

East Asia Economic Development Model, Urbanization and the US-China Trade Friction*

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In 2019, ACI was ranked 12th globally, 2nd in Asia and 1st in Singapore amongst 90 think tanks worldwide under the “Best University Affiliated Think Tank” category by the Think Tanks and Civil Societies Program at the University of Pennsylvania, USA

Presentation Outline

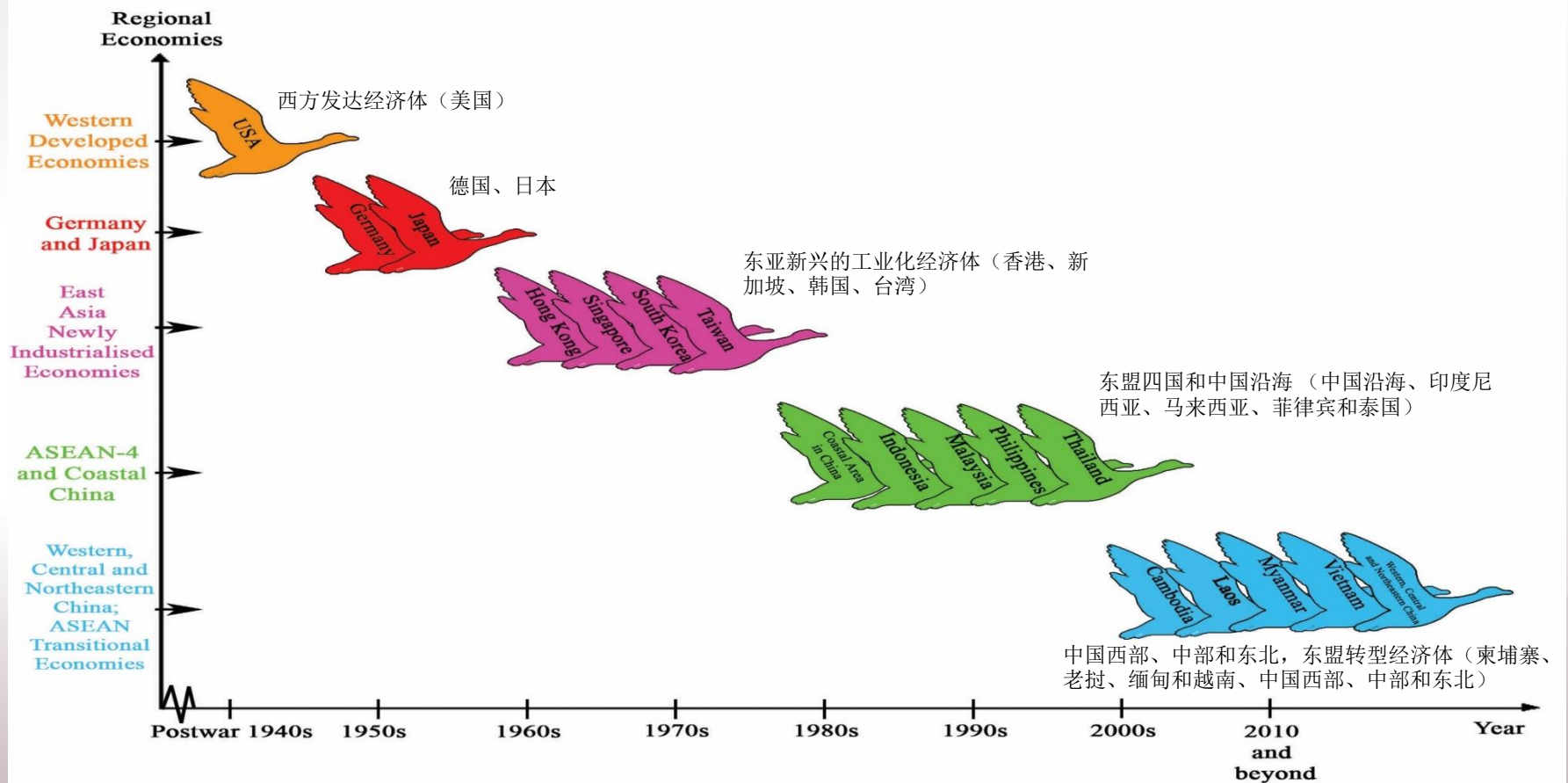
1. **East Asia Economic Development Model: Resolving Three Bottlenecks**
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1. The East Asian Economic Development Model: Resolving Three Bottlenecks

东亚经济发展模式:打通3个瓶颈

The Panoramic View of Flying Geese Model on Economic Development, Cooperation and Specialization

经济发展、合作与专业化的雁行模式全景



The Flying Geese Model: Specialisation based on comparative advantage and cooperation 雁行模式 (FGM)：基于经济比较与合作的专业化

- Japanese economists first used the Flying Geese Model (FGM) to describe waves of economic growth and development based on the transfer of comparative advantages between economies. 日本经济学家基于经济体间比较优势的转移，首次使用雁行模式来形容经济发展的浪潮与发展
- Developed countries or regions tend to relocate their manufacturing and labour-intensive industries to developing countries or regions through international investment and trade, resulting in industrial restructuring and technological upgrading. 发达国家或地区倾向于将它们的制造业与劳动密集型工业通过国际投资与贸易的方式迁 移至发展中国家或地区，这样做就引发了业结构调整与科技升级
- 1950s: USA relocated steel, textile and other traditional industries to Germany and Japan, turning its focus on to developing semiconductor, telecommunication, computer and other emerging technology-intensive industries. 20世纪50年代：美国将其钢铁、纺织等传统工业迁往德国和日本，并将其重点转移到发展半导体，通讯，计算机等新兴技术密集型产业上
- 1960s to 1980s: Japan and Germany then shifted their low value-added, labour-intensive and resource-intensive industries to East Asia's NIEs, allowing them to focus on developing integrated circuits, precision machinery, fine chemicals, household appliances, automobiles and other high value-added technology-intensive industries. 20世纪60年代至80年代：日本和德国将其附加值低的、劳动密集型与资源密集型产业向东亚的新兴工业化经济体转移，使他们能够专注于发展集成电路，精密机械，精细化工，家电，汽车和其他高附加值的技术密集型产业上

The Flying Geese Model (continued) 雁行模式（接上页）

- 1990s: Europe, Japan and the **four Asian dragons** gradually began to relocate those industries that were becoming less competitive in their own countries or regions to China's coastal regions and the **ASEAN-4**, namely Indonesia, Malaysia, Philippines and Thailand. 20世纪90年代：欧洲、日本和亚洲四小龙逐渐将它们国家或地区的竞争力较弱的工业转移至中国大陆的沿海地区与东盟四国，也就是印度尼西亚、马来西亚、菲律宾和泰国
- After 2000: due to rising wages and higher land cost in the more developed economies of **China's coastal provinces**, the Chinese government encouraged and incentivised multinational corporations (MNCs) to shift their high cost, high energy consuming, labour-intensive and environmentally taxing industries and production processes to the relatively undeveloped inland regions in order to regain international competitiveness and also to ensure a more balanced regional development. 2000年后：由于中国大陆沿海省份经济体的工资上涨和地价上升，中国政府鼓励和引导跨国公司，将它们高成本、高能耗、劳动力密集型与高污染工业或生产流程转移至相对落后的内陆地区，以便重获国际竞争力，并确保地区间的发展更加均衡
- This led to the *domestication* of the FGM: From international to domestic relocation of industries across regions in China. Meanwhile **CLMV of ASEAN**, namely Cambodia, Laos, Myanmar and Vietnam also began to use their natural and abundant low-cost labour resources to attract foreign companies to invest in manufacturing and technological components, replicating the East Asia export-oriented economies by engaging in international trade.这就形成了雁行模式的本土化：从国际到中国国内地区间的工业转移。与此同时，柬埔寨、老挝、缅甸和越南也开始使用他们的自然资源和丰富的低成本劳动力资源，吸引外国公司投资于制造业和技术领域，通过参与国际贸易，复制东亚出口导向型经济体的发展

The East Asian Economic Development (EAED) Model 东亚经济发展模式

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- The experience and success of the robust EAED model have shown that releasing **production bottlenecks** through comprehensive planned investment to resolve **infrastructure bottleneck** is a prerequisite condition for economic take-off and a useful support for sailing through the **middle income trap**. 东亚经济发展模式的经验与成功已经揭示了全面打通**基础设施瓶颈**进行投资规划以突破**生产瓶颈**是经济腾飞的先决条件和顺利渡过中等收入陷阱的有力支持
- Most developing countries have weak budgetary conditions. Due to the relatively massive capital requirements, the long gestation period and the longer- term nature of returns on investment for infrastructure projects, cost of financing tends to be expensive and sources of funding are also in keen competition with other fund commitments, resulting in existing **financing bottlenecks** too. 发展中国家财政实力基础较弱。由于需要相对庞大的资金和较长时间的酝酿，以及基础设施项目投资回报慢的本质，融资成本往往是高昂的，资金来源也需要与其他融资承诺进行激烈的竞争，这也导致了现有的**资金瓶颈**
- Effective leadership and good governance clearly play a paramount role in harnessing and promoting infrastructure investment. For balanced, sustainable and inclusive regional economic and social integration, both physical and soft infrastructure provisions for greater connectivity are increasingly viewed as a form of regional public goods. 有效的领导和良好的管理显然在治理和促进基础设施投资中扮演着十分重要的角色。对于均衡、可持续和包容性的区域经济和社会融合，对于更好的连通性的实质的和非物质的基础设施规定都逐渐被视为区域公益的一种形式
- A longer-term roadmap for Asia-Pacific connectivity should be planned, and stronger economies which have comparative advantages in terms of capital, technology and competitive skills should play an active role in meeting pressing **infrastructure bottlenecks** which are causing growth inertia and imbalanced regional development. 一个对于亚太连通性的长期路线图应当被计划和提出，并且在资金、技术和竞争技能方面具有比较优势的较强经济体应当对于突破**基础设施瓶颈**发挥积极作用，因为这一障碍导致了增长惯性和地区发展失衡

Conditions for Economic Development, Intensifying Globalization and Its Discontents

经济发展的条件和全球化与竞争的加剧

- Under the EAED model for economic development to finance infrastructure investments to release production bottleneck is a prerequisite for economic take-off. Thus a forward looking and prudent government must first overcome constraints for infrastructure funding. 在东亚经济发展模式下，通过投资基础设施缓解生产瓶颈是经济腾飞的先决条件。因此，一个具有前瞻性和审慎精神的政府必须首先克服基础设施建设资金的局限
- Education, innovation and entrepreneurship, being important social equalizers, are critical for ensuring an inclusive society. Thus a prolonged period of social stability is an overwhelming priority, without which social mobility and meritocracy cannot prevail. 教育，创新和创业，是重要的社会均衡器，它们是确保包容性社会的关键。因此，在很长的一段时间里，社会的稳定是最为优先需要确保的。如果没有这一条件，良性的社会流动和经营管理是无法实现
- Following the overthrow of the communist regimes in Eastern Europe in 1989 and the collapse of the Soviet Union in 1991, the end of the Cold War heralded the ascent of the market-oriented economy over central command planning systems. Globalisation accelerated and ushered in economic prosperity amidst growing international stability. 随着1989年东欧共产主义政权的倾覆和1991年苏联的解体，冷战的结束预示着市场经济优于基于中央指令的计划经济系统。全球化加速并迎来了国际稳定和经济的繁荣
- Globalisations intensification since the 1990s was made possible by information technology and the lowering of trade and non-trade barriers facilitated by regional and bilateral free trade agreements, resulting in more intense competition amongst global economies based on comparative advantages. 信息技术的发展以及区域和双边自由贸易协定推动的贸易和非贸易壁垒的降低，使20世纪90年代以来全球化的加剧成为可能，这使国际经济体间基于比较优势的竞争更加激烈
- Emerging economies, especially those in Asia with an abundant highly skilled labor supply that command lower wages than their western counter parts, led to a reshuffling of production networks with shifts in locations and sectors in terms of employment created. 新兴经济体，尤其是亚洲具有大量技术劳动力的经济体，比他们的西方同行们拥有对于地薪酬劳动力更强的控制，这就引发了生产网络的重组，同时在新的地点与部门创造了就业

2. China-ASEAN Connectivity and Economic Integration: Let facts speak for itself

**中国和东盟之互联互通和经济整合：
让数据说话**

Vector Autoregressive (VAR) Model of Estimation on the Engines of Growth

$$y_{it} = \lambda_i + \sum_{j=1}^p \phi_{ji} y_{it-j} + \sum_{j=0}^p \beta_{ji} y_{it-j}^f + \varepsilon_{it}$$

$$\begin{pmatrix} 1 & -\beta_{01}w_{12} & -\beta_{01}w_{13} \\ -\beta_{02}w_{21} & 1 & -\beta_{02}w_{23} \\ -\beta_{03}w_{31} & -\beta_{03}w_{32} & 1 \end{pmatrix} \begin{pmatrix} y_{1t} \\ y_{2t} \\ y_{3t} \end{pmatrix} = \begin{pmatrix} \lambda_1 \\ \lambda_2 \\ \lambda_3 \end{pmatrix} + \begin{pmatrix} \phi_{11} & \beta_{11}w_{12} & \beta_{11}w_{13} \\ \beta_{12}w_{21} & \phi_{22} & \beta_{12}w_{23} \\ \beta_{13}w_{31} & \beta_{13}w_{32} & \phi_{33} \end{pmatrix} \begin{pmatrix} y_{1t-1} \\ y_{2t-1} \\ y_{3t-1} \end{pmatrix} + \begin{pmatrix} \varepsilon_{1t} \\ \varepsilon_{2t} \\ \varepsilon_{3t} \end{pmatrix}.$$

This can be expressed more compactly as:

$$(B_0 \cdot W)y_t = \lambda + (B_1 \cdot W)y_{t-1} + \varepsilon_t,$$

where

$$B_0 = \begin{pmatrix} 1 & -\beta_{01} & -\beta_{01} \\ -\beta_{02} & 1 & -\beta_{02} \\ -\beta_{03} & -\beta_{03} & 1 \end{pmatrix}, \quad B_1 = \begin{pmatrix} \phi_{11} & \beta_{11} & \beta_{11} \\ \beta_{12} & \phi_{22} & \beta_{12} \\ \beta_{13} & \beta_{13} & \phi_{33} \end{pmatrix}, \quad W = \begin{pmatrix} 1 & w_{12} & w_{13} \\ w_{21} & 1 & w_{23} \\ w_{31} & w_{32} & 1 \end{pmatrix},$$

Relative Importance of US, EU versus China & China versus Japan as an Engine of growth for ASEAN-5 (Indonesia, Malaysia, Philippines, Singapore and Thailand), 1980-2020

美国、欧盟和日本比较中国作为东盟5国(印尼、马来西亚、菲律宾、新加坡和泰国)的经济增长引擎的相对重要性

Relative Importance of US vs. China as an Engine of Growth for ASEAN-5 美国对比中国	
Period 时期	Ratio 比值
1980-89	9.17
1990-99	4.30
2000-10	1.53
2011-20	*0.65
Note: *Forecasted by ACI Source: Tan et al (2012, Table 6)	

Relative Importance of Japan vs. China as an Engine of Growth for ASEAN-5 日本对比中国	
Period 时期	Ratio 比值
1980-89	3.23
1990-99	1.41
2000-10	0.53
2011-20	*0.22
Note: * Forecasted by ACI Source: Tan et al (2012, Table 7)	

Relative Importance of EU vs. China as an Engine of Growth for ASEAN-5 欧盟对比中国	
Period 时期	Ratio 比值
1980-89	4.49
1990-99	2.41
2000-10	1.02
2011-20	*0.51
Note: *Forecasted by ACI Source: Tan et al (2012, Table 8)	

China's importance as a major engine of growth for ASEAN countries has been rapidly increasing over past three decades

中国作为东盟国家经济增长的主要引擎的重要性在过去30年有显著提升。

Methodology for Structural Vector Autoregressive Model

(A project commissioned by the World Bank Group 2017)

结构向量自回归模型的计算方式(2017年获世界银行委托展开的项目)

- The growth rate of GDP of country i can be expressed in an autoregressive distributed lag model with white noise errors

$$y_{it} = \lambda_i + \sum_{j=1}^p \phi_{ji} y_{it-j} + \sum_{j=0}^p \beta_{ji} y_{it-j}^f + \varepsilon_{it}$$

where $y_{it}^f = \sum_{j=1}^{n+1} w_{ij} y_{jt}$, $i \neq j$, and w_{ij} is the export share from the i th country to country j .

The entire system of equations is formed by estimating equation for each of the n countries in the world.

Although these n equations appear to take the form of seemingly unrelated regressions (SUR), they can also be expressed as a structural VAR. This SVAR formulation is useful for the purpose of estimation, forecasting, and impulse-response analysis.

- The general VAR(p) form is: $(B_0 \cdot W_t) y_t = \lambda + (B_1 \cdot W_{t-1}) y_{t-1} + \dots + (B_p \cdot W_{t-p}) y_{t-p} + \varepsilon_t$

- We estimated the SVAR model and obtained the impulse response matrices using two different export share matrices representing the periods of 2001-2010 and 2011-2013. We first introduced the shock to the economies using the export share matrix fixed at the fourth quarter of 2008 which is the 12-quarter moving average over 2006-2008. We did the same with the export share matrix as of the fourth quarter of 2013 which is the 12-quarter moving average over 2011-2013.

Empirical Findings of Structural Vector Autoregressive (SVAR) Model:

A structural VAR analysis that accounts for both direct and indirect effects shows decreasing influence of OECD and increasing influence of China with India remaining a weak engine of growth for ASEAN

Five-year multiplier effects of a one percentage point positive growth shock on ASEAN-8 and others (Pre-2010)

Engine of Growth

	ASEAN-8								Others		
	BRN	KHM	IDN	MYS	PHL	SGP	THA	VTN	CHN	IND	OECD
BRN	0.751	0.003	0.186	0.128	0.042	0.137	0.073	0.100	0.409	0.090	2.703
KHM	0.002	1.162	0.114	0.206	0.060	0.241	0.111	0.193	0.670	0.112	4.406
IDN	0.001	0.001	0.762	0.042	0.012	0.047	0.021	0.024	0.116	0.022	0.631
MYS	0.007	0.013	0.221	1.271	0.101	0.455	0.207	0.233	0.989	0.183	5.376
PHL	0.003	0.006	0.118	0.232	0.836	0.238	0.119	0.135	0.661	0.101	3.611
SGP	0.011	0.019	0.426	0.709	0.158	1.266	0.294	0.380	1.443	0.265	7.531
THA	0.005	0.033	0.234	0.421	0.122	0.418	0.894	0.304	1.135	0.192	6.195
VTN	0.000	0.005	0.021	0.038	0.012	0.041	0.019	1.952	0.117	0.018	0.686
CHN	0.002	0.004	0.065	0.114	0.032	0.123	0.063	0.080	1.207	0.066	2.338
IND	0.001	0.002	0.039	0.068	0.020	0.080	0.037	0.049	0.214	0.632	1.209
OECD	0.001	0.005	0.096	0.175	0.053	0.185	0.096	0.114	0.612	0.100	4.162

Note: Highlighted are the values greater than 0.20.

Source: Asia Competitiveness Institute.

Source: Tilak Abeyasinghe, Tan Khee Giap & Le Phuong Anh Nguyen (2019), "Master Plan on ASEAN Connectivity: Assessing Growth Impacts and Interdependencies", International Journal of Logistics Economics and Globalization, United Kingdom

Empirical Findings for Structural Vector Autoregressive (SVAR) Model: Results call for measures to enhance the regional's intra-regional interdependencies as well as interdependencies vis-à-vis ASEAN's traditional and emerging trading partners

Five-year multiplier effects of a one percentage point positive growth shock on ASEAN-8 and others (Post-2010)

Engine of Growth

	ASEAN-8								Others		
	BRN	KHM	IDN	MYS	PHL	SGP	THA	VTN	CHN	IND	OECD
BRN	0.753	0.009	0.163	0.203	0.048	0.180	0.122	0.266	0.745	0.131	3.266
KHM	0.006	1.169	0.184	0.263	0.070	0.318	0.166	0.282	1.078	0.151	4.533
IDN	0.001	0.003	0.770	0.048	0.013	0.053	0.027	0.040	0.177	0.031	0.665
MYS	0.012	0.023	0.281	1.278	0.104	0.451	0.238	0.358	1.426	0.221	5.243
PHL	0.006	0.013	0.177	0.244	0.844	0.288	0.162	0.241	1.035	0.141	3.971
SGP	0.019	0.036	0.511	0.711	0.154	1.277	0.328	0.552	2.014	0.309	7.333
THA	0.010	0.057	0.319	0.438	0.128	0.425	0.929	0.448	1.636	0.239	6.131
VTN	0.000	0.007	0.030	0.042	0.012	0.041	0.025	1.970	0.178	0.024	0.706
CHN	0.003	0.009	0.092	0.127	0.038	0.135	0.083	0.136	1.397	0.088	2.398
IND	0.003	0.004	0.056	0.072	0.019	0.083	0.041	0.076	0.297	0.642	1.188
OECD	0.005	0.013	0.157	0.215	0.065	0.232	0.139	0.224	1.048	0.147	4.747

Note: Highlighted are the values greater than 0.20.
Source: Asia Competitiveness Institute.

Source: Tilak Abeyasinghe, Tan Khee Giap & Le Phuong Anh Nguyen (2019), "Master Plan on ASEAN Connectivity: Assessing Growth Impacts and Interdependencies", International Journal of Logistics Economics and Globalization, UK

3. The Root, Nature and Impact of the US- China Trade Friction: It is a red herring! 伪命题一宗：中美贸易纠纷的根源、本质 与撞击

Relative Shares of Global Gross Domestic Product[^] for Major Economies: 1-2030

主要经济体所占全球国内生产总值[^]相对份额：1-2030年

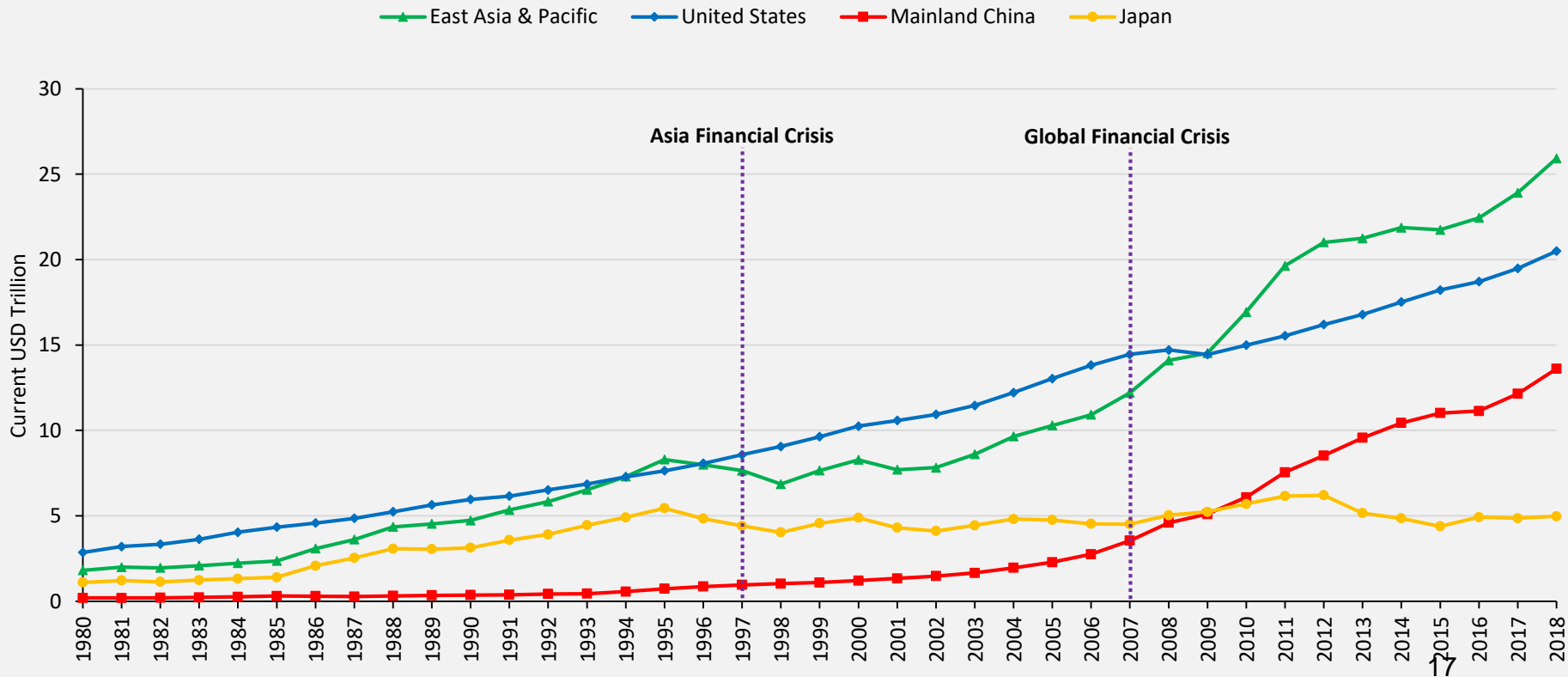
([^]Using PPP with the world as 100; *Estimated by Asia Competitiveness Institute at Lee Kuan Yew School of Public Policy, National University of Singapore; Source: Maddison 2007)

([^]使用国际购买力平价为100; *由新加坡国立大学李光耀公共政策学院亚洲竞争力研究所估算; 资料来源: 麦迪森 2007)

	1	1000	1500	1600	1700	1820	1870	1913	1950	1978	1995	2003	2030*
China 中国	25.4	22.1	24.9	29.0	22.3	32.9	17.1	8.8	4.6	5.0	10.9	15.1	25.0
India 印度	32.0	28.1	24.4	22.4	24.4	16.0	12.1	7.5	4.2	3.4	4.6	5.5	12.0
Japan 日本	1.1	2.7	3.1	2.9	4.1	3.0	2.3	2.6	3.0	7.7	8.4	6.6	8.0
A Total A 总和	58.5	52.9	52.4	54.3	50.8	51.9	31.5	18.9	11.8	16.1	23.9	27.2	45.0
Europe 欧洲	13.7	9.1	11.8	19.8	21.9	23.0	33.1	33.0	26.2	27.9	23.8	19.2	17.0
USA 美国	0.3	0.4	0.3	0.2	0.1	1.8	8.9	18.9	27.3	21.8	20.9	20.6	21.0
Russia	1.5	2.4	3.4	3.4	4.4	5.4	7.5	8.5	9.6	9.2	2.2	3.8	5.0
B Total B 总和	15.5	11.9	15.5	23.4	26.4	30.2	49.5	60.4	63.1	58.9	46.9	43.6	43.0
A + B Total A + B 总和	74.0	64.8	67.9	77.7	77.2	82.1	81.0	79.3	74.9	75.0	70.8	70.8	88.0

Gross Domestic Product of East Asia and Pacific, United States, Mainland China and Japan, 1980-2018

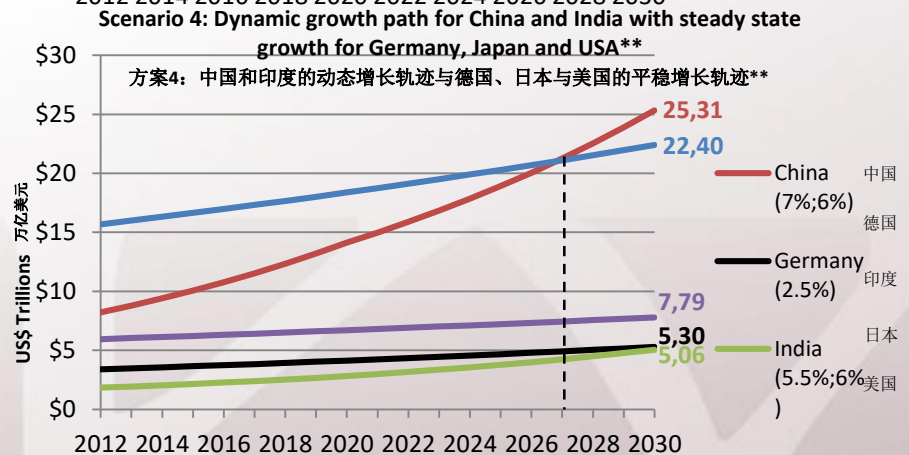
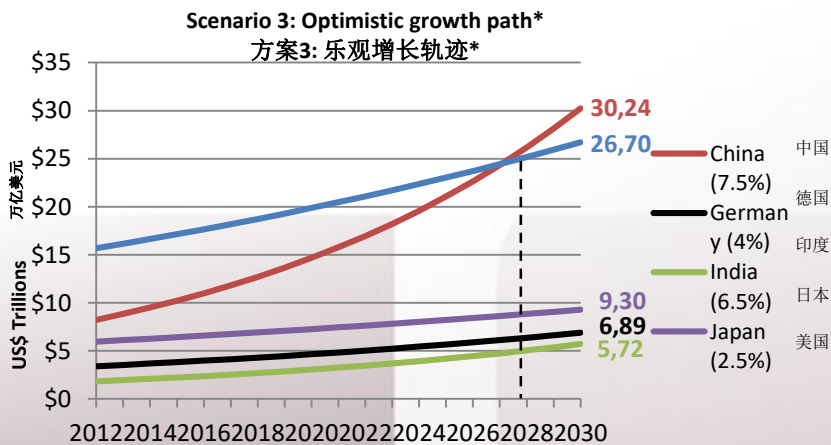
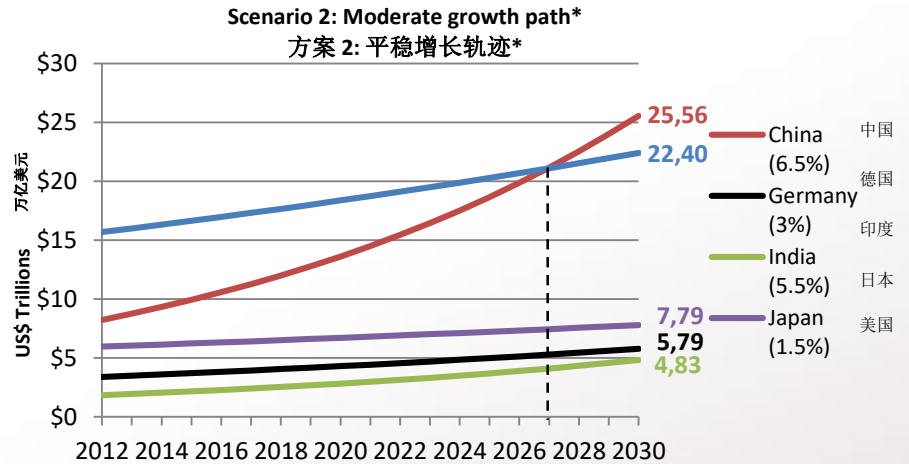
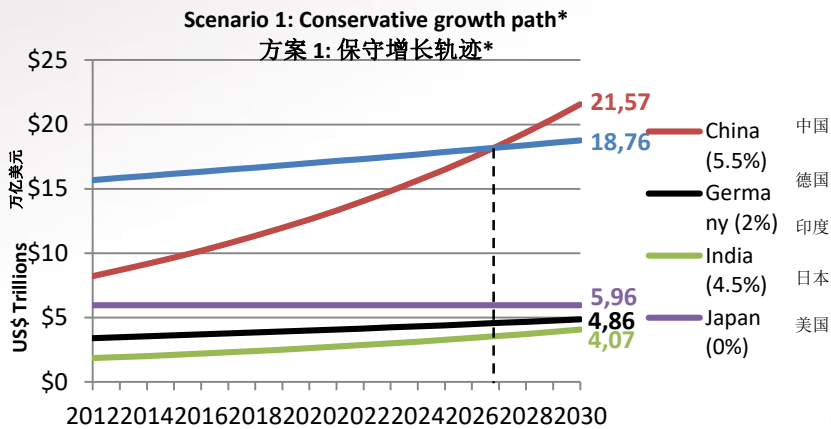
1980年至2018年东亚和太平洋、美国、中国大陆和日本的国内生产总值



Projected Nominal GDP Growth Paths, 2012-2030[^]

名义国内生产总值增长路径推计, 2012-2030[^]

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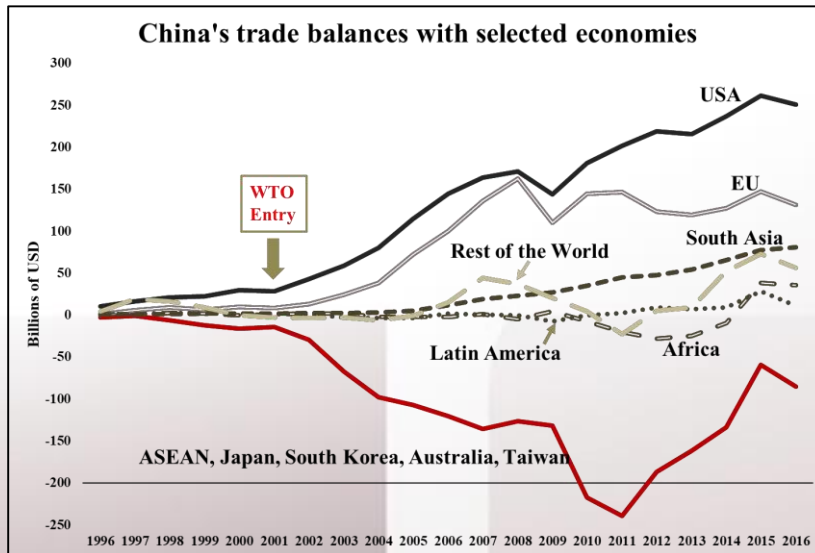
* Average growth for period 2012-2030
Source: World bank., ^ Projected by ACI at LKYSPP, NUS
* 2012-2030年间平均增长
数据源: 世界银行, ^新加坡国立大学 李光耀公共政策学院 亚洲竞争力研究所推计

** For China 2012-2020, 7% p.a.; 2021-2030, 6% p.a.
For India 2012-2020, 5.5% p.a.; 2021-2030, 6% p.a.
** 对于中国2012-2020年, 每年7%; 2021-2030, 每年6%。
对于印度2012-2020年, 每年5.5%; 2021-2030, 每年6%。

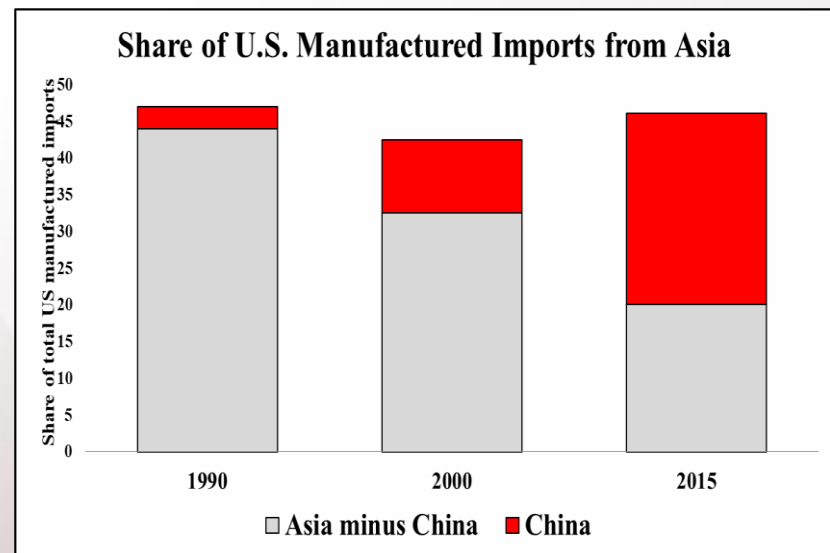
A different perspective on trade balances with trading partners

中国和贸易伙伴国的贸易平衡：另一个视角

China's Trade balances with most countries moderated



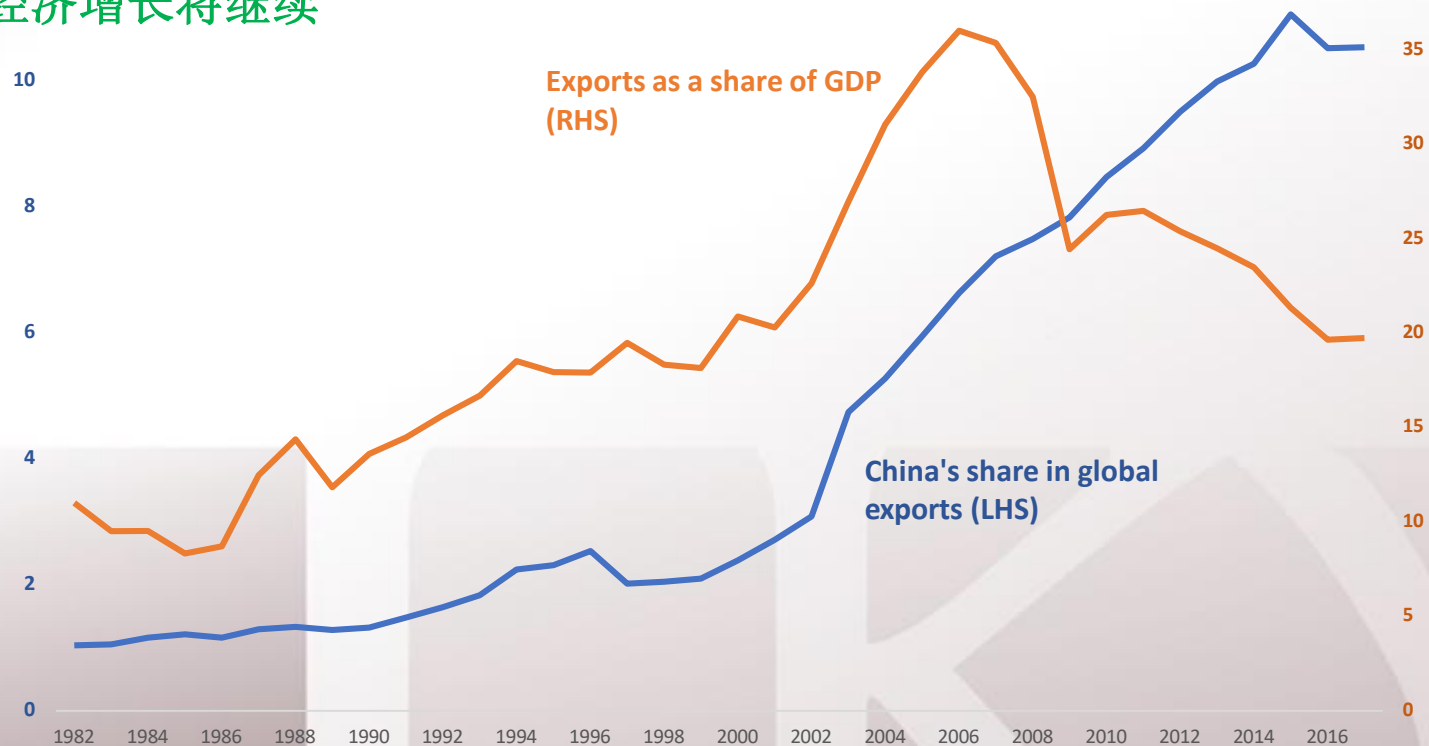
Asia's share in manufacturing imports of the US has not changed, but China's share rose as in became central to the regional production network



Source: courtesy Yukon Huang

Exports have become less important for China, even as its global share increased. The economic restructuring to reduce dependency on export-driven strategy, accelerating domestic demand-driven growth on services, and the push for green environment with quality and sustainable economic growth would continue

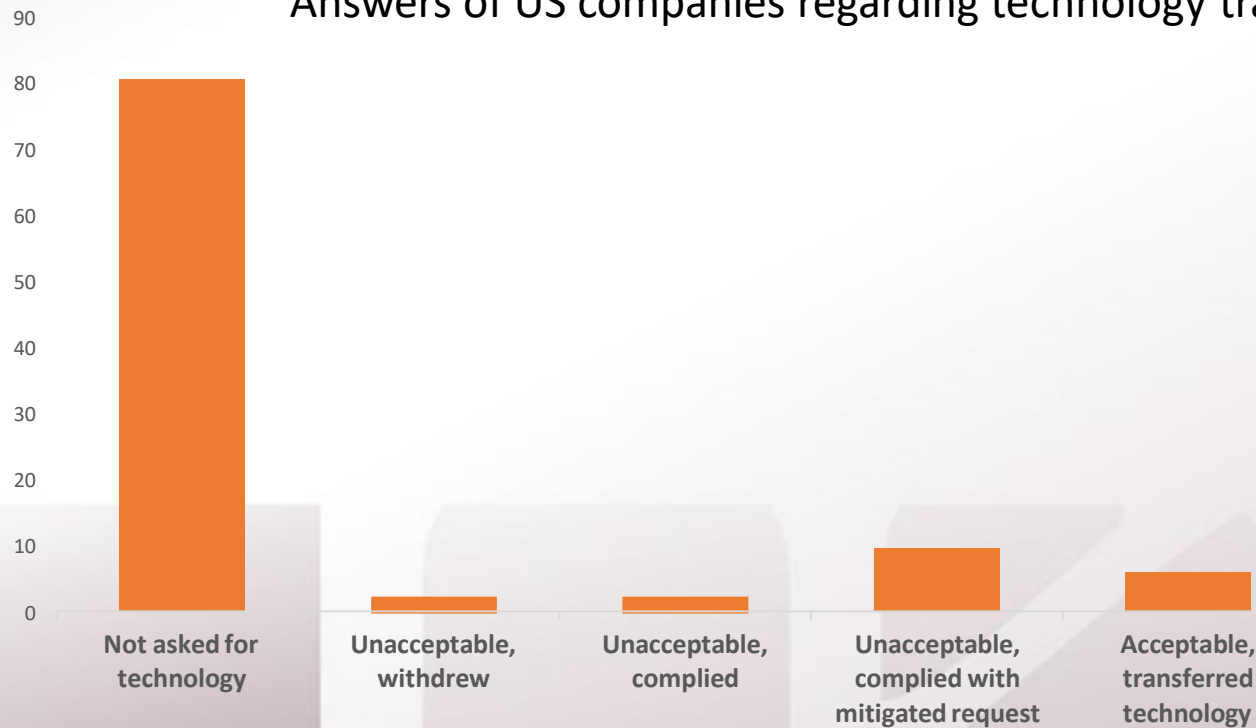
出口占中国国民生产总值在下降中，尽管其在全球的比重持续增加。经济重组以减低对出口主导的策略，加速国内以服务为主的需求，推动绿色环境、高素质和可持续的经济增长将继续



Technology Transfer: Is the Case of China Theft Supported by Evidence?

技术转移：中国的盗窃行为有证据吗？

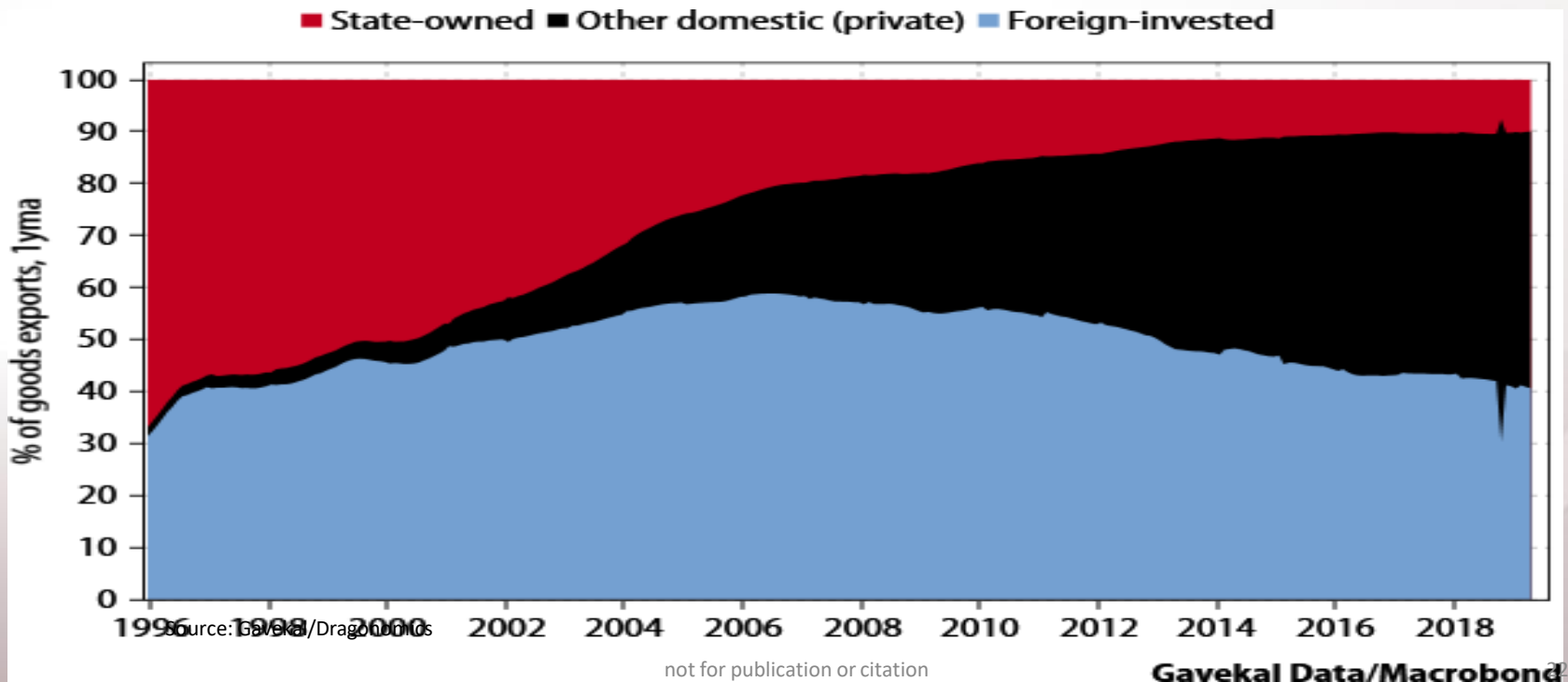
Answers of US companies regarding technology transfer



Source: US-China Business Council Member Survey 2017 https://www.uschina.org/sites/default/files/2017_uscbc_member_survey_1.pdf Thanks to Yukon Huang for the idea.

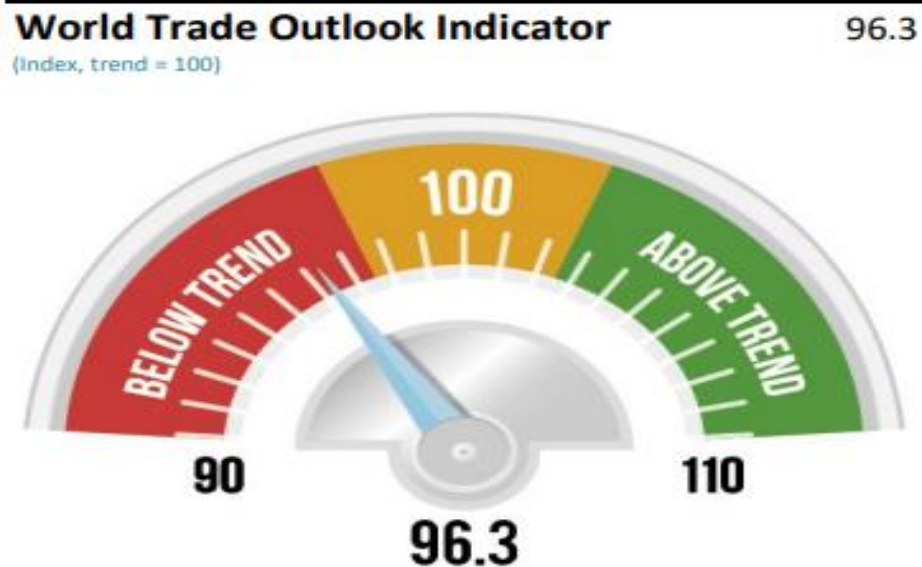
China's exports is dominated by foreign and domestic private firms, not State-Owned Enterprises (SOEs). The Chinese government should press on reforming SOEs and to encourage further private sector development and entrepreneurship in particular to ensure sufficient funding channels for small and medium enterprises.

中国的出口主要来自外国和私有企业而非国有企业。确有国进民退之说吗？扩大中小企业融资管道是当务之急。



Slowdown in World Trade Growth 世界贸易进一步放缓

Below-Trend Growth in Trade for World Trade Outlook Indicator(WTOI) for First Quarter of 2019 and latest trends have been worsening since.....



Drivers of trade

	Level of Index	Direction of change
Merchandise trade volume (Q4)	100.2	↓
Export orders	96.6	↑
International air freight (IATA)	92.3	↓
Container port throughput	101.0	↓
Automobile production and sales	92.2	↓
Electronic components	96.7	→
Agricultural raw materials	92.4	↓

Source: World Trade Outlook Indicator (WTOI).

- WTOI provides real-time movements in world trade relative to recent trends.
- Trends released in May 2019 shows a below trend growth in trade in the first quarter of 2019.
- Except Merchandise trade volume and Container port throughput which remain above the baseline value of 100 (declines nonetheless), all the other drivers of trade show a below trend growth.

Which factors are behind the global and China's recent economic slowdown? 世界与中国经济放缓的因素

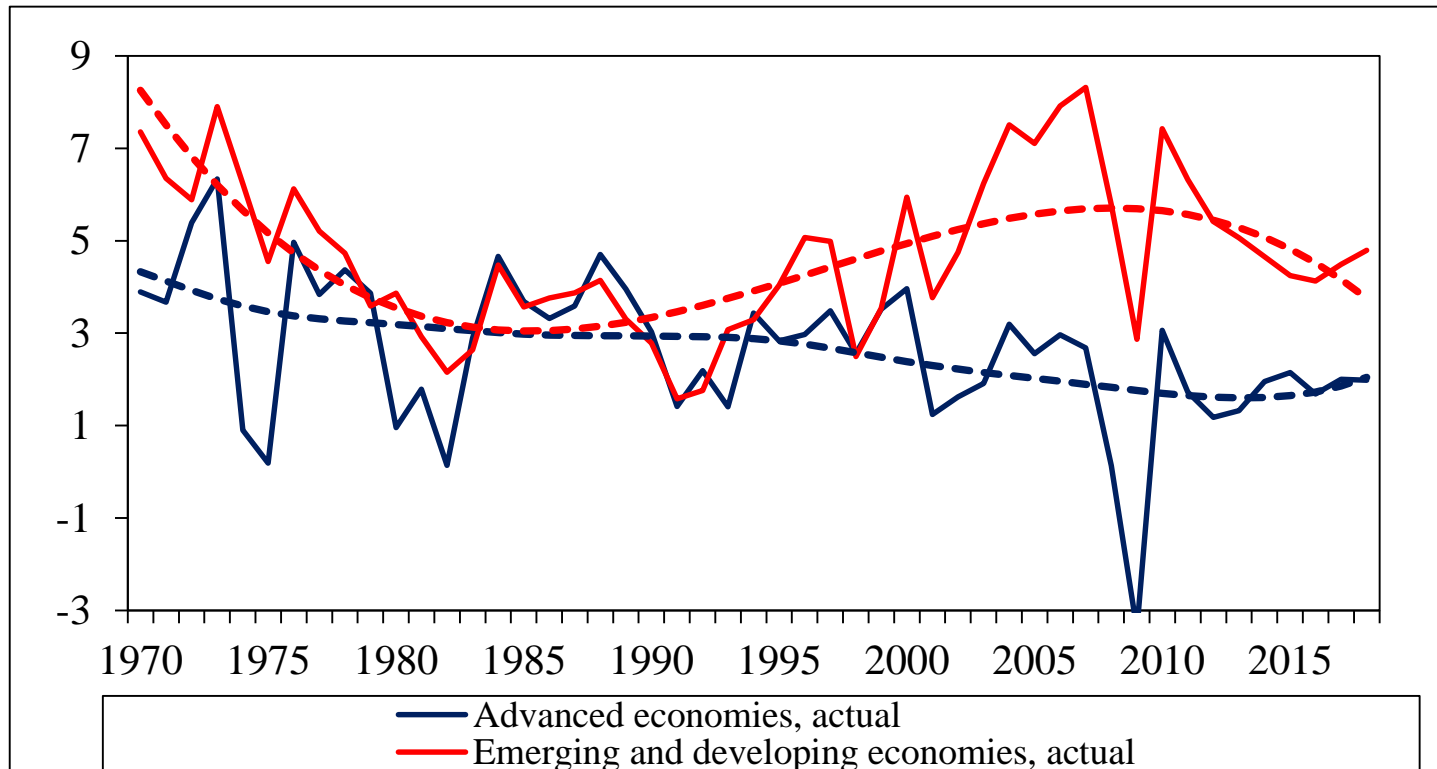
Trade Tensions, Policy Uncertainty, Confidence Anxiety and China's on-going domestic economic re-structuring are amongst the major factors

1. Rising Trade Protectionism, Unilateralism and Effort to Contain China
2. Rising Nationalism and Populism around the World
3. On-Going Domestic Re-structuring of the Chinese Economy
4. High Level of Public Debts in China and elsewhere
5. Weakening Consumer and Business Sentiments caused by Trade Tensions
6. No Deal Brexit and Potential Shifts of Economic Activities within the European Union
7. Global Warming, Climate Change and Environmental Protection Measures
8. Geopolitical Tensions in the Middle East with Potential Spikes in Oil Prices

Trend Decoupling in Real GDP Growth from 1985 to 2010, but what caused the convergence since 2012 is to be monitored closely?

开发经济体和发展中经济体之经济增长趋势从1985到2010年开始脱勾，从2012年后开始汇聚的趋势有待进一步观察

Actual and Trends

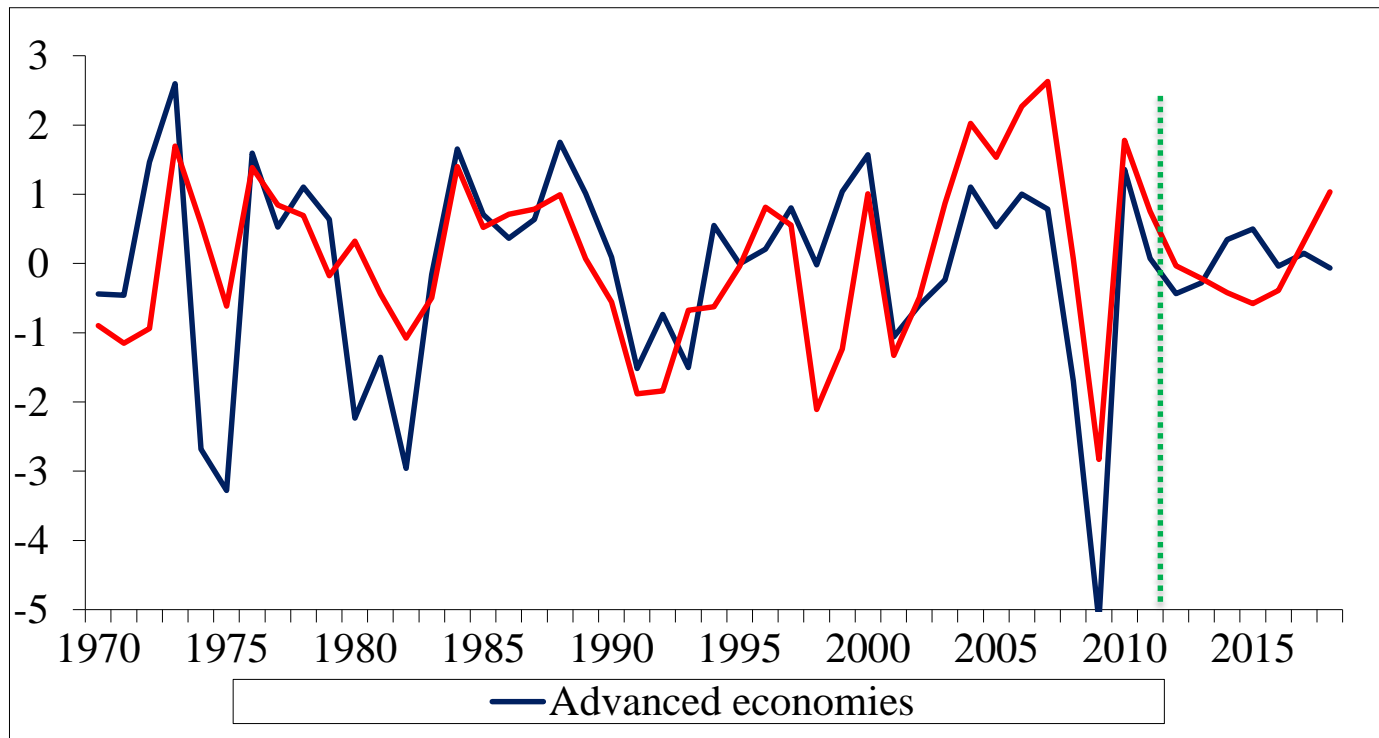


Source: Computed from IMF, WEO and WEO Update

No Decoupling in GDP Growth Cycles from 1970 to 2012, but what have changed since then is worth observing?

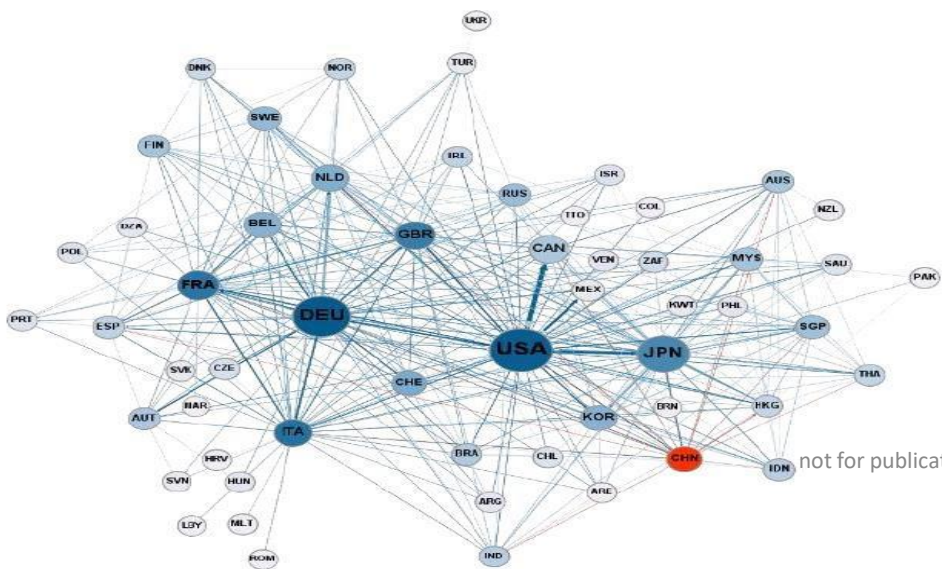
经济增长周期从1970到2012 是齐步变动，但自2012后趋势的改变有待观察

Deviations from Trends

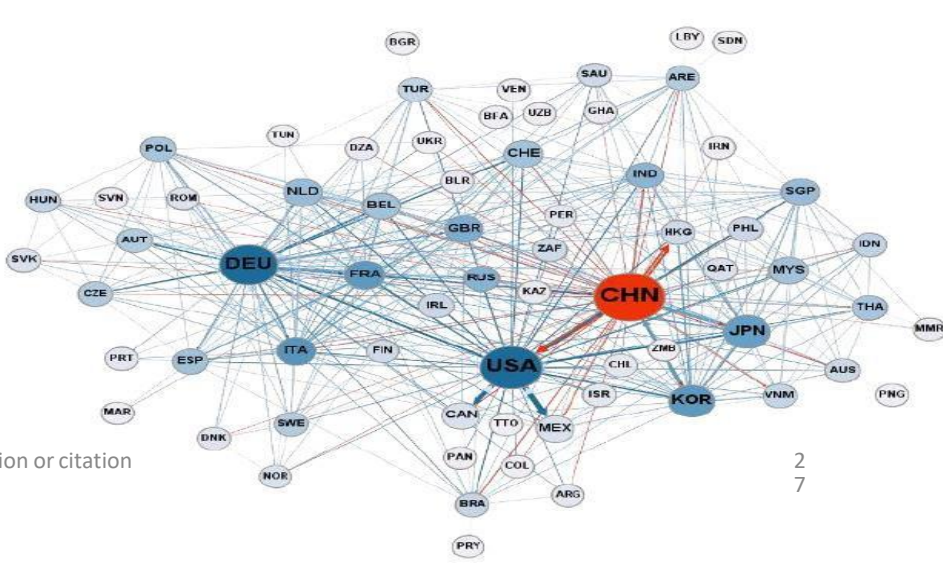


De-linking would be expensive given China's centrality in global production value chains but shifts in regional production value chains into ASEAN are already taking place. China should be more confident to steadily open up further her domestic markets for good and services especially in finance, insurance, banking, e-commerce and urban life-style. China, as major beneficiary and stake holder of the rule-based global investment and trading system should initiate, together with other like-minded players, the reform of the World Trade Organization for free and fair

1995



2016



not for publication or citation

2
7

4. Re-Calibrating the One-Belt One-Road (OBOR) Initiative: Improving transparency, enhancing governance to promote regional economic integration and convergence

**重新校准一带一路倡议：加强透明度和公
司治理以期达到区域经济的互联互通和整
合**

Motivations for One-Belt One-Road Initiative: Push and Pull Factors 一带一路倡议推和拉的因素

- There are both *push and pull factors* which rendered wide acceptance of B&R by developed, emerging and developing economies world had had led to the culmination of the *1st One-Belt One-Road Summit* which was hosted by President Xi Jinping in China in 2017 and the *2nd One-Belt and One Road Summit* in 2019.
- *Push factors* such as China's *excess capacity* can thus be absorbed and *surplus capitals* would be keenly welcome by developing economies which are facing development bottlenecks.
- Desire by developing economies to resolve these *three interrelated development bottlenecks, namely financing, infrastructure and production bottlenecks*, which denote *pull factors* that made the OBOR Initiative widely appealing.
- Premature projection of “*Great power my nation!*” instead of adopting the lower profile on “*Hide your strength, bide your time to render constructive achievements*” and *avoiding accusations of setting debt traps for developing countries* by making full use of Singapore as an Asia infrastructure hub for project evaluation, financing and environmental sustainability

The Belt and Road Initiative to promote regional economic integration and convergence in European Union: Geo-political fear of China unfounded

- As compared to 1.4\$ for EU-28, economies of Central, Eastern and Southeastern Europe (CESEE) have seen significant growth in GDP per capita averaging 3.8% since 2000 which have led to improvement in living standard largely through catching-up process transiting from the previous centrally planned system. However, economic convergence has since slowed down substantially after the 2008 global financial tsunami.
- The latest 2019 study by Asia Competitiveness Institute revealed that city dwellers in eight matured European cities including London, Paris, Brussels, Dublin, Amsterdam, Lisbon, Rome and Athens have been experiencing deteriorating purchasing power since 2005, and the main reason for such trend is due largely to declining real wages resulted from influx of cheaper CESEE workers. Frustrated indigenous city residents unable to maintain their standard of living as affordability on cost of living worsened often resort to violent street protests. It is paramount to restore respectable growth in CESEE so as to retain younger population through job creation-driven growth which can only be achieved through facilitating role of the government coupled with market-oriented development strategy to ensure equitable sharing of economic growth.
- Jeffery Sachs (2018) thus argued for increased investment spending to order to strengthen convergence. He proposed six areas include infrastructure expansion for sustainable development, bigger budget for European-wide research and development, increased collection of corporate and wealth taxation, pursue dynamic economic growth engines with Europe's close neighborhood encompassing Middle Eastern and Northern Africa, improved fiscal and financial management of the Euro area itself and more proactive in investment-led growth policy with China through the³Belt and Road Initiative without geo-political fear.

Belt and Road Initiative will help to quicken infrastructure connectivity, facilitate regional economic development and financial integration with Singapore serving as the Asia economic hub

PART 3 一带一路倡议能加强基础设施之互联互通，区域的经济发展和金融整合：新加坡是重要的经济枢纽



ASEAN with abundant labor supply, strong domestic demand but lacking in capitals and technology. For Singapore, Japan, Korea and Taiwan with aging population, excess saving, surplus capitals, current account surpluses but lacking high yielding investment opportunities.

Asia Infrastructure Investment Bank: Concentrate on debt financing so as to complement the reorganization of international financial institutions and will be an important platform to turn Asian saving for investment purposes. **Silk Road Fund:** Mainly for equity financing, stimulate private capitals and engaging participation of local governments and international capital.

Using RMB as an invoicing currency so as to lower cross-border transaction costs which will help stimulate development in bi-lateral trade, currency exchanges and rapid growth in cross-border RMB financial activities

Belt and Road Initiative: Step up mechanisms to facilitate think-tanks, education and cultural exchanges amongst indigenous groups to avoid local sensitivities and promote effective communication 一带一路倡议必须加强智库、教育和文化的交流，以避免地方的敏感性和促进有效沟通

Promoting exchanges amongst Asian and not ethnic Chinese in Asia alone!

Strengthening exchanges amongst think-tanks

Develop cooperation in education and academic exchanges

Develop tourism for countries surrounding B&R Initiative

- *Large scale export of blue collar workforce by Chinese enterprises* cause resentment from local residents facing high unemployment rate.
- *Weak governance of Chinese management* can be in conflict with local government and local residents
- *Lacking good understanding of local culture, social value and local practices* which led to conflict and misunderstanding
- Production value chains by Chinese enterprises *should try involve local partners by sourcing of down stream activities;*

“Venturing out and being directed in” for outbound Chinese enterprises 中国企业的“走出去和领进来”

• **WHEN?** 什么时候?

Given decades of successful track records, excellent technology yet cost effective infrastructure development experiences, and under the economic new normal with excess capacity and surplus capitals, such attributes and conditions are precisely needed by China’s Asian neighbors especially ASEAN member economies which are at different stages of development bottlenecks which include **financing, infrastructure** and **production bottlenecks**. Thus the timing of venturing out for Chinese enterprises is apt and inevitable.

• **WHERE?** 到哪里去?

According competitiveness studies by ACI at LKYSPP, in terms of investment destination, Indonesia, Vietnam and the Philippines are attractive for multinational corporation (MNCs) from Japan, Korean and Taiwan for establishing new production value chains.

• **WHAT?** 该做什么?

Development of and investment in infrastructure in seaports, airports, highway, speed train, mass rapid transit system, public housing, utilities and power generation remained the top priority for nearly all ASEAN members except Singapore and Brunei. With rising middle class in ASEAN, large domestic markets and greater urbanization are attractive destination for consumption-base products and services as well as private transportation related activities.

• **HOW?** 要怎么做?

Hiring and training-up an indigenous middle management team and capacity building for local blue collar workforce are a more sustainable mode of modus operandi. Relationship building with local government officials as good corporate citizens and engaging social community are vital for harmonious co-existence. Asia Infrastructure Investment Bank (AIIB), together with other multi-lateral development banks are important platform and avenue for public-private participation (PPP) for market-driven development projects.

• **With WHOM?** 和谁一起做?

Chinese state-owned enterprises would bring on board China Investment Trust Insurance to partner with reputable local companies which are of good track records can help to mitigate investment risks and lead to high *cost-energy-time efficiency* especially when confronted with local phenomenon, difficulties, disputes or even conflicts. Locating regional headquarters in Singapore as a base can provide for Chinese enterprises efficient financial and insurance services given sound law and order.

5. Pragmatic Corporate Strategies for State Owned Enterprises, can Singapore further Partner China to co-invest in a third economy globally and can Singapore avoid having to choose side amongst major powers?

务实的国有企业战略、相关的国家政策改革以及新加坡和中国到全球第三方共同投资

2025 Smart Technology Artificial Intelligence-Driven Made-in-China Initiative: Threat or opportunities? 科教兴国：中国智慧制造2025是威胁或是机会？

China's priority sectors are very similar to those of other countries (equivalent to Industry Revolution 4.0 perhaps?). Its tools may differ, and some say are incompatible with WTO. In any case, China should and must speed up the pace of the 2025 Smart Technology Artificial Intelligence-Driven Made-in-China Initiative proposed in 2015

The 10 key sectors



New information
technology



Numerical
control tools



Aerospace
equipment



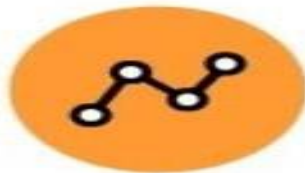
High-tech ships



Railway
equipment



Energy saving



New
materials



Medical
devices



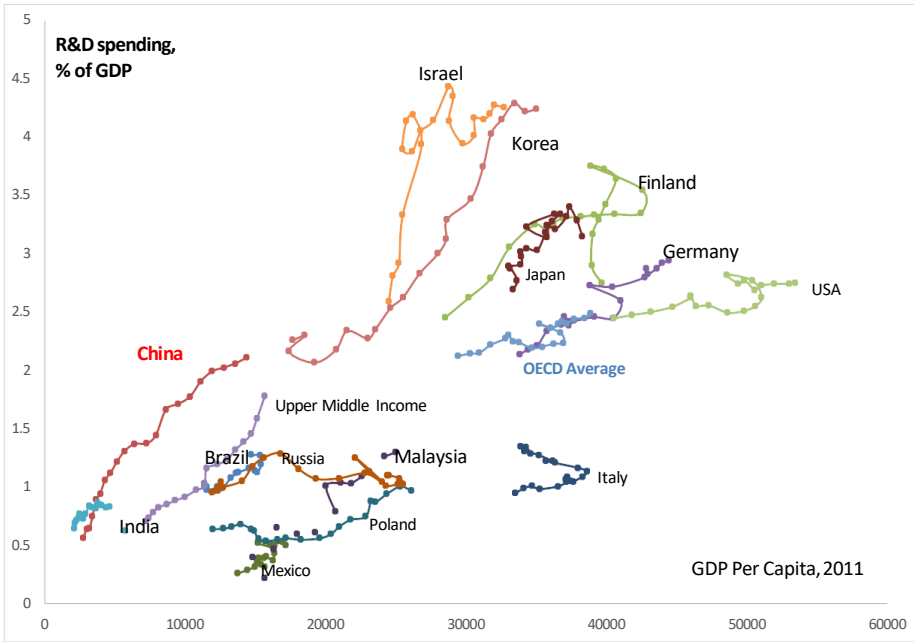
Agricultural
machinery



Power
equipment

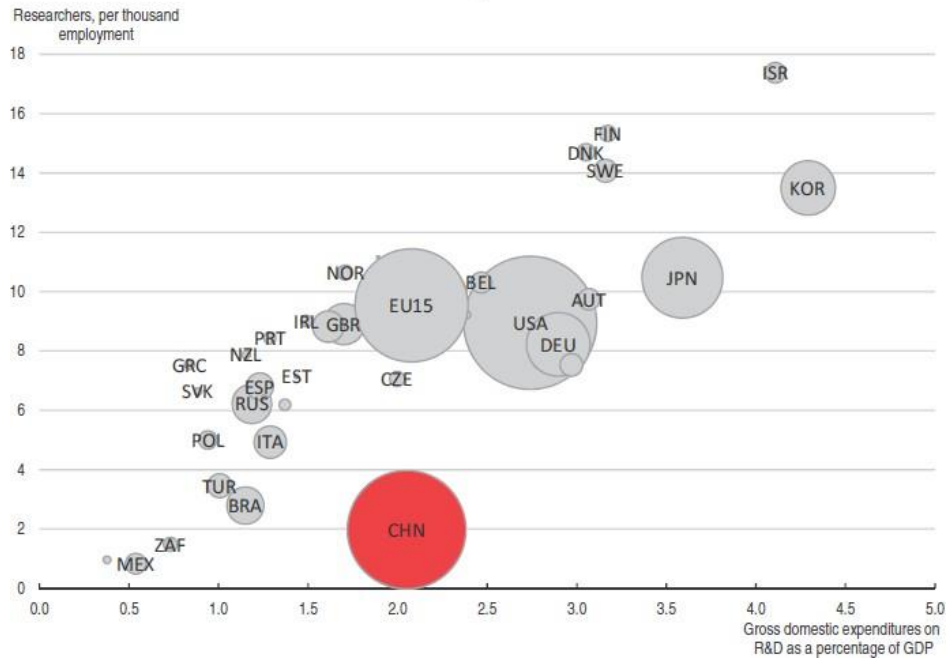
China is a Research & Development Powerhouse in the making: China should therefore continue to invest on sciences and technology excellence in order to sustain rapid industry upgrading, ensuring upward social mobility and building a more inclusive society by leveraging through education.

R&D Spending ahead of Peers



Source: World Development Indicators

Number of Researchers still a bottleneck

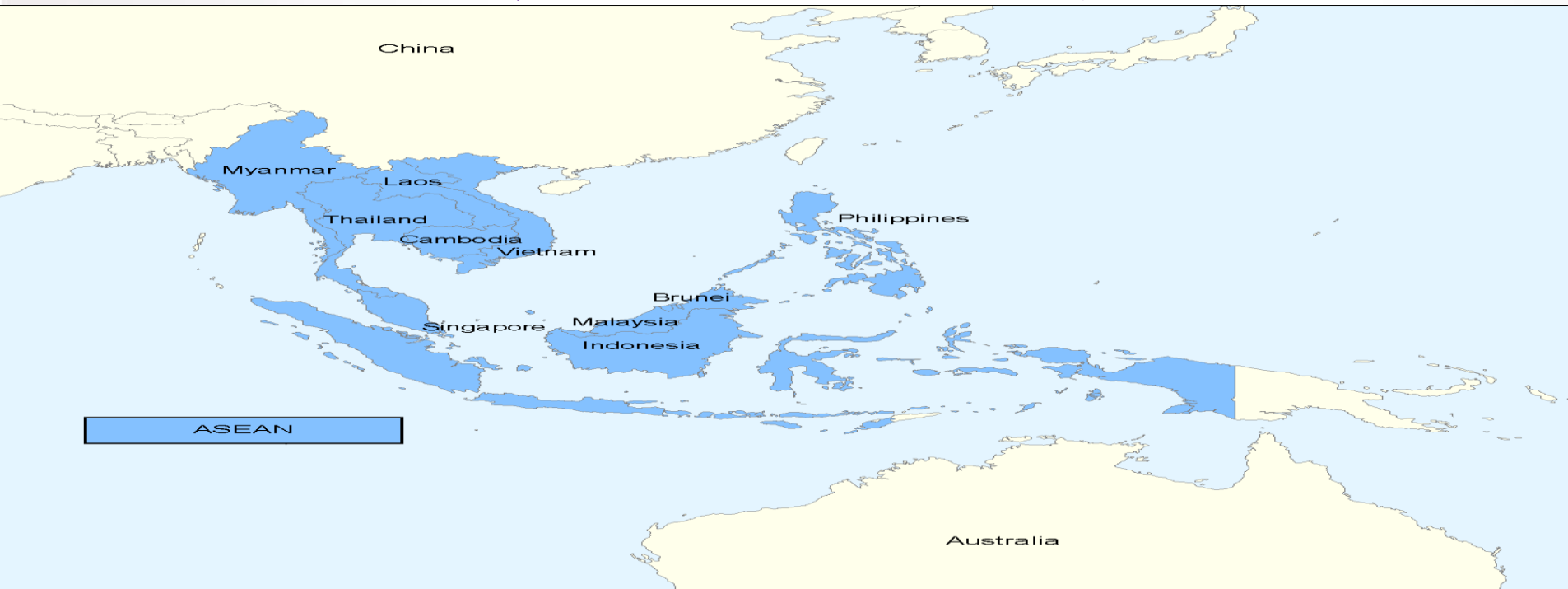


Source: OECD 2017: Economic Survey of China. Size of the Bubbles indicated total spending on R&D

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Can Singapore as a **Little Red Dot** potentially further partner China to co-invest in a third country globally?

新加坡“小红点”和中国到全球第三方共同投资的潜能？



The late Minister Mentor Lee Kuan Yew repeated reminded us that no one owes us a living, and the survival of Singapore hinges on how we collectively as one united people to constantly re-make Singapore to make ourselves relevant to the rest of the world by staying three steps ahead of our competitors!

Making Singapore the Infrastructure Development, Investment and Financing (IDIF) Hub

- **Finance**
- Platform for institutional investors – use Singapore’s excellent reputation as a safe and well governed capital markets to create instruments designed to provide a space for sovereign wealth funds and institutional investors to support portfolios of infrastructure projects
- Platform for special financing facilities, for example foreign exchange facilities, with MDBs, using expertise from Singaporean
- **Capacity building**
- Linkages with Universities around the region to create infrastructure finance streams, curricula, and programs
- Training facilities for Governments in the region to train staff on key processes and skills needed to manage project preparation, procurement and management – with CLC etc.
- **Sector engagement**
- Sharing specialist experience in different sectors where Singapore has a comparative advantage including housing, water, waste-to-energy, land value capture, transit oriented development, urban development projects
- Innovation hub for technology to improve infrastructure efficiency including water system leakage identification, use of drones for data collection
- Connectivity – through better coordination, planning and orientation of connectivity projects to maximize effectiveness

Making Singapore the Infrastructure Development, Investment and Financing (IDIF) Hub

- **Governance**
- Regulatory and institutional – helping regional governments to develop legal, regulatory and institutional frameworks to provide a level and conducive playing field for investors
- Dispute resolution – set up independent and neutral arbitration and mediation services to provide a safe space to resolve infrastructure disputes
- **Project preparation**
- Stakeholder consultation – to test project concepts and design using the position of Singapore as the headquarters for key advisers and investors
- Market consultation – once a project is well prepared, Singapore can provide a platform to share the project with key potential investors and lenders
- Singaporean consultants – facilitating use of sophisticated Singaporean consultants to prepare projects – Government of Singapore or GoS facility that funds project preparation for local Governments, which funding is reimbursed by the successful bidder for the project

Developing London-Singapore-Shanghai as an integrated global financial hub through greater policy and activities synergies

协力合作促进伦敦—新加坡—上海成为世界全球枢纽

- According to the International Monetary Fund based on data for 2017, for the emerging East Asia and the Pacific region, **Singapore (US\$72b)** is the *biggest destination for FDI*, followed by **China (US\$42b)** and **Indonesia (US\$12.5b)** while Japan (US\$264b) is the *top contributor of FDI, followed by Singapore (US\$217b) and USA (US\$134b)*.
- Under the BRI, currently 85% of the foreign direct investments (FDI) for belt and road countries went through Singapore and 33% of China's outbound FDIs came through Singapore (**i.e. 8533**), Singapore should therefore aim to achieve **8585 by 2025**.
- The US Treasury is beginning to indicate not allowing Chinese companies to raise capitals thorough listing in the New York Stock Exchanges and more than two dozen Chinese tech companies are now being put on the “prohibiting watch list” for fear endangering national security. *Following Brexit, London, Singapore and Shanghai should synergize further as an integrated global financial hub for closer-linkages in terms of stock markets, capital markets, wealth management, regional business headquarters, infrastructure hubs, internationalization of renminbi, currencies and gold trading.*

Singapore as a highly open Small economy, how could we avoid having to chose side between China and USA?

Singapore must periodically remind major powers the *four core interests of Singapore* which we would consistently defend them without being apologetic!

1. Singapore is obliged to support and synergize on regional economic development of Asian neighbors.
2. Singapore is committed to zero tolerance on corruption in the government and transparency of corporate governance
3. Singapore treats peaceful geo-political stability and freedom of navigation in the Asian region as paramount.
4. Singapore is a strong supporter of globalization with inclusive growth and would defend rule-based global investment and trading system.

How Singapore can and should be like by 2045 or SG80?

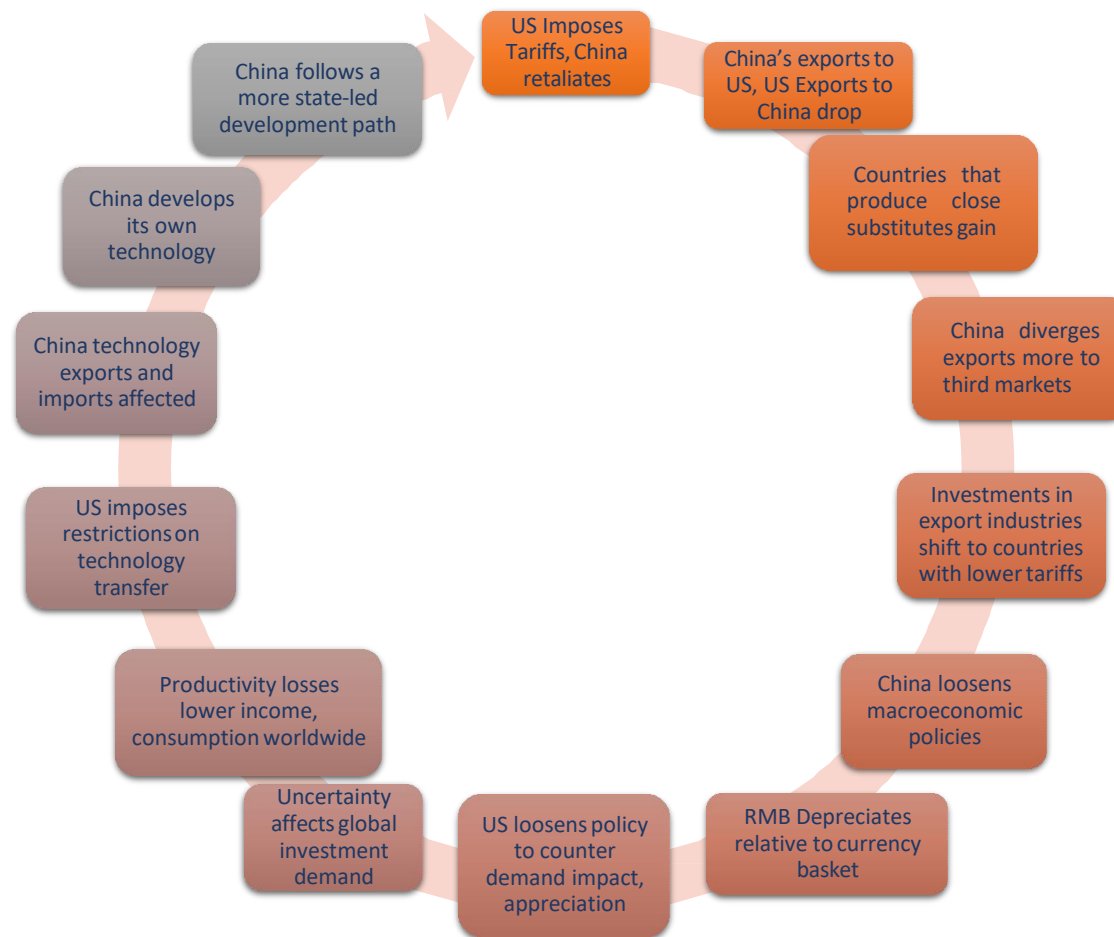
- Becoming a more cosmopolitan, vibrant and integrated global economic hub through her potentially rich human resource and diverse cultural background.
- Evolving to be an efficient and competitive global financial center as a biggest contributor and recipient of foreign direct investments.
- Being a leading global hub for the development, investment and financing of infrastructure through public private participation.
- Being more internationalized and risk-taking for Singapore's government-linked companies which would continue to strategize along the One-Belt One-Road Initiative
- A more confident and ambitious Singapore in terms of future economic and political outlook, currently still has a self-doubting, grumbling and pessimistic public.
- Be more engaging in global trade and services, supporting a critical mass high-skilled and quality population which should stabilize at 10 millions.
- A much more vibrant economy in comparison to ASEAN, currently still far too regulated, with rigid government bureaucracy and not enough private sector participation.
- A more tolerant government and open society for Singapore, currently still too conforming, the government is still harsh and lack tolerance for dissent.

6. Four Hostile Foreign Forces, Four Underlying Concerns and Five Strategic Insistence and Prerequisites for China:

Overall stability must prevail

**中国的四大忧虑与五大战略性之坚持和务必：
稳定压倒一切！**

“Pooled resources to enhance mega projects”: The Sino-US trade dispute can be a complicated vicious cycles, but China should and could avoid falling into the Thucydides Trap at all costs!
“集中力量办大事”：中美贸易纠纷的恶性循环，中国应避免陷入修昔底德陷阱！



On a positive note, retrospectively a decade or so later, Asian countries may reflect back and appreciate the US administration imposing tariffs, businesses and consumers for bearing them which in effect forced the Chinese economy to upgrade, pressure many Asian governments to speed up infrastructure development, reduce government bureaucracies, improve manpower skills and quicken land reforms!

Four hostile forces from USA and other western counterparts to contain China

- 1. Unilateral effort to initiate trade protection through imposition of tariffs and curtailing investments on goods and services from China**
- 2. Systematic attempts to resist global advancement of technology frontier by tech-driven companies from China**
- 3. Coordinated strategy to counter international military emergence and competition against the defense capability of China**
- 4. Ideological-driven determination to oppose or overthrow China's political system through color revolution which may lead to the Thucydides Trap .**

Four underlying concerns which may destabilize the rule by the Chinese Communist Party 可能扰乱中国共产党执政的四大隐忧

1. Conflicts between local residents and local governments

地方老百姓和地方官员的争端

Answer: You Knew it! 您懂得!

2. Color revolution through five independent or breakaway movements including Hong Kong, Macao, Taiwan, Tibet and Xinjiang 五毒（独）攻心的颜色革命

Answer: You know best! 您最懂!

3. Growing western religious influences under disguise which is incompatible to communism with Chinese characteristics

西方宗教影响的加剧对中国共产党制度的格格不入

Answer: You will get to know it slowly 您慢慢就懂

4. Non-cooperative elements driven by three vested-interest parties against the Chinese Communist Party 三股即得利益者对中国共产党执政的抗拒和不合作

Answer: You may not know it yet.....您可能还不懂。。。

Five Strategic Insistence and Prerequisites for Achieving the Great Chinese Renaissance Through Two Centenaries of Long March 确保两个一百年的伟大民族复兴：五大战略性之坚持和务必

ONE United China with complete sovereignty through credible defense and military deterrence in air, land and sea

一个中国领土的完整和海陆空国防军事的威慑力量

TWO Assurances

两个维护

THREE Representatives and the Pursue of Scientific Development

三个代表和科学发展观

FOUR Overalls; FOUR Self-Confidence; FOUR Awareness and FOUR Greatness

四个全面、四个自信、四个意识和四个伟大

FIVE Development Concepts: Innovation, Coordination, Reforms, Green and Sharing

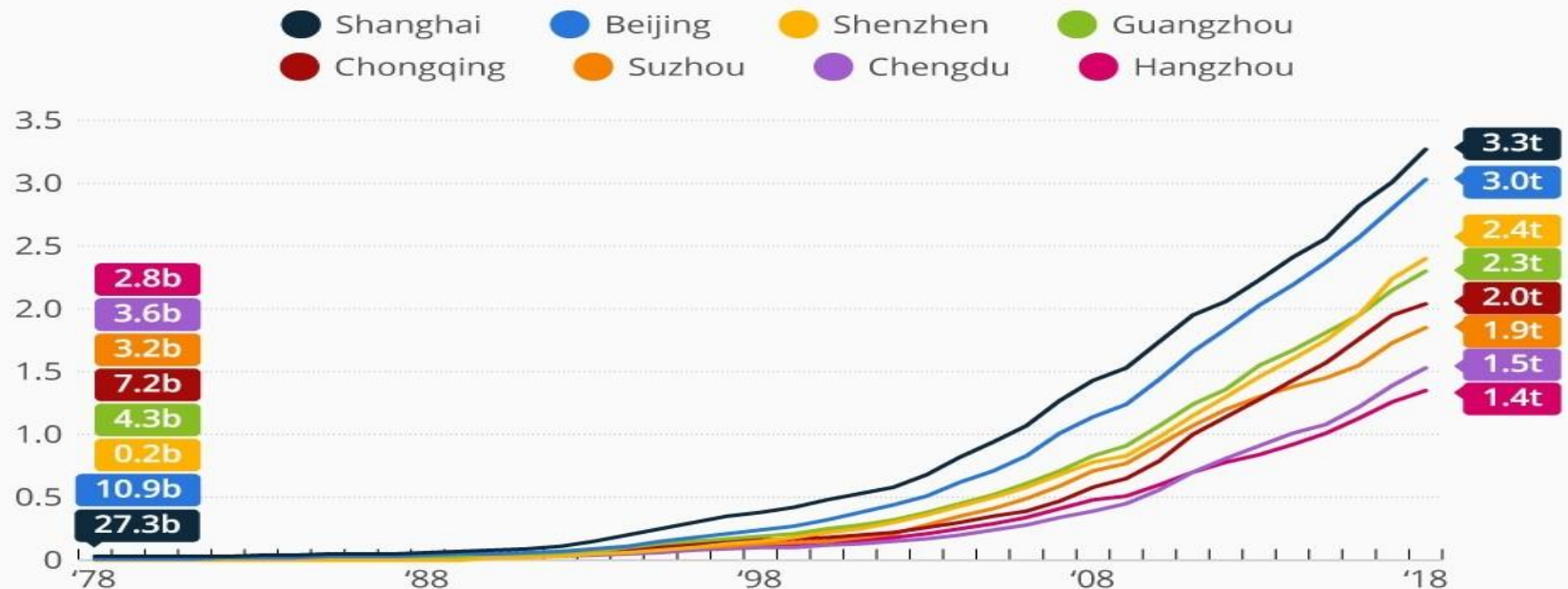
五大发展理念：创新、协调、改革、绿色和共享

7. China's Urbanization Drive and Technology Empowerment in the Era of Digital World

Rapid rural-urban migration, setting new standards in urbanization drive and consumerism will be China's next phase of development around the Great Bay Area (Pearl River Delta), Yangtze River Delta and Beijing-Tianjin-Hebei Belt
乡村城镇移民的加速，为城镇化设立新标准和推动消费主义将是中国下一波的经济
发展。大湾区（珠江三角洲）、长江三角洲和京、津、冀将是重点发展区域

The Exponential Growth of Chinese Cities

GDP of selected cities in China 1978-2018 (in yuan Renminbi)



Does not include Hong Kong, Macao or Taipei
Sources: Channel Wu (Wu Xiaobo), CEIC via Caixin, Open Environmental Journal (Researchgate)

Rural Migration and Trends of Urban Development in China 中国城市发展的宏观背景与形势

- The last few decades have witnessed not only China's impressive economic growth but also its rapid urbanisation process. According to the National Bureau of Statistics of China, the urban population ratio grew from only 10.6% in 1949 to 26.4% in 1990 and further to 56.1% in 2015.

在过去的几十年中，中国不仅取得了引人瞩目的经济增长，也经历了迅速的城市化进程。根据中国统计局数据，城市人口比例从1949年的10.6%，增长到1990年的26.4%，2015年达到56.1%。

- China's speed and scale of urbanisation is unprecedented in human history. Urbanisation in Europe took 150 years to go from 12% to 51%, while China essentially achieved the same level of urbanisation in less than 70 years, half of Europe's time.

中国城市化进程的速度与规模是史无前例的。欧洲历时150年使城市人口比例从12%增长到51%，而中国只用了欧洲一半的时间，不到70年，就达到了相同的城市化程度。

Rural Migration & Trends of Urban Development in China

中国城市发展的宏观背景与形势

- The urbanisation in China is largely driven by rural-to-urban migration. With no sign of abating, the trend of urbanisation via rural-to-urban migration is expected to persist. Based on the projection by the World Bank in 2013, China's urban population ratio will climb to nearly two thirds in 2030.

中国的城市化主要是由农村向城市的人口迁移推动，并且这一人口迁移的趋势仍将继续，根据世界银行在2013年的预测，中国的城市人口将在2030年达到总人口的三分之二。

- In recent years, problems caused by disorganised urbanisation continued to surface and has increasingly gained the attention of the general public: the depletion of natural resources, traffic congestions in almost all major cities, haze and smog in North China Plain, food safety issues national-wide, social issues related to migrant workers, amongst other issues.

近些年来，因无序的城市化导致的问题不断凸显，并得到民众的广泛关注，如自然资源枯竭，主要城市的交通拥挤问题，华北地区的雾霾，全国范围的食品安全问题以及农民工相关的社会问题等。

Rural Migration & Trends of Urban Development in China

中国城市发展的宏观背景与形势

- With growth and rising prosperity, Chinese citizens go beyond basic needs to Maslow's hierarchy of needs. Instead of blindly pursuing for economic well-being, they are pursuing overall quality of life. During the 13th Five-Year Plan, China aims to finish building a moderately prosperous society in all respects to fulfill Chinese citizens' increasingly diverse and personalized needs.

随着经济的增长与繁荣，中国国民已经超越了仅仅追求满足基本需求的阶段，转为追求马斯洛需求理论中更高层次的需求，对经济利益的盲目追求也转为对总体生活质量的追求。在「十三五」发展阶段，中国将努力实现全面「建成」小康社会的战略目标，人们的需求将日益丰富，多元化和个性化特征更加突出。

- At the government level, the policy-making is also in commensurate with the “Chinese Dream”. In one of his speeches delivered to party leaders in 2013, President Xi Jinping stressed that **gross domestic product (GDP) is no longer the only key performance indicator (KPI) to evaluate the performance China's leaders**. Indicators such as welfare improvement, social development and environment should all be taken into consideration.

在政府层面，政策决策也与「中国梦」相辅相成。习近平主席在2013年全国组织工作会议上对于改变干部考核方式谈到：「既看发展又看基础，既看显绩又看潜绩，把民生改善、社会进步、生态效益等指标和实绩作为重要考核内容，再也不能简单以国内生产总值增长率来论英雄了。」

Technology Empowerment and Smart Cities: New Indicators

1. NEW Smart Indicators: Environment for Economic Vibrancy and Competitiveness		
1.1	Economic Performance	
1.1.10	Quantity of Start-ups	To determine the quantity of entrepreneurship
1.1.11	Quality of Start-ups	To determine the quality and intensity of entrepreneurship
1.1.12	E-Commerce Revenues	To measure the intensity of online businesses
1.1.13	Information and Communication Technology Use for Business-to-Business Transactions	To measure the level of Internet use by firms to transact with other firms
1.1.14	Business to Consumer Internet Use	To measure the level of Internet use by firms to engage consumers
1.1.15	Credit Card Usage	To measure the prevalence of cashless payments
1.1.16	Cross-Border Electronic Sales (Domestic)	To measure the prevalence and use of online transactions
1.3	Infrastructure	
1.3.09	Technological Readiness	To measure the willingness and ability to adopt innovative technologies.
1.3.10	Cyber-security	To measure the level of security on the Internet
1.3.11	Average Internet Speed	To measure the quality of Internet connection
1.3.12	Proportion of Households with Computers	To measure the number of households with a computer
1.3.13	Proportion of Households with Internet Access	To measure the number of households that have access to the Internet
1.3.14	Secure Internet Connections	To measure the number of websites with secure Internet connections
1.3.15	Fixed Broadband Subscriptions	To measure the number of broadband subscriptions
1.3.16	Use of Internet Banking and E-Payments	To measure the prevalence and use of online banking and electronic payments
1.3.17	Use of Cloud Computing Services	To measure the use of cloud computing services

Technology Empowerment and Smart Cities: New Indicators

2. NEW Smart Indicators: For Environmental Friendliness and Sustainability		
2.1	Pollution	
2.1.12	PM 2.5 Annual Mean	To measure the air quality
2.3	Environmental Initiatives	
2.3.14	Renewable Energy Generation and Consumption	To measure the level of sustainable energy use in a city

4. NEW Smart Indicators: Environment for Socio-Cultural Conditions		
4.1.07	Health Regulations and Standards	To measure the level of regulation and standards in the healthcare sector of the city
4.2	Education	
4.2.06	Proportion of People with Information and Communication Technology Skills	To measure the prevalence and availability of workers with Information and Communication Technology skills
4.3	Housing, Sanitation & Transportation	
4.3.15	Mortality Caused by Road Traffic Injury	To measure the number of fatalities from traffic accidents

5. NEW Smart Indicators: Environment for Political Governance		
5.3	Transparency & Accountability	
5.3.05	Transparency and Availability of Data	To measure the accessibility of data in the city
5.3.06	Depth of Credit Information Index	Measures rules affecting the scope, accessibility, and quality of credit information available through public or private credit registries

Era of Digital economy Strategies to Build Strong Digital Capabilities

Digitalisation is creating new industries as well as transforming many existing ones, such as finance, advanced manufacturing and healthcare. Digitalisation also offers businesses, small and big, an effective means of reaching global markets. Building on the Smart Nation vision, we can tap on the economic opportunities offered by the digital economy. To do so, we must promote the adoption of digital technologies across all sectors of the economy. In addition, we must build strong capabilities in digital technologies, in particular data analytics and cybersecurity, which can be applied flexibly across sectors. Data will be an increasingly important source of comparative advantage and we need to improve our ability to use it productively in the economy.

Recommendation 1: Help small and medium enterprises (SMEs) adopt digital technologies

- **SMEs** form the bulk of our enterprises, and we should help them **adopt digital technologies**. We can do so by providing expertise as well as financing support. We can also accelerate the pace of adoption of digital technologies among SMEs through **national initiatives** like the National Trade Platform and a National Payments Council.

Recommendation 2: Build deep capabilities in data analytics and cybersecurity

- The Government should support the development of digital capabilities such as applied **data analytics** by establishing **joint laboratories** with industry players. Such partnerships can promote innovation and help train data scientists. The Government can also use National Service to develop deep, niche **skills in cybersecurity** among **Full-Time National Servicemen**, given the strategic importance of cybersecurity to the economy as well as national security.

Recommendation 3: Harness data as an asset

- The Government should establish a **dedicated program office** to support enterprises in making the most of **data as an asset**. The office can provide industry specific regulatory guidance and co-develop **flagship data science projects** that will have positive demonstrative effects on other enterprises.

Digital Technology Drives Changes in Businesses



**Asia-Pacific
Economic Cooperation**

**Weilu Niu
China Industrial Control Systems
Cyber Emergency Response Team**

01

Digital Technology Changes the Contents and Forms of Business

- Physical Goods → Digital Goods
- Traditional Service → Digital Service
- Traditional Trade → Platform-based trade
- Electronic and mechanical products → Intellectual products

02

China makes endeavor to create a healthy and good environment for digital economy development

The Guide Opinion on advancing “Internet plus”

The Guide Opinion on promoting the interaction between online and offline, accelerating innovative development, transformation and upgrade of trade

Electronic Commerce Law

03

Willing to strengthen cooperation with APEC economies and deepen exchanges

Actively support the establishment of a regulatory system for promoting the development of new business model

Strengthen the case sharing of enterprise innovation

Strengthen the exchange of experience in related personnel training



8. ASEAN Smart Cities Network (ASCN): High Quality of Life, Competitive Economy & Sustainable Environment

Rural Migration and Trends of Urban Development in ASEAN

- “Most of the ASEAN’s growth has been, and will continued to be, driven by urban centres, with 90 million more people expected to urbanize by 2030 and “middleweight” cities of between 200,000 and 2 million residents forecast to drive 40% of the region’s growth” – Ministry for Trade and Industry, Singapore
- China’s speed and scale of urbanisation is unprecedented in human history. Urbanisation in Europe took 150 years to go from 12% to 51%, while China essentially achieved the same level of urbanisation in less than 70 years, half of Europe's time. **Such phenomenon development would also have significant implications and opportunities to ASEAN in an interconnected world.**
- Given the rapid urbanization drive and emergence of smart cities, aspiration for improved quality of life had led to increased migration between cities at both the national and international levels. **It is imperative to investigate how liveability may affect people’s choice to migrate.**
- Along the urbanization, **new standards** for cities will be set as policy makers plan to promote “smart” development, ensure environmentally friendliness and an inclusive city society with technology empowerment to ordinary city dwellers.

URBAN SYSTEMS

DEVELOPMENT FOCUS AREAS:

(1) Civic and Social

- Social Cohesion
- Culture and heritage
- Tourism
- Public and Municipal Services
- Governance

(2) Health and Well-being

- Housing and Home
- Healthcare
- Education

(3) Safety and Security

- Resource security
- Cybersecurity
- Public Safety, City Surveillance and Crime Prevention

DEVELOPMENT FOCUS AREAS:

(4) Quality Environment

- Clean Environment
- Resource Access and Management
- Urban resilience

(5) Built Infrastructure

- Utilities
- Mobility and Transportation
- Building and Constructions

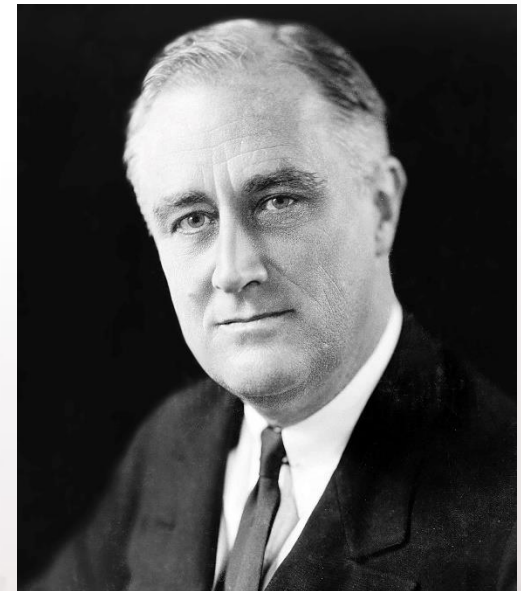
(6) Industry and Innovations

- Business and Entrepreneurship
- Trade and Commerce
- Upskilling
- Technology incubation
- Research and Development

9. Asia Competitiveness Institute (ACI) 2018 Global Liveable and Smart Cities (GLSC) Index

Conceptualising Liveability: ACI Global Liveable and Smart Cities Index (GLSCI) Framework

- ACI-GLSCI framework is inspired by 32nd U.S. President, Franklin Roosevelt. In the State of Union Address to the Congress, January 6th, 1941, Franklin mentioned there are four essential human freedoms:
 - The freedom from want
 - The freedom from fear
 - The freedom to worship
 - The freedom to speak



Franklin D. Roosevelt
32nd U.S. President

Conceptualising Liveability:

ACI Global Liveable and Smart Cities Index (GLSCI) Framework

- “The freedom from want” :
 - Captures the right to have a decent livelihood. More broadly, this dimension emphasises people’s desire for creature comforts (material abundance). The degree that this desire is satisfied is, in large part, determined by the income level and the growth rate of income: two issues that are central to the field of economics.
 - The terminology adopted in ACI-GLSCI framework to represent this dimension is “Economic Vibrancy and Competitiveness”.
- “The freedom from fear” :
 - Alludes to the natural right of people to live in safety through the maintenance of law and order, natural disaster relief, and the prevention of war by the state. The absence of such psychological pressure in a city increases its liveability in the same way that an improvement in the economic prospects of a city increases its liveability.
 - The terminology adopted in ACI-GLSCI framework to represent this dimension is “Domestic Security and Stability”.

Conceptualising Liveability: ACI Global Liveable and Smart Cities Index (GLSCI) Framework

- “The freedom to worship” :
 - For a city, this dimension emphasises (a) the social comfort of living (e.g. degree of income inequality, social harmony, and social mobility); (b) the physical ease of living (e.g. adequacy of mass transit, healthcare, and education); (c) the cultural richness of living (e.g. amount of social diversity, acceptance of different religious beliefs, and access to museums and cultural performances).
 - The terminology adopted in ACI-GLSCI framework to represent this dimension is “Socio-Cultural Conditions”.
- “The freedom to speak” :
 - This dimension covers the effectiveness of the government in providing public services (e.g. extent of corruption and quality of judiciary system); the responsiveness of the government (e.g. degree of transparency and accountability); and the openness to political participation (e.g. regular elections that are free and fair).
 - The terminology adopted in ACI-GLSCI framework to represent this dimension is “Political Governance”.

Conceptualising Liveability:

ACI Global Liveable and Smart Cities Index (GLSCI) Framework

- ACI further supplemented the framework by including another important dimension of city liveability, which is “**Environmental Friendliness and Sustainability**”. This dimension captures not only the desire of people for responsible stewardship of the environment for the welfare of future generations but also the aesthetic appreciation of nature by people.
- Our ACI-GLSCI framework conceptualises liveability under the following five dimensions:
 1. Economic Vibrancy and Competitiveness
 2. Environmental Friendliness and Sustainability
 3. Domestic Security and Stability
 4. Socio-Cultural Conditions
 5. Political Governance

Conceptualising Liveability:

ACI Global Liveable and Smart Cities Index (GLSCI) Framework

- Policymakers in many cities have tried to incorporate the concept of **Smart Cities** to approach the challenges of rapid urbanization.
- In this year's study, we have also added indicators to several of our sub-environments to track how **“smart”** a city is.
- While definitions of a “smart” city may differ, it essentially means using technology (especially information and communication technologies) to promote efficiency and augment the lifestyles of the urban population.
- Smart city initiatives can take on many dimensions, including:
 - Economic (business vibrancy, innovation)
 - Connectivity (roads, Internet, social support)
 - Social Welfare (education, health, housing)
 - Governance (e-governance)
 - Sustainability (renewable energy, proper waste treatment)

Conceptualising Liveability: ACI Global Liveable and Smart Cities (GLSC) Index

- Discussions on the topic of liveable and smart cities have been ongoing for decades. Despite the rich literature developed, experts still differ on what constitutes ideal liveable cities. However, notwithstanding the differences in emphasis, the **facilitative role of the government**, quality leadership and the execution capability remained paramount.
- Following the Liveable Cities Index published in 2012 and again in 2015, the latest study updated the GLSC Index to cover 78 major cities whereby “smart indicators” were also included which essentially means using technology (especially information and communication technologies) to promote efficiency and augment the lifestyles of the urban population.
- Human nature is complex, which makes the concept of liveability a necessarily complex one. The ACI-GLSCI framework conceptualises liveability from the perspective of **ordinary residents** living in that city and models this ordinary man as having **multi-dimensional sensibilities** towards issues like economic well-being, social mobility, personal security, political governance, environmental sustainability and aesthetics.

Conceptualising Liveability:

ACI Global Liveable and Smart Cities Index (GLSCI) Framework

- Liveability is defined by five environments under ACI-GLSCI framework. Each of the five environments also contains sub-environments as listed below:

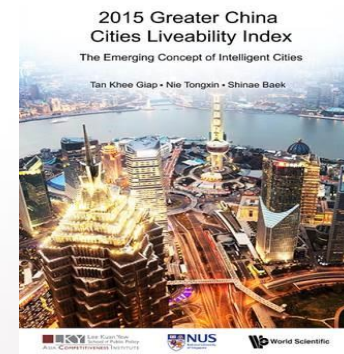
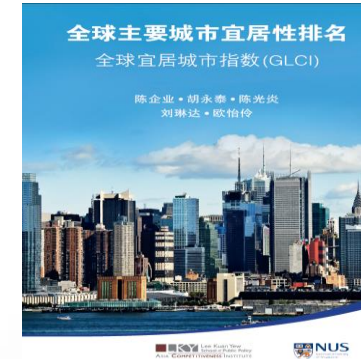
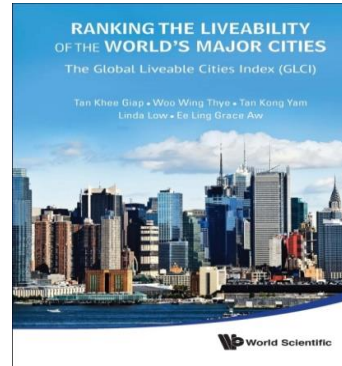
Inspired Themes of City Liveability	ACI-GLSCI Environments	ACI-GLSCI Sub-Environments
Satisfaction with “the freedom from want” →	<u>Economic Vibrancy and Competitiveness</u>	<ul style="list-style-type: none"> ➤ Economic Performance ➤ Economic Openness ➤ Infrastructure
Satisfaction with the status of natural environment and its management →	<u>Environmental Friendliness and Sustainability</u>	<ul style="list-style-type: none"> ➤ Pollution ➤ Depletion of Natural Resources ➤ Environmental Initiatives
Satisfaction with “the freedom from fear” →	<u>Domestic Security and Stability</u>	<ul style="list-style-type: none"> ➤ Crime Rate ➤ Threats to National Stability ➤ Civil Unrest
Satisfaction with socio-cultural conditions, ie. “the freedom to worship” →	<u>Socio-Cultural Conditions</u>	<ul style="list-style-type: none"> ➤ Medical & Healthcare ➤ Education ➤ Housing, Sanitation and Transportation ➤ Income Equality & Demographic Burden ➤ Diversity & Community Cohesion
Satisfaction with political governance, ie. “the freedom to speak” →	<u>Political Governance</u>	<ul style="list-style-type: none"> ➤ Policy Making & Implementation ➤ Government System ➤ Transparency & Accountability ➤ Corruption

ACI's Research Publications on Liveability and Composite Competitiveness of Cities

亚洲竞争力研究所关于宜居智慧城市综合竞争力的研究出版物

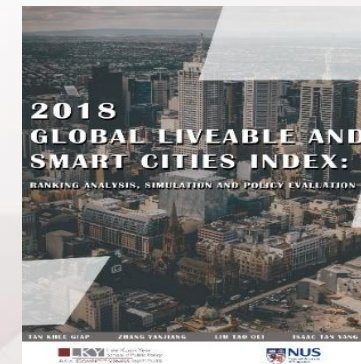
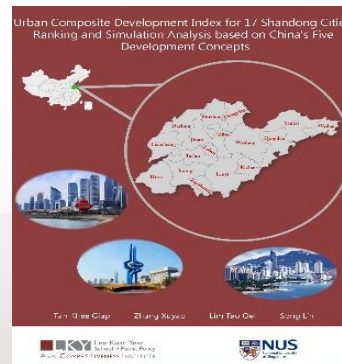
Books:

- Tan, K.G., Woo, W.T., Tan, K.Y., Low, L. and Aw, E.L.G. (2012), *Ranking the Liveability of the World's Major Cities: the Global Liveable Cities Index (GLCI)*, World Scientific, Singapore.
- Tan, K.G., Nie, T. and Baek, S. (2015), *Greater China Liveability Index: The Emerging Concept of Intelligent Cities*, World Scientific, Singapore
- Tan, K.G., Zhang, X., Lim, T.O. and Lin, S. (2018), *Urban Composite Development Index for 17 Shandong Cities: Ranking and Simulation Analysis based on China's Five Development Concepts*, World Scientific, Singapore
- Tan, K.G., Lim, T.O., Zhang, Y. and Tan, I. (2019), *2018 Global Liveable and Smart Cities Index: Ranking Analysis, Simulation and Policy Evaluation*, World Scientific, Singapore



Journal Papers:

- Tan, K.G., Woo, W.T. and Aw, G. (2014), "A New Approach to Measuring the Liveability of Cities: The Global Liveable Cities Index", *World Review of Science, Technology and Sustainable Development (UK)*, Vol. 11 No. 2, pp. 176–196.
- Tan, K.G., Woo, W.T. and Tan, B.S. (2014), "A New Instrument to Promote Knowledge-led Growth: The Global Liveable Cities Index", *International Journal of Business Competition and Growth (UK)*, Vol. 3 No. 3, pp. 174–187.
- Tan, K.G., Nie, T. and Kaur, S. (2016), "Empirical Assessment on the Liveability of Cities in the Greater China Region", *Competitiveness Review (SWITZERLAND)*, Vol. 26 Issue 1, pp. 2–24.
- Tan, K.G. and Baek, S. (2016), "Measuring Abu Dhabi's Liveability using the Global Liveable City Index (GLCI)", *World Journal of Science, Technology and Sustainable Development*, Vol. 13 Issue 3, pp. 205–223.



Editorial Opinions:

- 陈企业、王克剑、聂彤昕 (2015), 《城市宜居性无关城市大小》, *Lianhe Zaobao* on 27 November 2015
- 陈企业、聂彤昕、白信爱 (2015), 《北京成为宜居城市: 长路漫漫》, *Lianhe Zaobao* on 23 December 2015

2018 Ranking of GLSC Index for 78 world's Major Cities

- The overall liveability ranking places **Zurich** as the most liveable city, followed by Geneva and Luxembourg. Amsterdam, Berlin, Helsinki, Copenhagen, Singapore, Stockholm, Singapore, and London. **European cities dominate the top ranking**, as evidenced by the fact that 16 out of the top 20 cities are from Europe.
- In fact, **Singapore (8th)**, **Hong Kong (12th)**, **Tokyo (30th)**, **Osaka-Kobe (31st)**, **Yokohama (32nd)**, **Seoul (37th)**, **Taipei (38th)** and **Incheon (39th)** are the only Asian cities which managed to get into the top 40 ranking.
- The bottom-ranking cities are mainly from **Greater China, South Asia and Southeast Asia**, which reflects a critical gap between the liveability conditions of the Asian region relative to the West, highlighting the urgent need for policymakers to address the urbanization process.

Research Findings: 2018 Overall Rankings and Scores

City	Economy	Score 2018	Ranking 2018	Ranking 2015	Ranking 2012
Zurich	Switzerland	1.6490	1	2	2
Geneva	Switzerland	1.6307	2	1	1
Luxembourg	Luxembourg	1.4303	3	3	6
Amsterdam	Netherlands	1.3658	4	10	15
Berlin	Germany	1.3420	5	11	8
Helsinki	Finland	1.3386	6	4	4
Copenhagen	Denmark	1.3276	7	9	4
Singapore	Singapore	1.2821	8	7	3
Stockholm	Sweden	1.2807	9	5	7
London	United Kingdom	1.2455	10	15	22
Auckland	New Zealand	1.2152	11	8	10
Hong Kong	Hong Kong, China	1.1798	12	6	8
Birmingham	United Kingdom	1.0607	13	N.A.	N.A.
Manchester	United Kingdom	1.0397	14	N.A.	N.A.
Liverpool	United Kingdom	1.0364	15	N.A.	N.A.
Edinburgh	United Kingdom	1.0335	16	N.A.	N.A.

Source: ACI

Note: The 2018 rankings are from ACI's GLSCI rankings, while the 2015 and 2012 are from ACI's GLCI rankings.

Research Findings: 2018 Overall Rankings and Scores

City	Economy	Score 2018	Ranking 2018	Ranking 2015	Ranking 2012
Leeds	United Kingdom	1.0205	17	N.A.	N.A.
Bristol	United Kingdom	1.0203	18	N.A.	N.A.
Cambridge	United Kingdom	0.9900	19	N.A.	N.A.
Vancouver	Canada	0.9419	20	12	14
Sydney	Australia	0.9319	21	14	12
Melbourne	Australia	0.9197	22	13	10
New York	United States	0.8722	23	24	17
Los Angeles	United States	0.7581	24	25	19
Abu Dhabi	United Arab Emirates	0.7537	25	21	32
Chicago	United States	0.7277	26	27	24
Boston	United States	0.7002	27	23	22
Philadelphia	United States	0.6955	28	26	20
Washington, D.C.	United States	0.6877	29	22	25
Tokyo	Japan	0.6138	30	18	18
Osaka-Kobe	Japan	0.5760	31	20	16
Yokohama	Japan	0.5612	32	16	20

Source: ACI

Note: The 2018 rankings are from ACI's GLSCI rankings, while the 2015 and 2012 are from ACI's GLCI rankings.

Research Findings: 2018 Overall Rankings and Scores

City	Economy	Score 2018	Ranking 2018	Ranking 2015	Ranking 2012
Prague	Czech Republic	0.4677	33	30	28
Paris	France	0.4520	34	17	13
Madrid	Spain	0.4445	35	28	30
Barcelona	Spain	0.4349	36	29	26
Seoul	South Korea	0.2999	37	31	29
Taipei	Taiwan, China	0.2634	38	19	27
Incheon	South Korea	0.2583	39	32	31
Rome	Italy	0.1275	40	33	34
Kuala Lumpur	Malaysia	-0.1870	41	34	32
Jerusalem	Israel	-0.3695	42	35	36
Riyadh	Saudi Arabia	-0.4382	43	36	38
Shenzhen	China	-0.5992	44	38	41
Shanghai	China	-0.6251	45	47	39
Guangzhou	China	-0.6288	46	40	47
Tianjin	China	-0.6290	47	45	45
Beijing	China	-0.6354	48	43	46

Source: ACI

Note: The 2018 rankings are from ACI's GLSCI rankings, while the 2015 and 2012 are from ACI's GLCI rankings.

Research Findings: 2018 Overall Rankings and Scores

City	Economy	Score 2018	Ranking 2018	Ranking 2015	Ranking 2012
Nanjing	China	-0.6420	49	44	40
Chongqing	China	-0.6757	50	49	52
Istanbul	Turkey	-0.7046	51	39	59
Bangkok	Thailand	-0.8125	52	46	41
Amman	Jordan	-0.8216	53	50	35
Delhi	India	-0.8238	54	59	57
Amaravati	India	-0.8333	55	N.A.	N.A.
Buenos Aires	Argentina	-0.8345	56	41	58
Kakinada	India	-0.8482	57	N.A.	N.A.
Tirupati	India	-0.8654	58	N.A.	N.A.
Vishakhapatnam	India	-0.8750	59	N.A.	N.A.
Jakarta	Indonesia	-0.8773	60	52	64
Bangalore	India	-0.8821	61	60	55
Chennai	India	-0.8852	62	55	47
Pune	India	-0.9234	63	58	47
Ahmedabad	India	-0.9410	64	56	43

Source: ACI

Note: The 2018 rankings are from ACI's GLSCI rankings, while the 2015 and 2012 are from ACI's GLCI rankings.

Research Findings: 2018 Overall Rankings and Scores

City	Economy	Score 2018	Ranking 2018	Ranking 2015	Ranking 2012
Sao Paulo	Brazil	-0.9588	65	37	37
Mumbai	India	-0.9650	66	61	55
Mexico City	Mexico	-0.9950	67	51	50
Ho Chi Minh City	Vietnam	-1.0076	68	42	52
Hanoi	Vietnam	-1.0226	69	48	52
Nairobi	Kenya	-1.1803	70	N.A.	N.A.
Manila	Philippines	-1.2071	71	53	63
Phnom Penh	Cambodia	-1.3463	72	54	61
Dehradun	India	-1.3631	73	N.A.	N.A.
Moscow	Russia	-1.4602	74	57	62
Cairo	Egypt	-1.5714	75	62	43
Johannesburg	South Africa	-1.7230	76	N.A.	N.A.
Lagos	Nigeria	-1.8510	77	N.A.	N.A.
Karachi	Pakistan	-1.8674	78	63	60
Damascus	Syria	N.A.	N.A.	N.A.	51

Source: ACI

Note: The 2018 rankings are from ACI's GLSCI rankings, while the 2015 and 2012 are from ACI's GLCI rankings.

Thank you!