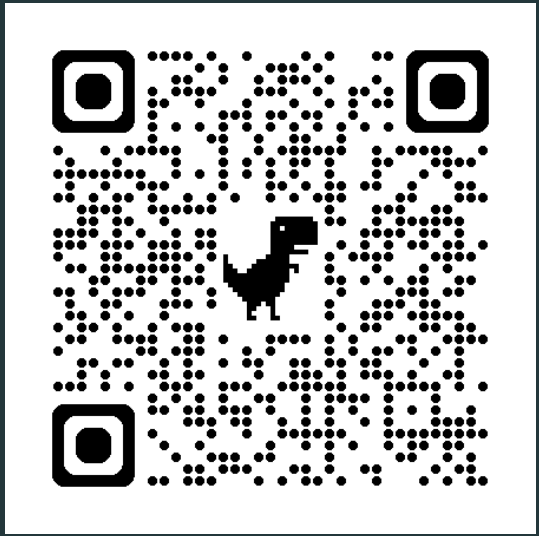
LKYSPP Faculty Spotlight

Danny Quah

Tue 17 Nov 2026

Lee Kuan Yew School of Public Policy, NUS

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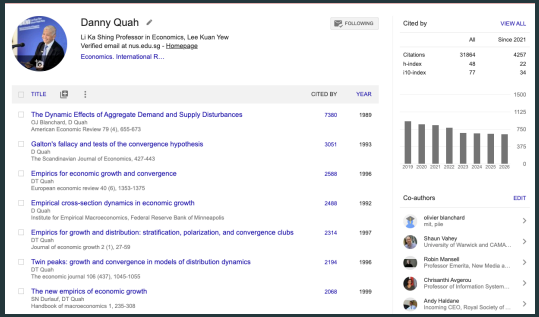
Research identity: Methodology and Substance

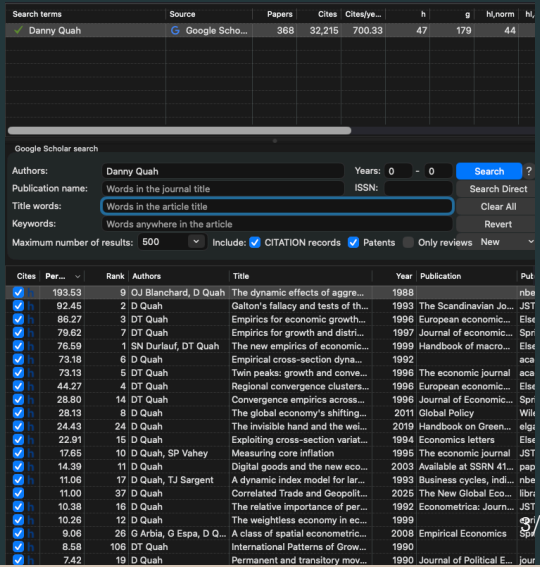
1. Macroeconometrics and timeseries
    - Laws of motion
    - Structure, not impact effect $Y = X\beta + \epsilon$. Causality and policy regimes
2. Disciplinary subfields
    - Business cycles
    - Growth, convergence, and income distributions
    - World order
3. What our empirical methods seek to uncover vs The Credibility Revolution

1. Empirical macroeconomist:
    - Large things shifting...
    - ...that you can see with the naked eye
    - The economy as a system; regime interventions
2. When credible estimates $E(Y|X) = X\beta$ fail the central question:
    - 2.1 What factors drive variation and in what proportion?
    - 2.2 The dependent variable is a distribution function
    - 2.3 Where do we land?

IMPACT

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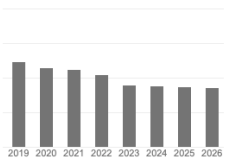
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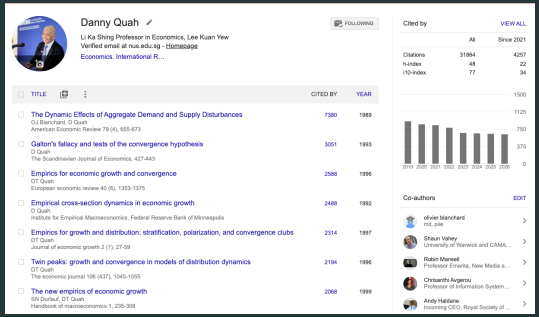
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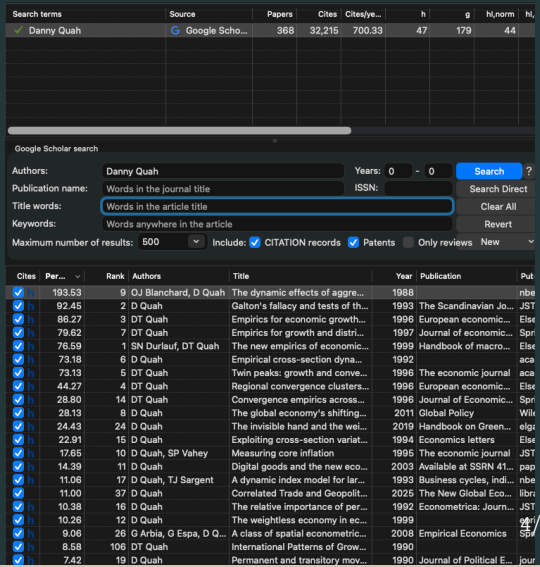


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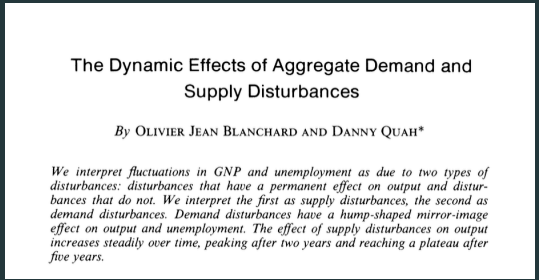

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CONTRIBUTIONS AND IMPACT: THINGS I CAN PUT IN A PICTURE

Decomposing the dependent variable

AER 1988, ECR 1991, JPE 1990, EJ 1995



The Dynamic Effects of Aggregate Demand and Supply Disturbances

By OLIVIER JEAN BLANCHARD AND DANNY QUAH*

We interpret fluctuations in GNP and unemployment as due to two types of disturbances: disturbances that have a permanent effect on output and disturbances that do not. We interpret the first as supply disturbances, the second as demand disturbances. Demand disturbances have a hump-shaped mirror-image effect on output and unemployment. The effect of supply disturbances on output increases steadily over time, peaking after two years and reaching a plateau after five years.

- When different disturbances—supply, demand; growth, cycle; technology, trade—move the variable of interest
- Most-cited
- Academic and practitioner (including PMs, central banks, multiple disciplines)

THEOREM: *Let X be a bivariate stochastic sequence generated by*

(i) $X_t = B(L)f_t$;

(ii) $f_t = (f_{dt}' \; f_{st}')'$, *with* $f_d p_d \times 1$, $f_s p_s \times 1$;

(iii) $Ef_t f_{t-k}' = I$ *if* $k = 0$, *and* 0 *otherwise*;

(iv) $B(z) = \begin{pmatrix} B_{11}(z)' & B_{12}(z)' \\ B_{21}(z)' & B_{22}(z)' \end{pmatrix}$;

(v) $B_{11}(z) = (1 - z)\beta_{11}(z)$;

(vi) β_{11}, B_{21}, B_{12}, B_{22} *are column vectors of analytic functions;* β_{11} *and* $B_{21} p_d \times 1$, B_{12} *and* $B_{22} p_s \times 1$;

(vii) BB^* *is full rank on* $|z| = 1$, *where* $*$ *denotes complex conjugation followed by transposition.*

Then there exists a bivariate moving average representation for X, $X_t = A(L)e_t$, *such that:*

(viii) $A(z) = \begin{pmatrix} a_{11}(z) & a_{12}(z) \\ a_{21}(z) & a_{22}(z) \end{pmatrix}$, *with* $a_{11}, a_{12}, a_{21}, a_{22}$ *scalar functions,* $\det A \neq 0$ *for all* $|z| \leq 1$;

(ix) $a_{11}(z) = (1 - z)\alpha_{11}(z)$, *with* α_{11} *analytic on* $|z| \leq 1$; *and*

(x) $e_t = \begin{pmatrix} e_{dt} \\ e_{st} \end{pmatrix}$, $Ee_t e_{t-k}' = I$ *if* $k = 0$, *and is* 0 *otherwise.*

In the bivariate representation, e_d *is orthogonal to* f_s, *and* e_s *is orthogonal to* f_d, *at all leads and lags if and only if there exists a pair of scalar functions* γ_1, γ_2 *such that:*

$$B_{21} = \gamma_1 \cdot \beta_{11},$$

$$B_{22} = \gamma_2 \cdot B_{12}.$$

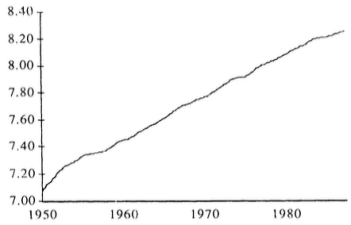


FIGURE 7. OUTPUT FLUCTUATIONS ABSENT DEMAND

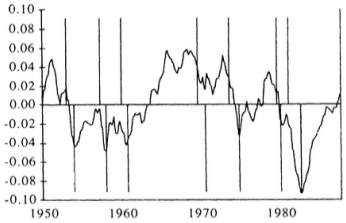


FIGURE 8. OUTPUT FLUCTUATIONS DUE TO DEMAND

The dependent variable is a distribution function

JEG 1996, 1997; EJ 1997; SJE 1993, EER 1993, 1996; AER 2001: Growth and convergence; income distribution; spatial clusters; polarisation; inequality and mobility

- Twin peaks
- Middle-income trap. The poor remain poor



Journal of Economic Growth, 2: 27–59 (1997)
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Empirics for Growth and Distribution: Stratification, Polarization, and Convergence Clubs

DANNY T. QUAH

London School of Economics

This paper studies cross-country patterns of economic growth from the viewpoint of income distribution dynamics. Such a perspective raises new empirical and theoretical issues in growth analysis: the profound empirical regularity is an "emerging twin peaks" in the cross-sectional distribution, not simple patterns of convergence or divergence. The theoretical problems raised concern interaction patterns among subgroups of economies, not only problems of a single economy's accumulating factor inputs and technology for growth.

Keywords: conditional, convergence, distribution dynamics, income distribution, inequality, trade, twin peaks

JEL classification: C13, C33, F43, O30

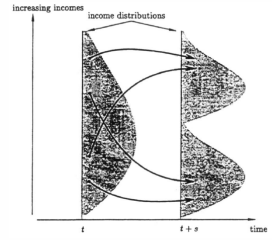


Figure 1. Emerging twin peaks.

vanishing of the middle income class. By contrast, these features were not present at the earlier time t: it therefore seems reasonable to call Figure 1 a picture of *emerging twin peaks*.

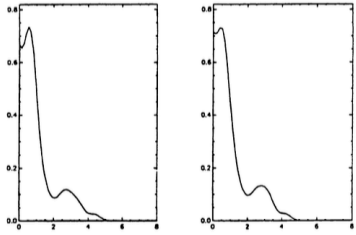


Figure 3.1. Densities of relative (per capita) incomes across 105 countries.

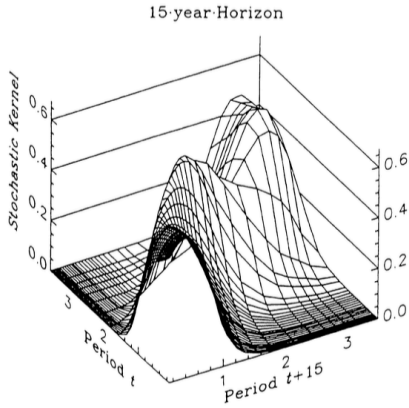


Figure 5.1. Relative income dynamics across 105 countries.

Why embed probability measures in a Banach space as we have done here? A first reason is so that distances can be defined between probability measures; it then makes sense to talk about two measures—and their associated distributions—getting closer to one another. A small step from there is to define open sets of probability measures, and thereby induce (Borel) σ-algebras on probability measures. Such σ-algebras then allow modeling random elements drawn from collections of probability measures, and thus from collections of distributions. The data of interest when modeling the dynamics of distributions are precisely random elements taking values that are probability measures.

This framework allows a more rigorous description of the stochastic kernels already used above. Let F_t denote the distribution of incomes across economies at a given time t. Associated with F_t is a measure λ_t in $(\mathbf{B}, \mathfrak{B})$. If $(\Omega, \mathfrak{F}, \Pr)$ is the underlying probability space, then λ_t is the value of an $\mathfrak{F}/\mathfrak{B}$-measureable map Λ_t: $(\Omega, \mathfrak{F}) \to (\mathbf{B}, \mathfrak{B})$. The sequence $\{\Lambda_t\colon\ t \geq 0\}$ is then a $\mathbf{B}$-valued stochastic process.

How should the law of motion for such a process be modeled?

The simplest scheme for doing so is analogous to the first-order autoregression from standard time-series analysis:

$$\lambda_t = T^*(\lambda_{t-1}, u_t) = T^*_{u_t}(\lambda_{t-1}), \quad t \geq 1,$$

where T^* is an operator that maps the product of measures together with generalized disturbances u to probability measures; and $T^*_{u_t}$ absorbs the disturbance into the definition of the operator. (Why the * appears in T^* and $T^*_{u_t}$ will be clarified below.) This is no more than a stochastic difference equation taking values that are entire measures; equivalently, it is an equation describing the evolution of the distribution of incomes across economies.

To understand the structure of operators like $T^*_{u_t}$, it helps to use the following:

Stochastic kernel definition: *Let μ and ν be elements of $\mathbf{B}$ that are probability measures on $(\mathbb{R}, \mathfrak{R})$. A **stochastic kernel** relating μ and ν is a mapping $M_{(\mu,\nu)}$: $(\mathbb{R}, \mathfrak{R}) \to [0, 1]$ satisfying:*

(i) *$\forall y$ in $\mathbb{R}$, the restriction $M_{(\mu,\nu)}(y, \cdot)$ is a probability measure;*

(ii) *$\forall A$ in $\mathfrak{R}$, the restriction $M_{(\mu,\nu)}(\cdot, A)$ is $\mathfrak{R}$-measurable;*

(iii) *$\forall A$ in $\mathfrak{R}$, we have $\mu(A) = \int M_{(\mu,\nu)}(y, A)d\nu(y)$.*

How does this relate to the structure of $T^*_{u_t}$? Let $\mathbf{b}(\mathbb{R}, \mathfrak{R})$ be the Banach space under sup norm of bounded measurable functions on $(\mathbb{R}, \mathfrak{R})$. Fix a stochastic kernel M and define the operator T mapping $\mathbf{b}(\mathbb{R}, \mathfrak{R})$ to itself by

$$\forall f \text{ in } \mathbf{b}(\mathbb{R}, \mathfrak{R}), \quad \forall y \text{ in } \mathbb{R}: \qquad (Tf)(y) = \int f(x)M(y, dx).$$

Since $M(y, \cdot)$ is a probability measure, the image Tf can be interpreted as a forwards conditional expectation. For example, if all economies in the cross section begin with incomes y, and we take f to be the identify map, then $(Tf)(y) = \int xM(y, dx)$ is next period's average income in the cross section, conditional on all economies having income y in the current period.

Clearly, T is a bounded linear operator. Denote the adjoint of T by T^*. By Riesz Representation Theorem, the dual space of $\mathbf{b}(\mathbb{R}, \mathfrak{R})$ is just $\mathbf{B}(\mathbb{R}, \mathfrak{R})$ (our original collection of bounded finitely additive set functions on $\mathfrak{R}$); thus T^* is a bounded linear operator mapping $\mathbf{B}(\mathbb{R}, \mathfrak{R})$ to itself. It turns out that T^* is also exactly the mapping in (iii) of the Stochastic Kernel Definition, i.e.,

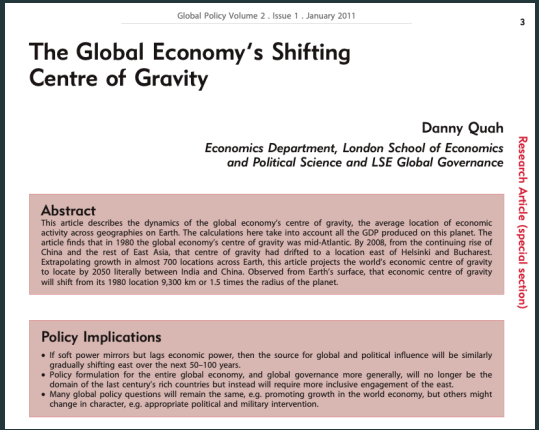
$$\forall \nu \text{ probability measures in } \mathbf{B}, \forall A \text{ in } \mathfrak{R}: \qquad (T^*\nu)(A) = \int M(y, A)d\nu(A).$$

(This is immediate from writing the left side as

$$\begin{aligned}
(T^*\nu)(A) &= \int \mathbf{1}_A d(T^*\nu)(y) = \int (T\mathbf{1}_A)(y)\, d\nu(y) && \text{(adjoint)} \\
&= \int \left[\int \mathbf{1}_A(x)M(y, dx)\right] d\nu(y) && \text{(definition of } T\text{)} \\
&= \int M(y, A)\, d\nu(y), && \text{(calculation)}
\end{aligned}$$

with $\mathbf{1}_A$ the indicator function for A.)

The Great Shift East: Too big for the human eye to see



Global Policy Volume 2 . Issue 1 . January 2011

3

The Global Economy's Shifting Centre of Gravity

Danny Quah

Economics Department, London School of Economics and Political Science and LSE Global Governance

Research Article (special section)

Abstract

This article describes the dynamics of the global economy's centre of gravity, the average location of economic activity across geographies on Earth. The calculations here take into account all the GDP produced on this planet. The article finds that in 1980 the global economy's centre of gravity was mid-Atlantic. By 2008, from the continuing rise of China and the rest of East Asia, that centre of gravity had drifted to a location east of Helsinki and Bucharest. Extrapolating growth in almost 700 locations across Earth, this article projects the world's economic centre of gravity to locate by 2050 literally between India and China. Observed from Earth's surface, that economic centre of gravity will shift from its 1980 location 9,300 km or 1.5 times the radius of the planet.

Policy Implications

- If soft power mirrors but lags economic power, then the source for global and political influence will be similarly gradually shifting east over the next 50–100 years.
- Policy formulation for the entire global economy, and global governance more generally, will no longer be the domain of the last century's rich countries but instead will require more inclusive engagement of the east.
- Many global policy questions will remain the same, e.g. promoting growth in the world economy, but others might change in character, e.g. appropriate political and military intervention.

- CNN, The Economist, …, 2026
- "Have you seen that map where…?"
- Geopolitical competition
- "Please lock this away"

The Global Economy's Shifting Centre of Gravity

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(non-urban) geography. Altogether, these 483 urban agglomerations and 210 rural proxies provided 693 identifiable locations on Earth.

Following Grether and Mathys (2009) I allocated national income across locations so that all urban agglomerations within a nation economy had equal per capita income. I assigned per capita income in the remainder of the nation economy to be 10 per cent lower than in the urban agglomerations. This last step diverges from Grether and Mathys (2009), who omitted all geographies outside urban agglomerations. Put another way, Grether and Mathys (2009) applied a rural discount of 100 per cent. I experimented with varying this rural discount between 0 per cent and 40 per cent with almost imperceptible change in the end results.

A more extensive study might attempt to model rural–urban income dynamics more carefully, and analyse changes in spatial locations as cities emerge or vanish. I do not pursue such extensions here.

To summarise, I took 693 locations to represent the spatial distribution of all the economic activity on Earth. Tracking incomes in these locations over time gives a representation of the spatial distribution dynamics of global economic activity. At any given point in time, calculating the three-dimensional weighted average across the 693 locations yields the WECG. Take the approximation that Earth $\oplus$ is exactly spherical with radius R and that a location for economic activity is a point on the three-dimensional Earth's surface. Written in Cartesian coordinates,

$$\zeta = (\zeta_x, \zeta_y, \zeta_z) \text{ with } |\zeta| = (\zeta_x^2 + \zeta_y^2 + \zeta_z^2)^{\frac{1}{2}} = R.$$

(In future, with ongoing scientific progress, locations for economic activity might be off the Earth's surface – whether above or below – so that the last equality

$$\zeta_x = R\cos\varphi\cos\lambda$$
$$\zeta_y = R\cos\varphi\sin\lambda$$
$$\zeta_z = R\sin\varphi.$$

The easiest way to understand this calculation is to project a point ζ on to the equatorial plane and then to decompose that projection along x and y coordinates in that plane.

The latitude and longitude of any $\zeta = (\zeta_x, \zeta_y, \zeta_z)$, not necessarily on the planet's surface, can be recovered as:

$$\varphi = \sin^{-1}(\zeta_z/|\zeta|) \text{ and } \lambda = \tan^{-1}(\zeta_y/\zeta_x) \quad (1)$$

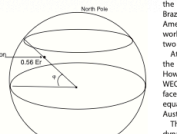
with its distance from the physical centre of the planet given by $|\zeta| = (\zeta_x^2 + \zeta_y^2 + \zeta_z^2)^{1/2}$.

Given the data used in this article, the resulting WECG turns out to be well beneath the surface of the planet. Tracking the dynamics of such subterranean locations is not straightforward.

On a two-dimensional map any point on the Earth's surface bears a unique configuration relative to the usual landmarks of coastlines, cities and mountains. That property fails, however, for points beneath the surface of the three-dimensional planet. To see this, suppose that some sequence of points inside the planetary sphere has an east-to-west trajectory when viewed from one perspective. But when viewed from the other side of the planet that same sequence will instead traverse west to east. Since any given perspective is arbitrary in three-dimensional space, without further justification for fixing a viewing position, no discussion of the centre of gravity moving east (or west) can draw a compelling conclusion.

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Figure 1. Calculating the cylindrical projection.



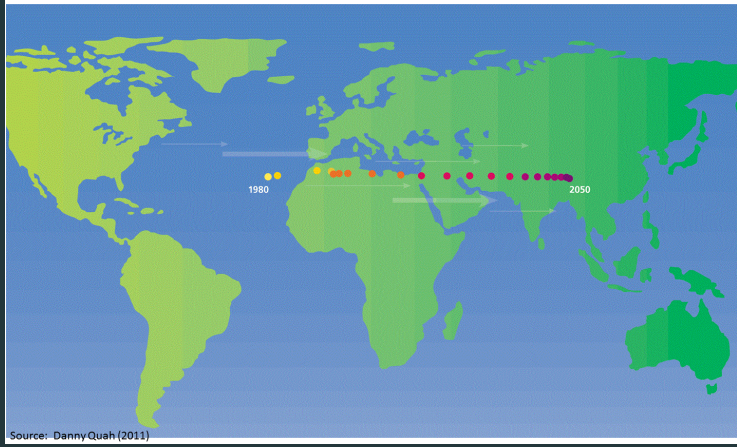
Note: When the WECG is 0.56 Earth's radius from the physical centre, its latitude φ makes it appear much further north than it actually is. The cylindrical projection realigns perspective appropriately and, by virtue of being a (distance-minimising) projection, locates the closest point on the planet's surface to the WECG.

radius) beneath the surface of the Atlantic Ocean. Along the east–west axis, this location is between Iceland and Brazil. Intuitively, the 1980 WECG sat between North America and Western Europe because most of the world's economic activity then occurred in just those two geographies.

At 66 degrees North relative to the equatorial plane, the WECG might seem to be as far north as Iceland. However, measured along the north–south axis, the WECG – because it is so deep beneath the planet's surface – turns out to be only 3,200 kilometres north of the equator, approximately the same distance north as Austin, Texas, Tel Aviv or Shanghai.

This account just given suggests a way to describe the dynamics of the WECG while preserving visual intuition, as described briefly at the end of the previous section. Project the WECG onto the Earth's surface by locating both the WECG and its surface projection on the straight line that minimises the distance between Earth's north–south axis and a cylinder tangent to the equator. Roughly speaking, the projection is that point on the

The world's economic centre of gravity: 1980-2050



Source: Danny Quah (2011)



How we could stop a meteor hitting Earth | Why American star power still rules the globe | Why sticks don't work with North Korea | Quiz archive : How many Catholics in the world? | Cuts a damning indictment of Washington



The global center of economic gravity has shifted east over the past 30 years (black dots), and could well shift even farther east over the next 30 years (red dots).

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April 7th, 2011
01:56 PM ET

World's center of economic gravity shifts east

Editor's Note: *Danny Quah is a professor of economics at the London School of Economics and author of the new paper,* ***The Global Economy's Shifting Center of Gravity****.*

By **Danny Quah** – Special to CNN

As late as 1980, North America and Western Europe produced more than two thirds of this planet's income. Not unexpectedly then, the world economic center of gravity 30 years ago was a point deep in the middle of the Atlantic Ocean, 900 miles west of Morocco.

By 2008, however, because of the continuing rise of India, China and the rest of East Asia, that center of gravity had shifted to a point just outside Izmir Turkey, east of Helsinki and Bucharest– a drift of 3000 miles, or about three quarters of the Earth's radius. My projection has it that this move east will continue until 2050 when the world economic center of gravity will cluster on the border between India and China, 400 miles east of Katmandu.

Let me explain what I mean by "global center of gravity."

Because Earth is curved, the straight line connecting New York City and London plunges deep beneath the Atlantic Ocean. The halfway point on this line is desolate and miserable: it is cold, wet, and hundreds of miles beneath the waves of the Atlantic. If you were to rise straight up to the surface from that depth,

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Yet Asia is still rising, and some striking numbers will reflect this. The combined wealth of Asian high-net-worth individuals (those holding at least $1m) will exceed those from North America in 2015, according to Capgemini and rbc Wealth Management. Danny Quah of the London School of Economics has calculated the world's economic centre of gravity and reckons that, thanks to Asia's rise, over the 70 years from 1980 to 2050 it will move eastwards from the mid-Atlantic all the way to somewhere between India and China. By 2015, the halfway point on this great journey, it will have reached the city of Bandar-e Mahshahr, in Iran, on the north-eastern tip of the Persian Gulf (chart 2).

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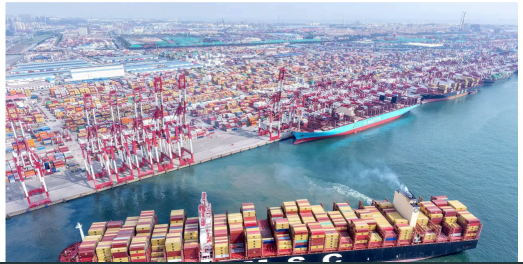
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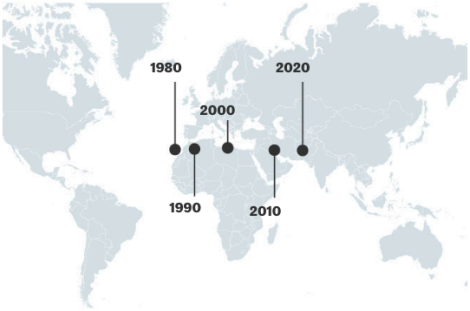
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UK needs to recognise reality and engage more with China, says Burnham adviser

Britain needs to 'get real' and focus trade and investment on Bric countries, says former Goldman Sachs economist Jim O'Neill



The shifting world economic centre of gravity



Sources: Fulcrum Asset Management, IMF World Economic Outlook, Haver Analytics. Methodology developed by Danny Quah

DIVERSION

Things that don’t show on a CV

(Also technology, digitalisation, intellectual assets)

ECONOMIC STATECRAFT, ECONOMIC DIPLOMACY



Multilateralism Can Survive the Loss of Consensus



Danny Quah

International cooperation can advance, even when the most powerful players are at odds

Can adversarial nations work together for the common good? It's natural to despair over prospects for international cooperation given the state of the world order. Geopolitical competition is straining the multilateral system, which has helped maintain global stability since the Cold War. The most powerful nations cannot seem to agree on how to solve urgent global problems, from the climate crisis to governing economic competition and international trade to regulating artificial intelligence.

Geopolitical competition doesn't naturally advance international cooperation. The economic historian Charles Kindleberger showed how a lack of global leadership and international cooperation prolonged the Great Depression. Yet at other times geopolitical competition has, paradoxically, raised international cooperation. During the Cold War, for example, Presidents Dwight Eisenhower and John Kennedy advanced US leadership in open markets, free trade, and other global public goods to counter communism.

Multilateralism is splintering today—not because of geopolitical competition alone—but because it's an expensive global public good. It benefits all humanity but distributes costs unevenly across nations.

Even in today's polarized world, geopolitical rivals can still agree on common goals—the planet should be hospitable to human beings, the next pandemic should be controlled and confined through sensible public health safeguards, global economic policy should yield prosperity for all. Nations might disagree on how to achieve these goals—arguing that one approach or another unfairly benefits a rival—or they might accuse others of free riding by failing to contribute toward solving a common problem.

Carbon, for example, has been accumulating in the atmosphere for centuries. How should we divide the burden of tackling climate change between past and present emitters? Or how should we share responsibility for providing financial stability and restoring global growth? An advanced economy might expend considerable resources to ensure growth and stability while others fail to behave prudently.

Middle powers

If great powers refuse to support the international system, can others take their place? Global public goods are costly to provide. Small poor economies don't have the resources to patrol the seas to keep shipping lanes safe for international commerce or to pump trillions into the world economy when markets fail. But middle powers—those with sufficient economic and financial firepower—may be candidates to take over the role of great powers. And middle powers that are not on the front lines of great rivalries and are committed to rules-based order are in fact playing an increasingly consequential role.

Without continuing US leadership, rules-based free trade agreements have already emerged. Consider the Comprehensive and Progressive Agreement for Trans-Pacific Partnership, the 12-member free trade pact that rolled

COURTESY DANNY QUAH

Illustration by Chantal Jahchan

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ECONOMICS

Third nations can piece together a ruptured world order



Published: 13 March 2026
Reading Time: 6 mins



Danny Quah
National University of Singapore

IN BRIEF

Third nations have long been expected to endure the consequences of major-power actions. But instead of treating such whims as inevitable, third nations can actively mitigate external shocks by forging coalitions with states that share common interests and are willing to commit to collective rules. Such pathfinder multilateralism, exemplified by coalitions like ASEAN and the CPTPP, may provide a roadmap for stability and growth in a G-minus world.

Back

Conclusion

1. Economic statecraft, economic diplomacy
   - Acquiesce. Adapt. Aggregate. Resist. 3A+
2. Analytical model
   - 3A+; Resilience; Economic Security
3. Empirics
   - Strategic differentiation
   - Dynamic complementarity
   - Great Power elasticity

Third Nations have choices. Their choices evolve.

Great Powers do not get the last word.

US industrial policy, Asian economic diplomacy

2022 Inflation Reduction Act

US subsidies, EV tax credits, North American final-assembly requirements, and critical-minerals sourcing conditions.

1. **South Korea aggregated:** Coordinated with Japan and the EU to contest discriminatory US industrial-policy provisions.
2. **South Korea resisted:** Parliamentary resolutions, ministerial and presidential representations, and KORUS and WTO legal arguments.
3. **South Korea sought accommodation:** Section 45W commercial-vehicle tax-credit treatment provided a route for leased Korean EVs. Indonesia separately petitioned for access to IRA-related critical-minerals benefits.
4. **Australia adapted:** Expanded domestic critical-minerals financing by A$2 billion in October 2023, doubling the facility to A$4 billion.

Acquiesce. Adapt. Aggregate. Resist.

3A+

Acquiesce Concede on a specific axis of Great-Power contention.

Adapt Restructure domestically to reduce vulnerability.

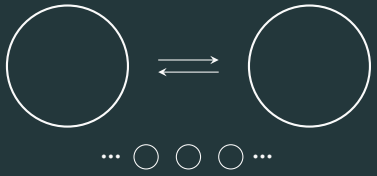
Aggregate Build external options through cooperation with other nations.

Resist Contest the Great Power's action, demand, or authority.

Economic diplomacy is not simply choosing a side.

ANALYTICAL MODEL

Thucydides and Third Nation agency



$$GP = \{0, 1\}$$

$$TN = \{..., -1, 0, 1, ...\}$$

Figure 1: Great Powers and Third Nations. "Great Powers do what they will. The rest of us suffer what we must." (Thucydides 400BCE, *The Peloponnesian War*)

1. Economic statecraft is what members of GP do, a "means of working the US's geopolitical will in the world" (Blackwill and Harris, 2016; CMS, BGH, MRS, CMO).
2. Economic diplomacy is what, without rules-based multilateralism, members of TN need to do
3. Inversion: Switched dependent variable, equilibrium concept, mechanism, normative perspective.

Model

$$\gamma W(K,Z) = \sup_{\pi} \left\{ p(\mu \times \pi) - c(\pi) + W_d \dot{K}_d + W_g \dot{K}_g + W_Z \dot{Z} \right\}$$
$$W_d = \frac{\partial W}{\partial K_d},\ W_g = \frac{\partial W}{\partial K_g},\ W_Z = \frac{\partial W}{\partial Z}. \tag{1}$$

$$\gamma S(K,Z) = \sup_{\sigma} \left\{ y(K, \alpha_q, \xi) - f(K, \alpha_q, \alpha_d, \alpha_g, \xi; \pi) + S_d \dot{K}_d + S_g \dot{K}_g + S_Z \dot{Z} \right\}$$
$$S_d = \frac{\partial S}{\partial K_d},\ S_g = \frac{\partial S}{\partial K_g},\ S_Z = \frac{\partial S}{\partial Z}. \tag{2}$$

Model: choices today, resilience tomorrow

Interior first-order conditions

$$
\begin{aligned}
\mu p' + (1-\mu) W_Z &= c' \\
y_q - f_q &= S_Z \pi \mu_q \\
-f_d + S_d &= 0 \\
-f_g + S_g &= 0 \\
y_\xi - f_\xi &= S_Z \pi \mu_\xi
\end{aligned}
$$

1. Acquiesce or resist today. Build resilience for tomorrow.
2. Acquiescence and Resistance: immediate effect on unresolved coercion.
3. Adaptation and Aggregation: accumulate domestic and external resilience.

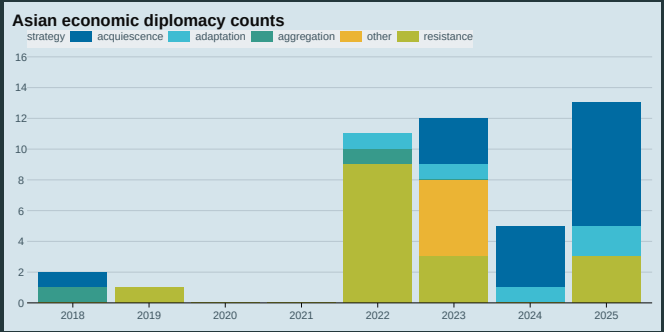
EMPIRICAL FINDINGS

Strategic differentiation

Strategic repertoire

Strategy	Events	Share (%)
Acquiescence	16	37.2
Adaptation	5	11.6
Aggregation	2	4.7
Resistance	16	37.2
OTHER	5	11.6

43 recorded responses. Strategies are non-exclusive.



1. 3A+ accounts for most of the observed responses; the mix changes over time.
2. US triggers not confined to Trump.
3. Predominance of acquiescence and resistance in equal measure.
4. Resist Biden/industrial policy. Acquiesce Trump/tariff policy.

Same US pressure. Different Asian diplomacy.

2025 Liberation Day tariffs

Singapore / Australia

Object. Do not retaliate.

Vietnam / Indonesia / Philippines

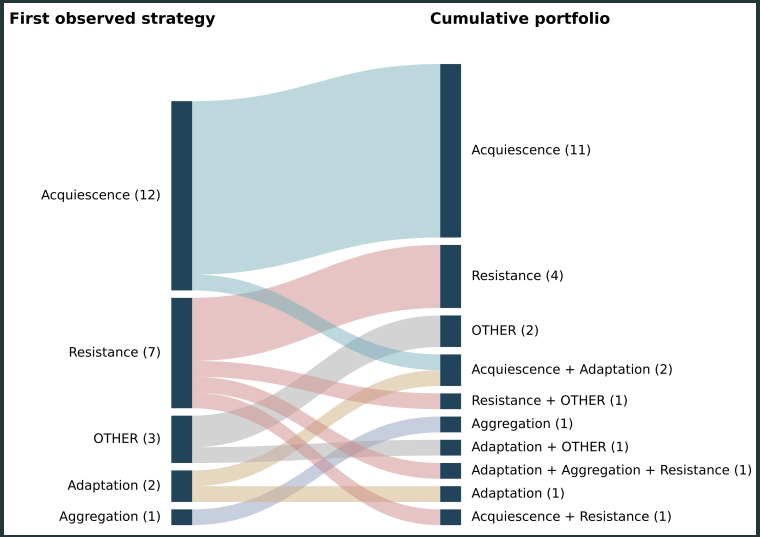
Acquiesce.

Japan

Adapt. Then accommodate.

Same GP trigger. Different TN strategic responses.

Dynamic complementarity



25 country–trigger episodes: initial choices ≠ final portfolios.

Great Power elasticity

Responses by primary US instrument

Instrument	Events	Acq.	Adp.	Agg.	Res.	Other
Industrial policy	19	0	2	1	12	5
Technology controls	8	6	2	0	0	0
Trade policy	16	10	1	1	4	0
Financial sanctions	0	0	0	0	0	0

- Industrial policy: mainly Resistance. Trade policy: mainly Acquiescence.
- Financial sanctions draw private institutional responses.

Vietnam and US tariffs, 2025

Apr 2025		2025 negotiations		Aug 2025
US	$\longrightarrow$	Vietnam	$\longrightarrow$	US
Liberation Day tariffs		Concessions; negotiations		Additional transshipment tariff measures

Concession $\neq$ end of coercion.

Conclusion

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LKYSPP Faculty Spotlight

Danny Quah

Tue 17 Nov 2026

Lee Kuan Yew School of Public Policy, NUS