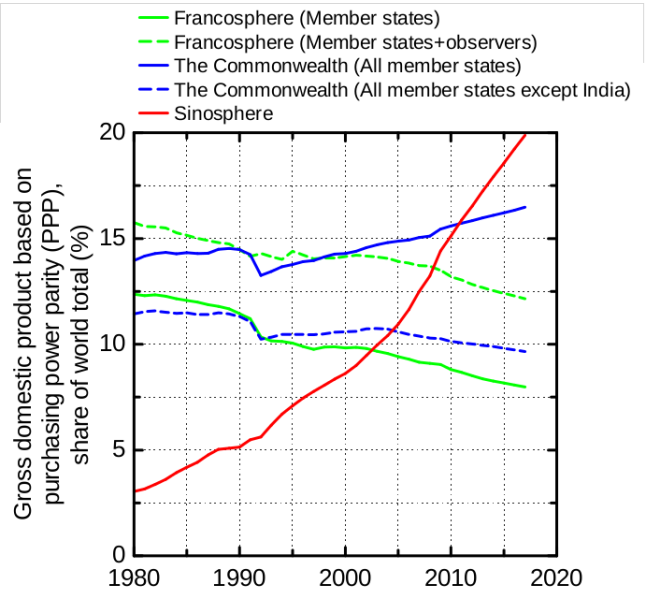

Figure 7: Actual and predicted share of global gross domestic product on a purchasing power parity basis for The Commonwealth (with and without India) and Sinosphere between 1980 and 2017.

1993 (Figure 7), and has subsequently declined at a more rapid rate. The Sinosphere's GDP-PPP passed that of the Francosphere member states in 2003, and the ensuing gap has increased exponentially since this time. If we include observer nations in the Francosphere, the resulting bloc has always comprised a larger proportion of global GDP than The Commonwealth (not including India), although the gap is shrinking and these two groupings appear headed to intersect their GDP-PPP sometime during the next few decades (but not likely before the late 2020s). The Commonwealth (including India) surpassed the Francosphere member and observer states in GDP-PPP during 1998, with a subsequent progressive and rapid widening of the gap. The Sinosphere's GDP-PPP surpassed that of the Francosphere member and observer states in 2009. While the Francosphere retains some strong cultural influences, and France remains a potent military force (primarily due to its nuclear weapons capabilities), the global economic influence of this bloc is in decay.

Figures 8 and 9 show the percent of global military expenditures [5, 6] between 1988 and 2011 for The Commonwealth (with and without India), China, and the United States (Figure 9 omits the United States data for clarity). Even with India included, The Commonwealth's share of global military expenditures is not increasing (and has declined substantially from its 1999 peak). In contrast, China's share of global military expenditures surpassed The Commonwealth (absent India) in 2006, and appears headed to exceed that of The Commonwealth in its entirety within the next several years. Many also believe that China's actual military expenditures are substantially greater than reported. Consequently, China's actual current military expenditures could already exceed those of The [entire] Commonwealth.

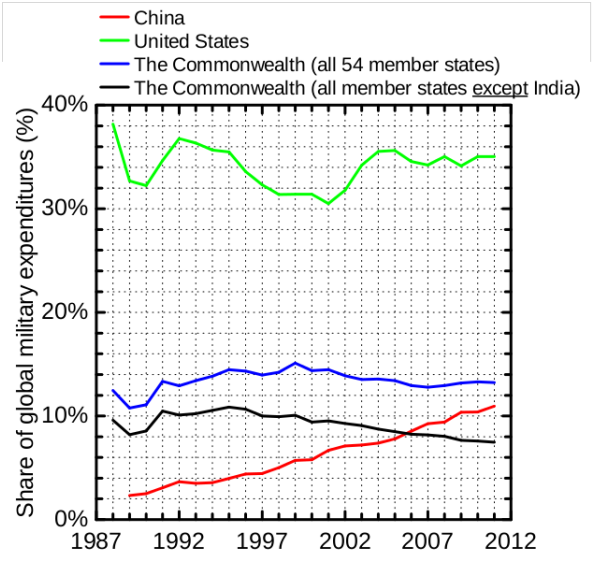

Figure 8: Share of global military expenditures for The Commonwealth (with and without India), China, and the United States between 1988 and 2011.

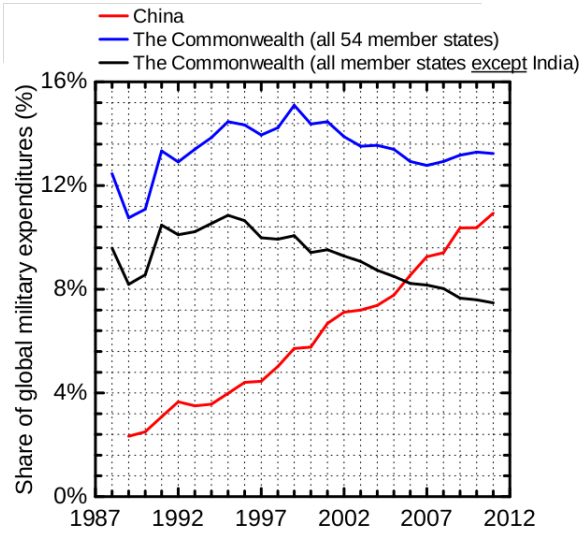

Figure 9: Share of global military expenditures for The Commonwealth (with and without India) and China between 1988 and 2011.

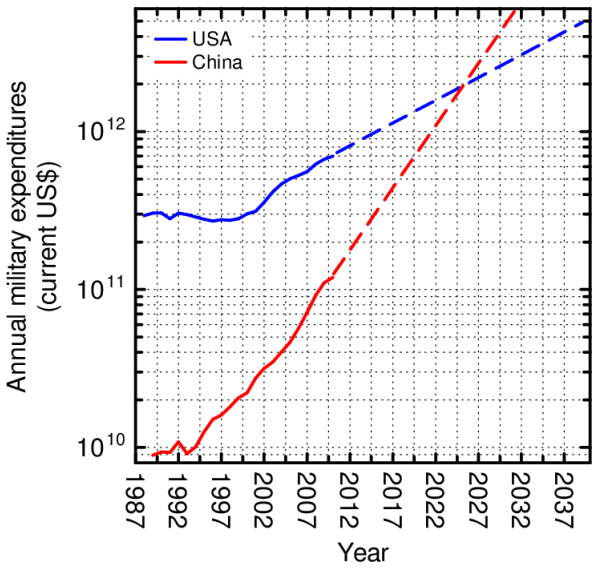

Figure 10: Annual military expenditures for the United States (USA) and China between 1988 and 2010.

Based on approximate extrapolated total annual military expenditures [5, 6] between 1988 and 2010, China appears set to overtake the United States in defence spending around 2025 (Figure 10) - in excellent agreement with prior predictions [7]. If we plot the ratio of annual military expenditures between the United States and China over this time, a more defined confidence interval of United States-China defence spending equivalence can be obtained (Figure 11). A single-order exponential fit (red line in Figure 11) to the ratio of military expenditures between the USA and China during this period suggests defence spending equivalence (i.e., a ratio=1.0) in the year 2022. However, if the ratio trend since 1998 is linearly extrapolated (blue line in Figure 11), we arrive at a much earlier military expenditure equivalence date of 2016. One also notes the very rapid decline in the ratio of USA:China defence spending between these two countries since the late 1980s, from about 34 in 1989 to about 5.8 in 2010.

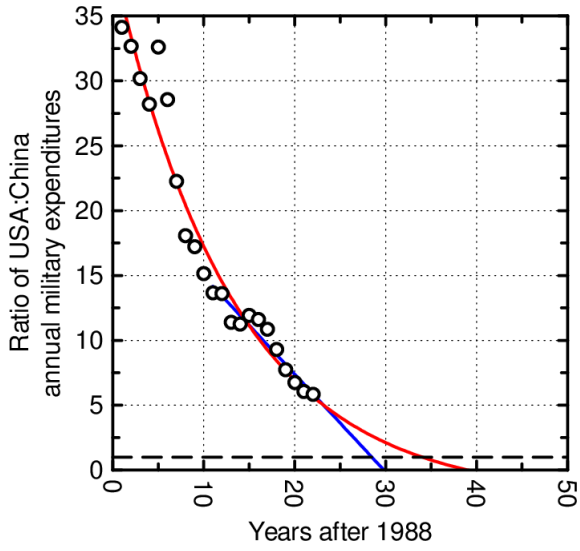

Figure 11: Ratio of annual military expenditures for the United States (USA) and China between 1988 and 2010.

Furthermore, China's military spending now exceeds that of all other nations bordering the East and South China Seas and the gap is widening rapidly. In early 2000, Nolt argued that "[d]espite rapid economic growth, China is actually becoming weaker militarily relative to Taiwan and all of its other potential rivals," and that "China's export-dependent economy and rapid demilitarization since the 1970s bode well for continued peace in Asia" [8]. As with most other major nations bordering the East and South China Seas, China's military spending as a percentage of its GDP [9, 10] has declined modestly since the late 1980s and early 1990s (Figure 12). However, because of the rapid growth for the Chinese economy, this currently stable military spending as a percentage of GDP translates into very rapid annual increases in absolute annual defence spending, particularly over the past decade. Indeed, if we compare the annual defence spend-

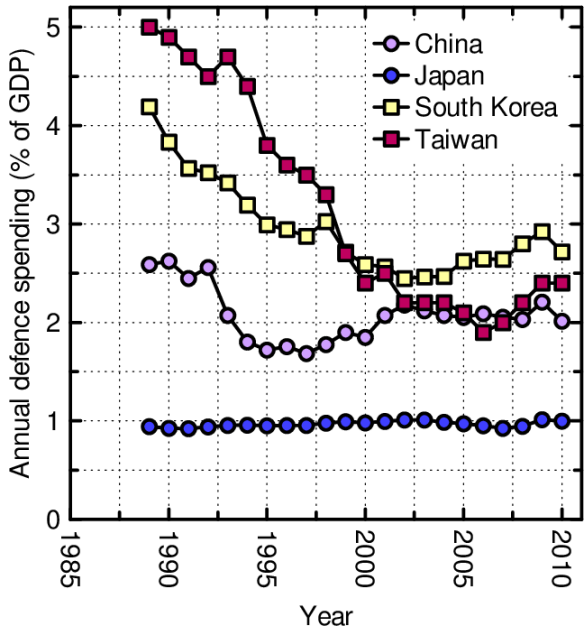

Figure 12: Annual military expenditures as a share of gross domestic product for China, Japan, South Korea, and Taiwan between 1988 and 2010.

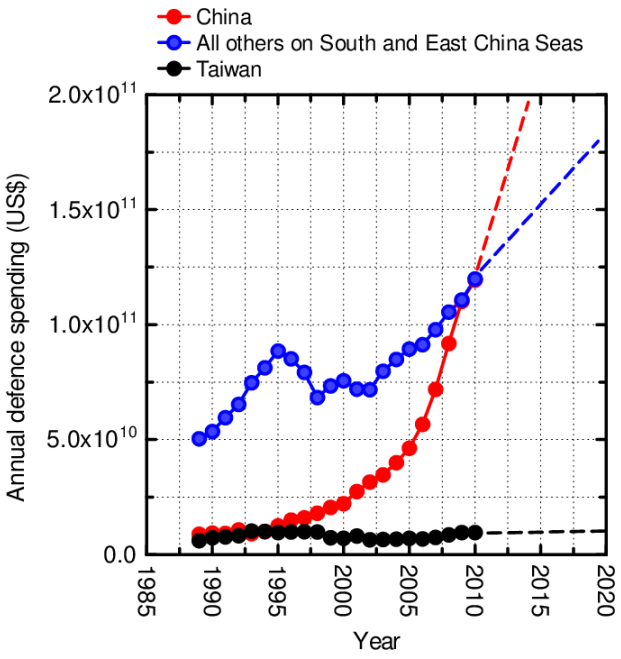

Figure 13: Annual military expenditures in current United States dollars for China, all other nations on the South and East China Seas, and Taiwan between 1988 and 2010.

ing amounts of China versus all other nations that border the East and South China Seas (e.g., Brunei Darussalam, Cambodia, Indonesia, Japan, Laos, Malaysia, Myanmar, Philippines, Singapore, South Korea, Taiwan, Thailand, Vietnam), we find that China quickly closed the spending gap over the past several years and now spends more on its military than all other nations bordering the East and South China Seas combined (Figure 13).

For perspective, Taiwan's defence spending has varied little since the late 1980s, and until the mid-1990s, the military budgets of Taiwan and China were approximately equal (China's annual defence budget is now about 15-fold higher than Taiwan's). In the 1990s and early 2000s, China's inferior military equipment (particularly relative to Taiwan) was well-known. However, modernization efforts over the past decade have resulted in a more capable Chinese military that is considered a potential threat to regional security by experts in the United States defence establishment (see, e.g., ref. [11, 12]).

Despite rapidly increasing trade relations with democratic nations since the mid-1990s, the quality of Chinese governance has not improved over this timeframe. Figures 14 and 15 show annual worldwide governance indicator values [13] for China, Canada, and the United States between 1996 and 2010. In fact, for a number of indicators, the quality of China's governance has declined in both absolute and relative terms since the mid-1990s.

Those that seek to diminish the transformation in global economic power that is underway often note that China's per capita GDP is currently well below that of many developed nations, and project that such is likely to remain the case for the foreseeable future, with China's global economic might over the coming decades only arising from its large population (∼1.34 billion at present [14]) while its citizens remain relatively poor. Figure 16 shows actual and projected per capita GDP-PPP [3] for Canada, China, Russia, the United States, and the European Union. According to these projections, China's per capita GDP-PPP is expected to overtake that of the United States and Canada by the early to mid-2030s. Russia and the EU are projected to be surpassed by China in per capita GDP-PPP by the late 2020s.

Overall, the Sinosphere is in ascension towards global economic dominance on both total and per capita bases, marking a fundamental shift in the balance of global economic and military power that is taking place absent any robust structural democratic and human rights reforms in this region.

References

[1] N. Reynold, The anglosphere yet reigns supreme, The Globe and Mail, 19 December 2011.

[2] J. Kotkin, S. Parulekar, The state of the Anglosphere: The decline of the English-speaking world has been greatly exaggerated, City Journal 22 (2012) 1.

[3] World Economic Outlook Database April 2012, International Monetary Fund: Washington, DC, USA, 2012.

[4] A. Fensom, The consequences of a slowing Chinese economy, The Diplomat, 13 September 2012.

[5] GDP (current US$), The World Bank Group: Washington, DC, USA, 2012.

[6] Military expenditure (% of GDP), The World Bank Group: Washington, DC, USA, 2012.

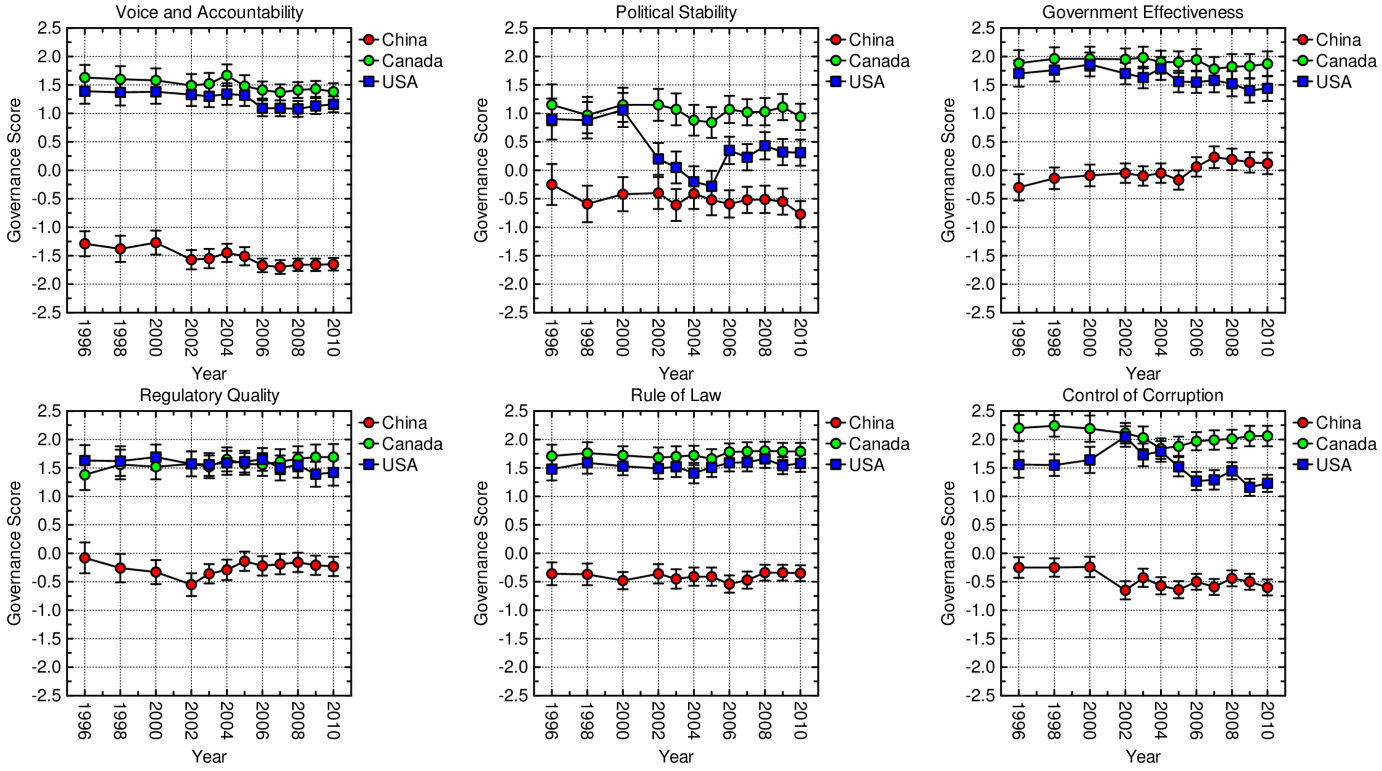

Figure 14: Annual worldwide governance indicator values (±standard errors) for China, Canada, and the United States (USA) between 1996 and 2010. Governance scores are assigned between values of -2.5 and +2.5, with higher (more positive) values corresponding with better governance.

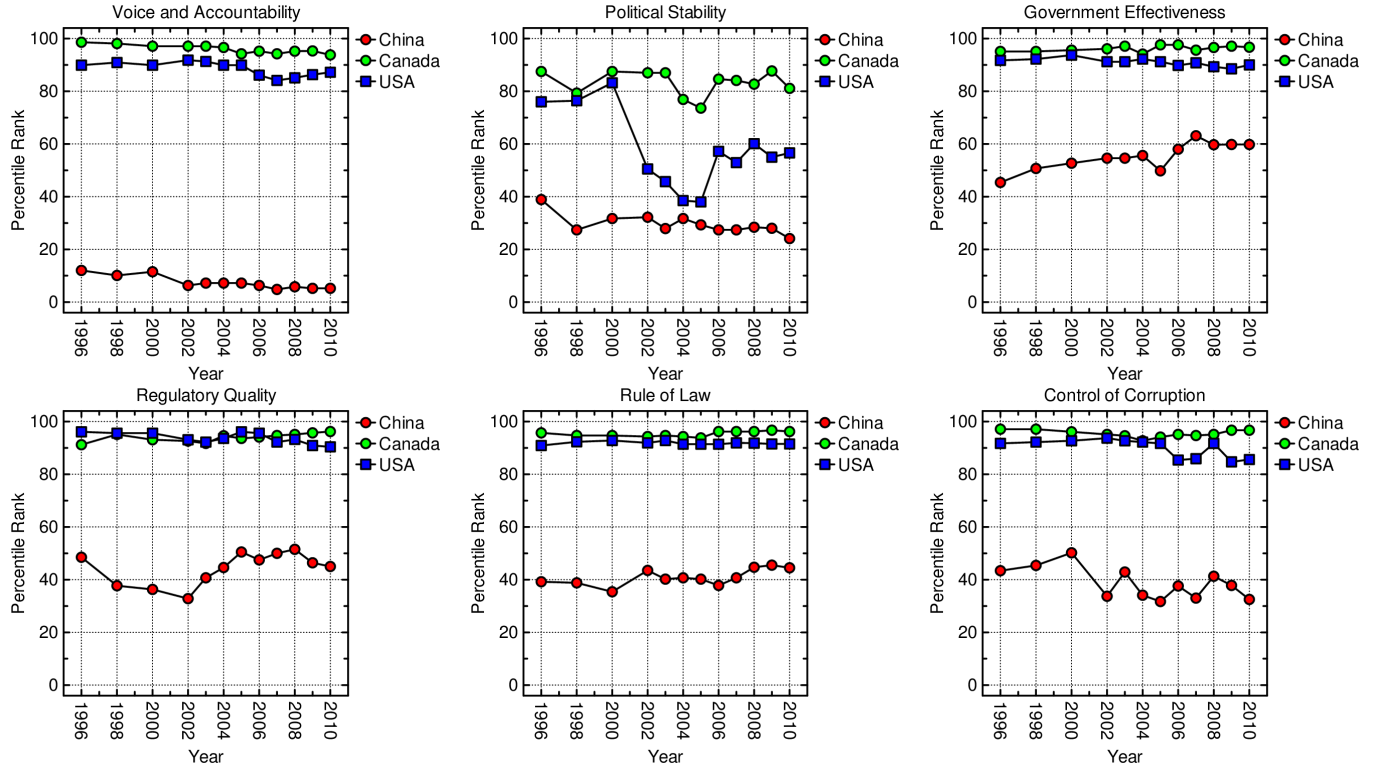

Figure 15: Annual worldwide governance indicator percentile ranks among all nations for China, Canada, and the United States (USA) between 1996 and 2010.

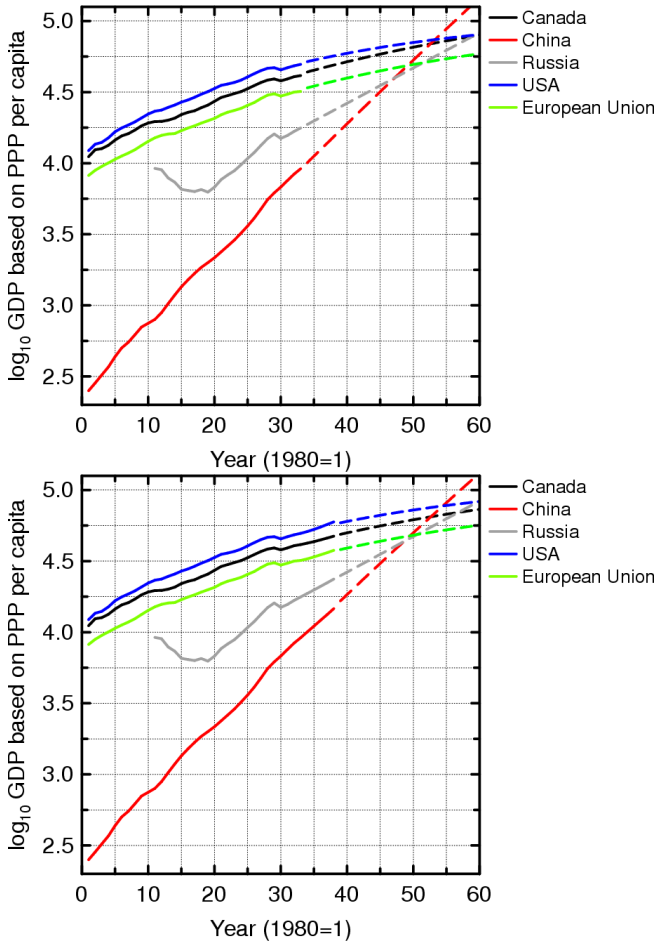

Figure 16: Actual (1980-2012) and projected per capita gross domestic product on a purchasing power parity basis for Canada, China, Russia, the United States (USA), and the European Union. The upper panel includes IMF data up to 2012 and projections [by the authors] thereafter. The lower panel includes IMF data and IMF projections up to 2017 and projections [by the authors] thereafter.

[7] Daily chart - The dating game: We invite you to predict when China will overtake America, The Economist, 27 December 2011.

[8] J. Nolt, The China-Taiwan Military Balance, Project on Defense Alternatives, Center for International Policy: Washington, DC, USA, 2000.

[9] Military expenditure (% of GDP), The World Bank Group: Washington, DC, USA, 2012.

[10] The SIPRI Military Expenditure Database, Stockholm International Peace Research Institute: Solna, Sweden, 2012.

[11] Military and Security Developments Involving the People's Republic of China - 2011: A Report to Congress Pursuant to the National Defense Authorization Act for Fiscal Year 2000, Office of the Secretary of Defense, United States Department of Defense: Washington, DC, USA, 2011.

[12] R. O'Rourke, China Naval Modernization: Implications for U.S. Navy Capabilities - Background and Issues for Congress, Congressional Research Service: Washington, DC, USA, 2012.

[13] Worldwide Governance Indicators, The World Bank Group: Washington, DC, USA, 2012.

[14] Population, total, The World Bank Group: Washington, DC, USA, 2012.