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A Timely Economic Demography Lesson from China for the G20

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This paper is based on a forthcoming paper to be available in early view from late July 2019, in the Australian Economic Review: The Economic Demography Transition: Is China's 'Not Rich, First Old' Circumstance a Barrier to Growth?

LIST OF ABBREVIATIONS AND ACRONYMS

GDP	Gross Domestic Product
G20	Group of Twenty
EDM	Economic Demography Matric
OECD	Organisation for Economic Cooperation and Development
TFR	Total fertility rate
UN	United Nations

Preface

The 2019 Japanese Presidency of the G20 has added demographics, population ageing in particular, to the list of global risks for discussion. The G20 timing could not be more pertinent: 2018 marked the first time in history that persons aged over 64 out-number children under-five; some 85% of global GDP now generated in countries that are home to newly rapidly ageing populations. The majority of countries in South Asia and sub-Saharan Africa, meantime, confront rapidly rising working-age population shares for whom jobs do not appear in the pipeline.

If the multi-dimensional policy implications of this epochal demographic change are left unaddressed, in rich and poor countries, this is likely to diminish productivity at a time when the reverse is required in ageing population countries especially. Moreover, by the 2030s ageing populations risk forming a socially and economically unsustainable inter-generational burden, in today's rich countries especially. In poorer youth-rich countries, in the meantime, the probable frustrations of those among the future large working-age cohort who fail to find work could intensify illegal migration trends, and also undermine political and social stability. Together these forecasts could stir up a perfect storm, likely nowhere more so than for Western Europe where extreme population ageing rates are geographically and post-colonially proximate to youth-rich countries.

To support related debate and informed policy-making following this year's G20 Summit and activities– at which South Africa is effectively the representative of Africa's 'young and poor' economies - this brief provides an introduction to newly published research, *The Economic Demography Transition: Is China's "Not Rich, First Old" Circumstance a Barrier to Growth?".* This article extends the logic of a Chinese concept from the mid-1980s, commonly known as "getting old before getting rich", and in doing so elucidates the relationship between demographic and economic transition across countries and time, or the "economic demography transition". This offers a straightforward conceptual framework for policy makers to study and respond to the interaction of economics and demography – and so ideally also avoid realization of the noted perfect storm and beyond.

The rest of this brief is structured as follows: Part 1 explains China's contemporary experience of demographic dividend and development; Part 2 outlines the Chinese concept of 'getting old before rich' and its extrapolation into the Economic Demography Transition; Part 3 discusses the logic of China's fears of 'getting old before getting rich'; Part 4 draws lessons from China's experience of the economic demography transition thus far for today's "poor-young" countries; Part 5 offers concluding thoughts and calls for enhanced global dialogue and demographics-related experience sharing.

China's demographic transition and development agenda

Four decades ago, China was emerging from a few decades of political instability and two centuries of 'humiliation'. The "reform and opening" agenda launch in December 1978 by paramount leader Deng Xiaoping was intended to realise a lasting national social and economic modernization.

At that time China was not only poor, but also 'young': the median age was just 21.9 years.[1] The total fertility rate (TFR) stood at 2.65 per woman in 1980, down from a peak of more than six children per woman in the mid-1960s (Figure 1). Since that rate, however, remained above the replacement level rate of 2.1 children per woman, China would need to generate high growth rates to achieve the intended per capita increases in income and welfare.[2] Renmin University demographer Wu Cangping made the point that "*the greatest obstacle to production and income per capita growth is population growth*"[3].

Figure 1: Total fertility rate (births/woman)[4]

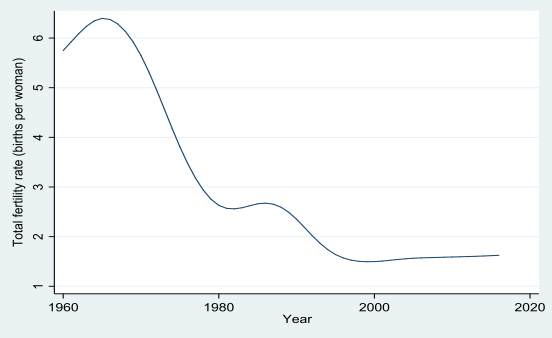
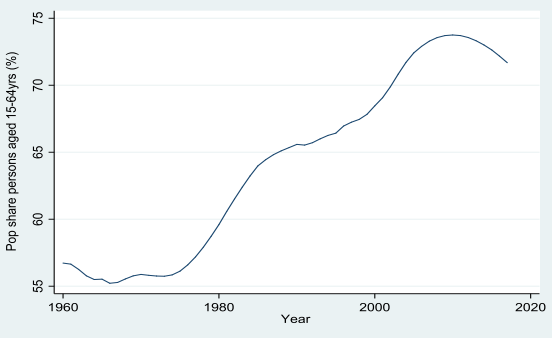


Figure 2: Workforce-aged population share (%)[5]

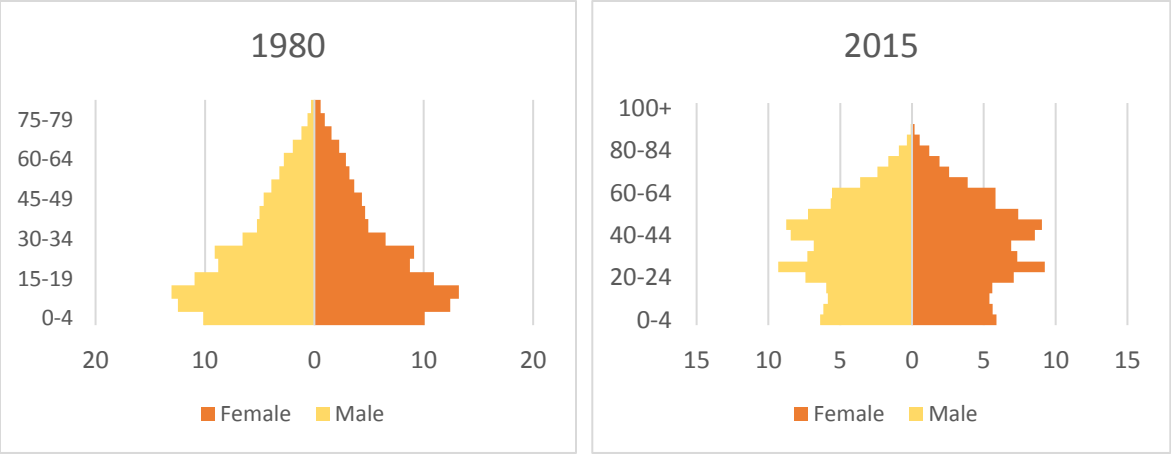


Data source: World Bank, World Development Indicators (2019).

With China's leadership intent that conditions were ripe for economic and social modernization, the 1980 "*Open Letter to All Members of the Communist Party and Communist Youth League – on the Issue of Controlling the Population Growth*"[6] hence installed a "One-Child-Per-Couple" policy that sought to reduce population-related pressures and facilitate modernization. By also making China's thenceforth population trends more predictable, this policy shift to some extent effectively also fixed a demographic dividend period for China.[7]

A demographic dividend is a temporary boost to growth potential that results from a rise in the share of the population that is of working-age. That rising working-age population share follows progress of the demographic transition - falls in fertility and morbidity. The demographic dividend specifically, however, lies in the potential of that - transitory -working-age population share to boost total productivity and national output. Thanks to the fertility falls from the 1970s and compounded from the 1980s (Figure 1) China enjoyed a demographic dividend for the 42 years from 1972 to 2014, which is estimated to have boosted growth by as much as 1.4% annually.[8]

Figures 3 and 4: Transformation of China's population pyramid



Data source: UN, World Population Prospects (2017 Revision).

Eventually, however, the working-age population boom fades as the larger population cohort moves into retirement and is replaced by a proportionately smaller working-age cohort. The underlying demographic transformation in China's case is captured visually in the population pyramids in the early phase in 1980 (Figure 3) and late phase in 2015 (Figure 4), between which China's workforce population share peaked around 2011 (Figure 2). The median population age of the nation is consequently up 21.9 years when the modernization agenda began in 1980 to a projected 38.7 years by 2020 (projected, UN estimates, 2017). That is to say, instead of being rich in low-wage prime-age workers as it was four decades ago, China is now home to a shrinking workforce and one of the world's fastest growing (and largest) pensioner populations.

For countries that are both poor and young like China of four decades ago – e.g. South Africa today - the demographic dividend period offers added potential for rapid development. Specifically, if the dividend coincides with circumstances enabling waves of low-wage, largely rural, workers to transfer into the industrial sector, this offers sustained and rapid productivity and income gains through the period of dividend.[9] China's policy-makers were cognizant of the temporary potential of its hundreds of millions of low-cost worker potential to power the national modernization agenda, and hence implemented an agenda to capture that potential.[10]

That agenda included foreign investor incentives for labour-intensive export-oriented manufacturing investments in economic zones from along China's coast from the mid-1980s, which offer an example of related policy incentives and enabling rural labour to move to cities and coastal regions to work in the ensuing factories.[11] Those trends together help explain the foundations of how and why China, from the 1990s and into the 2000s especially, became the world's factory.

The aftermath of a demographic dividend period, however, comprises a period of intensifying population ageing. The resulting relatively high share of elderly dependents – if new sources of growth are not identified - dampens the economic growth rate thanks to falling per capita labour supply and production growth. This helps to explain an element of China's recent growth deceleration, from three decades of growth of some 10% per annum to around some 6% in over most recent years, and sluggish growth in many high-income countries also, including G20 host Japan.

The importance of China's economy to the world economy makes China's management of its fading demographic dividend growth era of wide interest and significance. Lesser understood in that context, however, is the rich Chinese language literature and thinking on how the demographic transition has affected China's development since the 1980s, and how that might uniquely – and positively - impact China's progress through its next phase of growth. Of seminal importance within that literature is the concept of "not rich, first old", more commonly known in English as "getting old before getting rich".

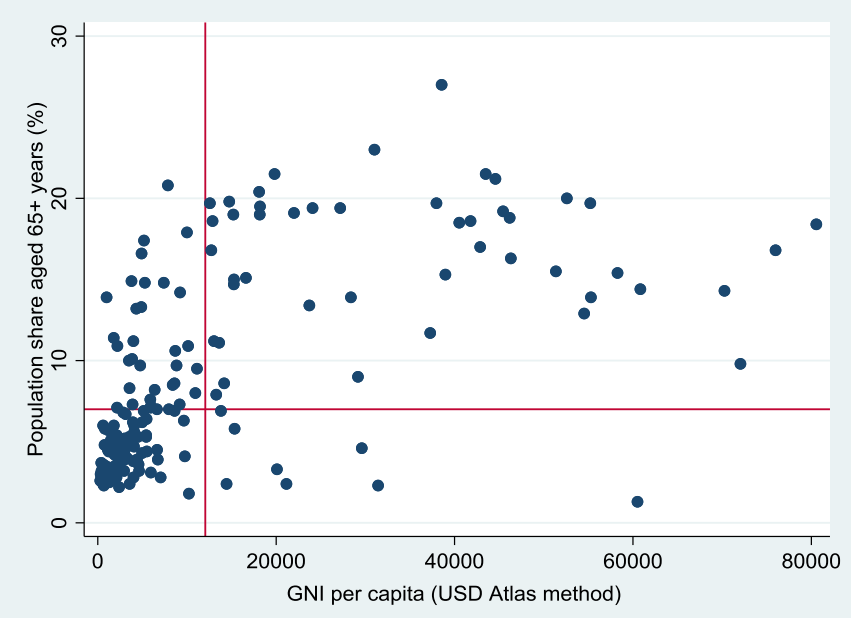
China's Economic Demography Transition

⇒ ***What is 'getting old before getting rich'?***

In an early and seminal contribution to China's economy demography literature, Wu (1986) concluded that unusually rapid declines in the fertility rate at low per capita income levels would mean that China would ultimately be 'not rich, first old' (未富先老).[12] In other words, for given fertility rates projections there

was no feasible projected rate of economic growth at which China would become a high per capita income country ahead of its demographic transition reaching a more advanced (population ageing) phase. Hence, China's fate was to eventually be "not rich, first old". Figure 5 helps to explain the basic 'not rich, first old' concept, and importantly, also internationalizes its relevance to all economies.

Figure 5: Countries by share of old and per capita income, 2017



Source: World Bank, World Development Indicators (accessed February 2019).

Figure 5 displays the distribution of countries by share of persons aged 65 and over and by level of income per capita in the year 2017. The horizontal and vertical dividing lines reflect standard thresholds that, somewhat arbitrarily, distinguish 'old' from 'young' and 'rich' from 'poor' respectively. In demography when a nation's population share of persons aged over 64 crosses the 7% benchmark it is considered to enter a population ageing phase; and where a nation's per capita income exceeded $US12,055 (2017, Atlas method) an economy is classed as a high per capita income country (i.e. rich) by the World Bank. China, for around a decade, has hence been positioned among the many other 'poor-old' economies represented by the dot points in the top left corner.

Figure 5 hence also categorises the world's countries into four economic demography categories: "poor-young"; "rich-young"; "poor-old"; and "rich-old". Together these form the Economic Demography Matrix (Table 1),[13] movement over time within and across categories of which for a respective country encapsulates the idea of the 'economic demography transition'.

Table 1: The Economic Demography Matrix (EDM)

		Demographic Transition	
		Early	Late
Economic Transition	High-Income per capita	*Rich and Young*	*Rich and Old*
	Low and Middle-Income per capita	*Poor and Young*	*Poor and Old*

Source: Johnston (2018a and 2019c).

Since the mid-1980s, Chinese policy makers have been aware that then 'poor-young' China would most feasibly move, if at all, from the 'poor-young' category straight to the 'poor-old' EDM category. That expectation was based on projected economic growth per capita (the economic transition) and projected fertility and morbidity rates (the demographic transition).[14] This worried Chinese policy makers – for reasons that are best also understood by all policy makers, in rich and poor countries.

Table 2: G20 countries by Economic Demography Matrix category

EDM Category	**G20 member countries**
Poor-Young	India, Indonesia, Mexico, South Africa
Poor-Old	Brazil, China, Russia, Turkey
Rich-Young	Saudi Arabia
Rich-Old	Argentina, Australia, Canada, Chile, France, Germany, Italy, Japan, South Korea, UK and USA.

Where "old" refers to countries with greater than 7% of population aged 65 and over (and young otherwise); where 'rich' applies where a country has a gross national income per capita of $12,056 in 2017 (World Bank, 2019).

Toward that broader goal and given the G20 context of this paper, Table 2 lists G20 member countries by EDM category. Not only are the world's major economies and all regions represented in the G20 grouping, but so too each of the EDM category types. The next section elaborates the foundations of some of the extrapolated lessons from the Chinese concept of "getting old before getting rich". It is noted that where in English this is understood as "getting old before getting rich", translated directly from Chinese is more literally understand as equivalent to "not rich, first old".

The Economics of "Getting Old Before Getting Rich"

⇒ ***Why has China feared being 'not rich, first old'?***

There are important reasons that left China afraid of being 'not rich, first old'.

First, falling labour supply and production growth would remove the demographic dividend element of China's growth rate, meaning lower rates of new resource generation for realizing the goal of modernization. In addition, the transition to new sources of growth itself would be challenging, let alone in combination with a rising elderly burden.

Secondly, that enlarged elderly population share would re-direct financial and human resources toward caring responsibilities – and hence also away from the yet completed process of national development. In addition, the rapid speed with which China would eventually age (Figure 4 (from around now)) might also mean that China would not be able to adequately prepare to provide for the needs of its elderly either.

Third, a falling working-age population would induce labour shortages that in turn would inflate wages. In a development context, it was specifically feared China would experience disproportionate wage inflation before it reached a parallel international level of technological competitiveness in those industries. This in turn, would compound related growth challenges and also transition it to more advanced sectors and growth drivers.

Fourth, the absence of a regional reference point for an economy having got rich when already demographically old. That is, Hong Kong, Japan, Macao, Singapore and Taiwan had all got rich *before* getting old.[15] This in turn would make the policy journey for China's development more treacherous.

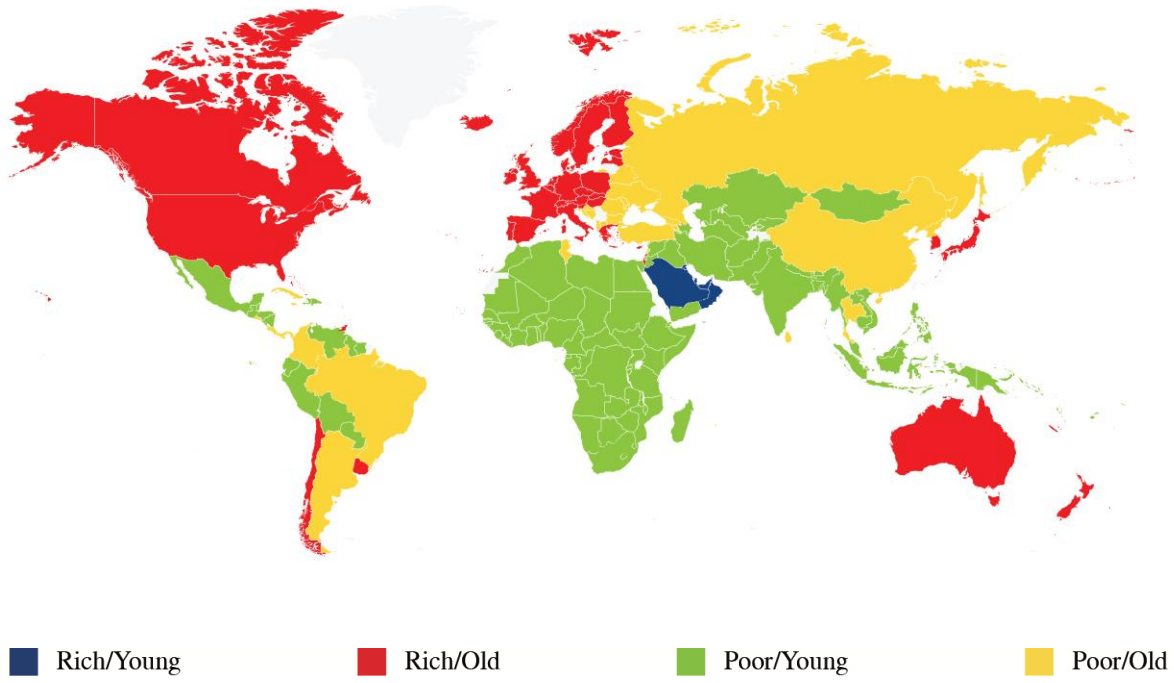
Drawing these challenges together led to fears that China would ultimately be inhibited from joining the economic frontier. As Wu (1986, p.37) noted, China would suffer an "advanced country disease" (population ageing) as a developing country, and this could prevent China's prospects of ever being able to achieve its modernization goals.

Thanks partly to the preparations that ensued those pessimistic 'not rich, first old' fears, however, China is arguably relatively well-prepared for the onset of rapid population ageing.[16] In addition, the ensuing experience of China's continuous economic demography transition development approach offers prospectively very useful and timely lessons for all countries. Directly these lessons apply mostly to today's 'poor-young' countries, including South Africa and sub-Saharan African economies on the cusp or in the early phases of a process of demographic transition.

Lessons from China for Youth-rich Developing Countries

Figure 6 presents the world map coloured according to the relevant Economic Development Matrix category. In sum, OECD countries tend to be 'rich-old'; transition economies, like China and Russia, tend to be 'poor-old'; fuels-rich, especially major oil exporting countries, are typically 'rich-young', and most 'poor-young' countries are located in Africa and South and South East Asia. Regardless of EDM category, all phases of the economic demography transition can be usefully comparatively understood.[17] The focus here is, however, the development angle, and hence a focus on "poor-young" lessons.

Figure 6: World Map by Economic Demography Matrix category



Data: World Bank, World Development Indicators (2018)

First, a caveat note that it is understood there are elements of economic demography policy-making in China, including and for example the One Child Policy, that are unique to that country. Moreover, where it is not the preference of countries or households to reduce fertility rates and demographic transition is stationary, these lessons are of lesser relevance. For "poor-young" countries with populations showing

signs of moving through a demographic transition process, however, the basic elements of China's approach to co-managing its economic and demographic transitions – the economic demography transition – may form a powerfully informative reference point.

Second, it is seminally noted that thanks to rising life expectancy and falling mortality at progressively lower per capita incomes, it is probable that most developing countries going through a successful development process over the coming decades – will, like China today, also eventually be 'not rich, first old'. Hence, identifying useful lessons from China's early experience of managing a probable period of "getting old before rich" might form a very useful reference point for managing an independent and broader national development process.

⇒ ***Adoption of a two-tier economic demography transition development strategy***

Chinese policy makers understood early in the demographic transition process that China would be 'old before rich' from around the late 2000s. With that knowledge, from the 1980s they appear to have devised a continuously-evolving two-tier economic demography transition strategy for the country's development.

The first tier required finding and implementing policies to capture China's expected three-four-decades-long demographic dividend window for national development. The second tier required advanced preparation for the inevitable onset on rapid population ageing – including via extraordinary success in the first tier.

In China's case, the first tier can be summarized as policy makers having offered incentives for labour-intensive and industrial value-chain investors to set up in China while also enabling waves of migrant rural labour into industrial and export-oriented coastal hot spots. The success of the first-tier meantime would underpin the resources that would support the second tier of the strategy. That is, and since the first stage of the strategy would see rising national and household incomes, those in turn, under the proposed 'second-tier' of China's preparations, would be progressively invested in the education of the next generation. Fewer children per household meant that per capita spending on the children's education was vastly higher than in the earlier period. This more educated, smaller, cohort would then, in theory later be able to be sufficiently newly productive so as to provide for the larger older generation.

Concurrently, retirement promises made to the older, larger cohort, have always been relatively modest. This ensures that these do not become unsustainable, in which case the early onset of population ageing may be more likely to stall China's modernization agenda. Thanks to that long-run economic demography

transition strategy China is arguably in fact relatively well-positioned to continue its development at this juncture.[18]

⇒ ***An expeditious utilization of youth-rich fruits***

China's approach to grasping its demographic dividend was not only one of domestic reforms, but also opening. The timing of that opening was also fortuitous: China's low-wage demographic dividend era opened up broadly at the same time as the high-wage demographic dividend era of Japan, Hong Kong, Singapore, the USA, Canada and Western Europe economies. This saw China supplying a seemingly limitless supply of low-cost manufactured goods, and rich countries providing the related high-technology goods, and services – until around the time of the Global Financial Crisis beginning in 2008.

In response to advancing development levels and rapid population ageing at home, meantime, China now is rapidly seeking to shift its growth model away from low-cost and labour-intensive sectors, and towards more capital and innovation-intensive sectors and services. Although success is not guaranteed and the path forward is treacherous, China is expected to gradually move out of sectors that China has over recent decades dominated to such an extent as to make it difficult for other labour-rich 'young and poor' economies to compete.[19]

In 2013, a few years ahead of China's outbound investment inaugurally exceeding inbound foreign investment, China also launched a flagship international strategy, the Belt and Road Initiative. Under this initiative China has allocated many billions of dollars to supporting its outbound investors, and to providing concessional financing for development in other developing countries.[20] In this respect, developing countries well-positioned to attract related new international investment opportunities may ultimately be among the main beneficiaries of the contemporary onset of population ageing in China.

China's own economy will gradually move into areas that are more traditionally associated with 'old and rich' developed economies, including high-tech manufacturing, biomedical industries, and financial and educational services – helping to explain an element of prominent, perhaps inevitable, recent rising tensions between China and USA.

Most OECD countries are now also experiencing a process of rapid population ageing. Although without a flagship "Belt and Road Initiative" type label or strategy for outreach to poor-young developing countries, this rapid and advanced demographic change in rich countries will inevitably also open new doors for today's youth-rich economies, directly and indirectly. Advanced deliberation and discussion of those prospects and underpinning trends will arguably help today's poor-young alongside both poor-old and rich-old countries to successfully open up investment opportunities for their citizens and enterprises over the years ahead. In this way, the shape of the experience of successful development of today's 'poor-young'

countries may look different to China's own journey. However, China's strategic awareness of the economic demographic transition is itself the key lesson.

Concluding Remarks

More than 80% of world GDP is generated in countries facing an unprecedented reversal of the global population pyramid. Such is the transition that as Chair of the G20 in 2019 Japan has added demographics, and population ageing risks especially, to this year's G20 gatherings.

Now rapidly population-ageing, China's unusual recent demographic experience offers an unusually rich economy demography literature also. Extrapolating from a seminal concept from that literature, 'not rich, first old' offers useful lessons across all countries. Learning from China's economic demography transition strategy through its recent rapid development especially offers a powerful reference point for today's "poor-young" countries in particular.

Enhanced global dialogue and experience sharing toward better understanding the broader relevance of that reference point is timely.

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[1] 1980, UN, World Population Prospects, 2019
[2] Given skewed birth rates in favour of males in China, the replacement rate may be slightly higher in China's case.
[3] Wu (1980: 38).

[4] The TFR is the expected number of children a woman who survives to the end of the reproductive age span will have during her lifetime if she experiences the given age-specific rates (UN Data, 2016). China's TFR has now stabilized at around 1.6, which is below the replacement level of 2.1.

[5] For implicit international comparability World Bank data is presented. In China, however, the retirement age is 60 years for men and lower again for women, inferring that China's actual workforce population share may be lower than presented.

[7] See Feng, W., Cai, Y., & Gu, B. (2013) for debate on the legacy of the One China Policy.
[8] Mason et al (2017) and Cai, Garnaut & Song (2018).
[9] See Gollin (2014) on the Lewis Model.
[10] See Cai (2010) for case of China.

[11] Cai (2018).
[12] The "not rich, first old" idea has since been popularized in English as "getting old before getting rich", though no equivalent dynamic inference is identifiable from the original Chinese language concept.

[13] See Johnston (2018a)
[14] See Wu (1980).
[15] South Korea later would get old about as it got rich (see Johnston 2018b).
[16] See Johnston, Liu, Yang and Zhang (2016).
[17] See Johnston (2019b) for comparison of China and Japan; Johnston (2019a) for Indian Ocean country elaboration; and Johnston, Liu, Yang and Zhang (2016) and Johnston (2019c) for an international reference.

[18] See Johnston, Liu, Yang and Zhang (2016); Johnston (2019a and 2019b).
[19] See Garnaut, Johnston and Song (2017) and Stiglitz, J. E., Lin, J. Y., & Patel, E. (Eds.). (2013).
[20] See Johnston (2018a and 2018b).