WP No. 1/2026

# EGROW WORKING PAPER

## The Age of Discontinuity

### Why the Past is a Defective Prologue to the Future

Satish Chandra Mishra

May 2026

FOUNDATION FOR ECONOMIC GROWTH AND WELFARE

# The Age of Discontinuity

## Why the Past is a Defective Prologue to the Future

By

Satish Chandra Mishra[1]

May 2026

*Abstract*

The world is entering a period of deep transformation in which conventional models of growth, governance, and forecasting are no longer adequate. Rapid technological change, the rise of mega-cities, shifting political identities, artificial intelligence, biotechnology, longevity science, and space exploration are reshaping the foundations of human civilisation. In this environment, nations require bold imagination, coordinated policy action, and long-term institutional vision.

India's Viksit Bharat 2047 and Indonesia Emas 2045 stand out as ambitious national frameworks designed to meet this historic moment. Viksit Bharat 2047 reflects India's determination to become a developed, high-income, technologically advanced economy by the centenary of independence, driven by infrastructure, digital public infrastructure, manufacturing, semiconductors, space technology, artificial intelligence, and inclusive growth. Indonesia Emas 2045 similarly seeks to build a sovereign, prosperous, and advanced Indonesia through food and energy security, human capital development, industrial transformation, mineral downstreaming, and balanced regional development.

[1] Founder and Executive Director, Arthashastra Institute Indonesia

# I. How the World Has Changed?

There is a distinction in the philosophy of science between change that is continuous, more of the same, faster or slower, and change that is discontinuous, where a system transitions into a fundamentally different state and prior rules cease to apply. The world in the third decade of the twenty-first century has entered the second kind. It supports a more radical claim that the organising principles of human civilisation: who holds power, how wealth is created, how communities form and fracture, what counts as a human being, and indeed whether

*Homo sapiens* remains the dominant form of intelligence on earth or in the cosmos — are all simultaneously in flux, in ways that have no clean historical precedent.

Four mega-forces are driving this rupture, and they interact in ways that compound rather than cancel each other.

The first is the rise of corporate entities that have outgrown the nation-state as organising units of global power. Apple, Microsoft, Nvidia, Alphabet, Meta, and Amazon each command market capitalisations that exceed the GDP of most countries. The more consequential point is not their size but their jurisdictional character. These corporations operate across borders, set global standards, control critical infrastructure, and shape public discourse in ways that neither democratic governments nor international institutions can meaningfully constrain. They are proto-sovereign entities with their own norms, their own territorial logic (the cloud is their geography), and their own population (users, not citizens). The nation-state, the organising unit of modern political economy since Westphalia, is increasingly a container too small to hold the forces that actually govern modern life.

The second transformative force is the urbanisation of humanity at a speed and scale without parallel. By 2030, two-thirds of the world's population will live in cities — but the relevant phenomenon is the emergence of mega-cities that function as civilisational units in their own right. The Jakarta metropolitan area, Greater Cairo, the Pearl River Delta, the Delhi NCR: entities of thirty to forty million people concentrating both aspiration and dysfunction at densities that have no historical equivalent. These cities are too complex for standard municipal governance, too large for twentieth-century infrastructure models, and too internally diverse to sustain the social contracts that made earlier urban environments workable. They are the primary sites of both human possibility and systemic fragility in the century ahead.

The third is the simultaneous fragmentation and radicalisation of political identity. Across the world — in Europe, South Asia, the Americas, Southeast Asia — liberal democratic systems are under stress from two directions at once. From above, they are bypassed by corporate and technocratic power. From below, they are captured by ethnic, religious, and civilisational mobilisations that reject universalist frameworks in favour of exclusionary particularisms. Electoral majorities are assembled not around shared programmes for collective welfare but around shared hatreds fuelled by shared anxieties. The social glue that held plural societies together — procedural fairness, minority rights, faith in incremental improvement — is dissolving in real time. Rising ethnic tensions are not incidental to this process. They are its central mechanism.

The fourth, and most critical in the long run, is the emergence of a cluster of technologies — artificial intelligence, biotechnology, genetic engineering, and space colonisation — that together do not merely change what humans do but threaten to change what humans are. This demands extended treatment, for it is here that the discontinuity becomes truly civilisational in scope.

## II. Homo Deus, Longevity, and Colonies on Mars: Three Dimensions of Species-Level Rupture

Yuval Noah Harari, in *Homo Deus: A Brief History of Tomorrow*, poses the question that most economists and policymakers prefer not to confront: what happens when algorithms become better than humans at most cognitive tasks, and when biotechnology gives the wealthy the ability to enhance their own intelligence, extend their lifespans indefinitely, and engineer their emotional states? His answer is disturbing in its clarity. The liberal democratic order was built on the premise that every human being has equal intrinsic worth, derived from their unique inner experience and their capacity for rational agency. But if algorithms outperform most humans cognitively, and if biotechnology produces a supercharged elite that diverges biologically from the rest of humanity, the philosophical foundations of equality dissolve. The twenty-first century, Harari argues, may produce not merely new inequalities of wealth but new inequalities of *kind* — a biological stratification of the species itself.[1]

David Sinclair, the Harvard geneticist and author of *Lifespan: Why We Age — and Why We Don't Have To*, gives this civilisational rupture a concrete biological grounding. Sinclair's research on sirtuins, NAD+ metabolism, and epigenetic reprogramming suggests that ageing is not an immutable fate. It is instead an information-theoretic process that may be reversible. His laboratory has restored vision in aged mice and reprogrammed cells to younger epigenetic states. The implications for development economics alone are staggering: a world in which healthy productive life extends to 120 or 150 years is one in which pension systems, labour markets, educational cycles, political gerontocracies, and intergenerational wealth transfer all operate under entirely different logics than anything historical demography can tell us.[2] No actuarial model calibrated on twentieth-century mortality tables can be trusted to guide policy in such a world.

And then there is Elon Musk. His SpaceX programme has already reduced the cost of orbital launch by a remarkable order of magnitude and whose stated civilisational objective is permanent Martian settlement within this century. A self-sustaining human presence on Mars would represent the first time in the history of life on earth that an intelligent species has become multi-planetary. The implications are not primarily technological. They are philosophical, legal, and ultimately political. Who governs a Martian settlement? Which legal order applies beyond terrestrial jurisdiction? What does citizenship mean when it is no longer tied to a terrestrial state? These are not science fiction questions. They are the next generation's constitutional questions, and no historical precedent exists to answer them.[3]

Taken together, Harari's algorithmic stratification, Sinclair's longevity revolution, and Musk's interplanetary ambition define a horizon in which the species itself is in transition. The past is not merely a poor guide to the future under these conditions. It is actively misleading, because the entities that will inhabit that future — cognitively enhanced, potentially centuries-long-lived, distributed across two

planets — are not the same entities whose behaviour generated the historical data on which our forecasting models are trained.

## III. The Forecaster's Fallacy: Lessons from Quantum Science

In *The Problems of Philosophy*, Bertrand Russell introduces a chicken that has been fed by the farmer every morning of its life. Each day adds another data point. The correlation is perfect, the sample grows, the chicken's confidence in its model increases — right up to the morning the farmer arrives to wring its neck rather than scatter grain. Russell's sardonic conclusion is that a more sophisticated reasoner would have asked not merely *what has always happened* but *why* — and whether the conditions generating the regularity were stable or contingent. The chicken had no framework for structural change. It had only the accumulation of observations, which served it well until the moment it did not.

The mainstream economic forecaster is, in this respect, Russell's chicken with a spreadsheet. The standard methodology is regression analysis: identify historical relationships between variables, estimate coefficients from past data, and project forward. Rigorous and often valuable when the underlying system is stable, it is precisely the wrong tool when the system is undergoing structural transformation. The philosophical error is Humean: regression assumes the future will resemble the past because it always has. But when the parameters themselves are changing — when new technologies alter production functions, new corporate structures disrupt market dynamics, new political formations corrode institutional constraints, and new biotechnologies redefine the labour force — regression on historical data does not merely produce imprecise estimates. It produces systematically misleading ones: confident projections of a future that no longer obeys the past's rules.

The empirical failures are instructive. Standard macroeconomic models did not anticipate the 2008 financial crisis — not for want of data, but because the models encoded assumptions of systemic stability that the system had already abandoned. Climate models built on historical emissions trajectories underestimated the acceleration of feedback loops. Demographic projections repeatedly missed the collapse of birth rates across East Asia and Southern Europe. In each case the mathematics was sound. The metaphysics was wrong: continuity assumed where discontinuity obtained.[4]

What is needed instead is a mode of thinking borrowed from quantum mechanics: not the estimation of a single most-likely trajectory, but the mapping of a probability distribution across multiple qualitatively different states. A quantum system exists in superposition until observation collapses it into one state. The analogy for policy under deep uncertainty is to hold multiple distinct futures simultaneously — not as scenarios around a central estimate, but as genuinely alternative states with different internal logics — and to make investments robust across that distribution rather than optimised for any single projection. This requires imagination alongside calculation: the historian, the political scientist, and the technologist standing beside the econometrician.[5] In the age of discontinuity, the variance matters as much as the mean.

## IV. The Return of the Big Push

If linear extrapolation is an inadequate guide at civilisational inflection points, what does this imply for development strategy? It implies, among other things, a rehabilitation of the Big Push — the theory, associated with Paul Rosenstein-Rodan and later formalised by Kevin Murphy, Andrei Shleifer, and Robert Vishny, that large coordinated investments across multiple sectors simultaneously can move an economy from a low-level equilibrium to a qualitatively higher one in ways that no sequence of incremental, market-guided investments can achieve.[6]

The original theory was motivated by circular complementarities: a factory is viable only if infrastructure supplies its inputs and distributes its outputs; infrastructure is justifiable only if economic activity uses it. No individual investor can profitably break the circle alone. Coordinated state commitment can solve this coordination failure by ensuring complementary investments happen simultaneously.

The case is even stronger in conditions of historical discontinuity. When the target is a qualitatively different kind of economy — not a faster version of the present but a structurally transformed one — incremental market adjustment is insufficient not merely because of coordination failures but because the destination itself is discontinuous. You cannot iteratively upgrade a horse-drawn transport network into a railway system. You cannot gradually evolve an analogue educational system into a digital one while the knowledge economy it must serve is already two generations ahead. The state must act as coordinator of last resort: not because markets are generally inferior, but because at civilisational inflection points their time horizons are too short and their capacity for self regulation too limited.

## V. Viksit Bharat: The Ambition of the Five Trillion

India's Viksit Bharat, Developed India, framework is precisely this kind of attempt. The ambition is not to maintain India's current growth trajectory and see where it leads. It is to define a qualitatively different destination, a fully developed, high-income, technologically sophisticated economy by 2047, the centenary of independence and to organise state capacity and decision-making systems around achieving it.

The operational architecture includes infrastructure investment at unprecedented scale (the National Infrastructure Pipeline targeting over $1.4 trillion), a Production-Linked Incentive programme activating manufacturing across twelve critical sectors simultaneously, Digital Public Infrastructure as the platform for financial inclusion and service delivery, and an ambition to establish India as a global centre for semiconductor design, space technology, and artificial intelligence.[7] None of these are market-driven in the conventional sense. They are coordinated state bets, investments rational only if the complementary bets are also placed, and which the state is expected to place simultaneously, precisely to ensure they are.

Crucially, Viksit Bharat represents an implicit rejection of developmental precedent. It does not seek to replicate the East Asian export-manufacturing model, though it incorporates elements of it. It does not seek to replicate the Western service-sector transition, though it incorporates that too. It attempts to

synthesise a path appropriate to a country that is simultaneously a vast agrarian economy, a global services powerhouse, a nascent manufacturing hub, and a civilisational entity with deep institutional traditions of its own. That synthesis cannot be read off any historical regression. It must be imagined, popularised and then built.

## VI. Indonesia Emas 2045: Sovereignty Across All Dimensions

Indonesia under President Prabowo Subianto presents a parallel case with its own civilisational logic. The Asta Cita, Eight Aspirations, framework articulates not sector-specific targets but a vision of comprehensive national sovereignty: food sovereignty, energy sovereignty, industrial sovereignty, and cognitive sovereignty — the determination that Indonesia will be an active architect of, not a passive recipient of, the technologies that will define the century.

The operationalisation includes the Makan Bergizi Gratis programme as a foundational human capital investment, recognising that no high-productivity economy can be built on a malnourished workforce. It includes ambitious downstream processing of Indonesia's extraordinary natural resource endowments, nickel, bauxite, copper, enabling the archipelago to capture the structural demand of the green energy transition rather than remain a commodity exporter. It includes the Nusantara capital relocation, which simultaneously addresses Java's unsustainable overcrowding and signals a civilisational commitment to the eastern archipelago distinct from Java.[8]

Indonesia Emas 2045 is not a projection of current trends. It is an act of political imagination backed by coordinated resource mobilisation; a statement that the Indonesia of 2045 will be a fundamentally different entity than the Indonesia of today, and that the choices made now will determine which of the multiple possible Indonesias actually comes into being.

## VII. Ancient Roots, Modern Mechanics: The Case for a Duo-Polar Asia

The convergence of Viksit Bharat and Indonesia Emas 2045 invites a larger geopolitical reading, one grounded not only in present-day economic logic but in a civilisational relationship far older than either republic.

The Asian Century has too often been narrated as a story with a single protagonist: China. But the Asian Century in its fullest expression is not a unipolar phenomenon. Its coherence and balance depend on the simultaneous maturation of multiple major civilisational powers. None more strategic than the two largest democracies in Asia, separated by the waters of the Bay of Bengal and bound together by more than two millennia of shared history.

The maritime civilisation of Srivijaya, the great Sumatran thalassocracy that dominated the straits between the seventh and thirteenth centuries, was built on exactly this axis. Indian merchants, monks, and scholars sailed the monsoon routes across the Bay of Bengal, bringing Sanskrit, Buddhism, and Hindu cosmology to the archipelago. The Sailendra dynasty of Central Java erected Borobudur, still the world's largest Buddhist monument, as a direct expression of that trans-oceanic cultural fertilisation.

The port cities of Srivijaya and Majapahit were nodes in a civilisational network that linked the Coromandel Coast to the Java Sea, exchanging not merely spices and silk but cosmological frameworks, legal traditions, and artistic vocabularies. When Modi and Prabowo invoke the language of civilisational partnership, they are not constructing a new relationship. They are recovering a very old one that colonial geography temporarily interrupted.[9]

The present-day economic complementarities reinforce what history suggests. India brings the depth of a continental civilisation, its scientific and engineering talent, its vast diasporic networks, its democratic institutional inheritance, its demonstrated capacity to build world-scale digital infrastructure. Indonesia brings the breadth of an archipelagic civilisation at the strategic fulcrum of the Indo-Pacific, extraordinary natural resource endowments in the critical minerals the green transition demands, a growing demographic dividend of 280 million people, command of the Malacca and Lombok Straits through which forty per cent of global trade passes, and a tradition of civilisational pluralism that makes it a natural partner for India's own multi-ethnic democracy. Where India faces a density problem, too many people pressing against finite land and water, Indonesia faces a distribution problem: vast resources and geography still unevenly connected. These complementarities are structural, not incidental.

The bilateral numbers today however reflect an underleveraged relationship. India-Indonesia trade hovers around $30 billion annually, a tiny fraction of what geographic proximity, complementary factor endowments, and historical depth should generate. Indian pharmaceutical, IT, and renewable energy capital finds little institutional pathway into Indonesian markets. Indonesian nickel and bauxite, critical to India's battery and semiconductor ambitions, move predominantly to Chinese refineries rather than Indian ones. The connectivity infrastructure across the Bay of Bengal, the maritime and digital sinews of genuine partnership, remains thin. These are coordination failures of precisely the kind the Big Push framework identifies: individually rational behaviour producing collectively suboptimal outcomes that only deliberate, simultaneously-executed state investment can overcome.

A duo-polar Asian architecture anchored by India and Indonesia would not merely balance Chinese power, though it would do that. More importantly, it would constitute a distinct model of development: rooted in democratic pluralism, civilisational autonomy, and coordinated ambition, as against both the authoritarian-capitalist temptation of many States in Asia as well as the Global South and the passive market-dependence the Washington consensus once prescribed. The world in the age of discontinuity needs multiple working models of how civilisational states navigate structural transformation. An India-Indonesia axis, each pursuing ambitious national visions while deepening the architecture of bilateral partnership, could be the most consequential such model for the Global South.[10]

## VIII. Conclusion: The Courage to Imagine

The age of mega-corporations, mega-cities, fracturing democracies, rising ethnic particularisms, and species-level technological transformation is an age without reliable maps. The cartographers of the twentieth century, the regression economists, the trend extrapolators, the GDP growth monitors, produced tools adequate for navigating a world with stable parameters. That world is gone. In its place stands one

in which algorithms may outpace cognition, in which the biology of ageing may be reversed, in which human beings may settle another planet within a generation, and in which the political institutions that managed the last century are visibly straining under forces they were not designed to contain.

What is needed is not the courage of the forecaster, the willingness to make confident predictions from past data, but the imagination and creativity of the navigator: holding multiple possible destinations in mind simultaneously, making investments robust across uncertainty, and coordinating the large simultaneous bets that discontinuous transitions require. This is the spirit of the Big Push; not the timidity of the marginal adjustment, but the audacity of the civilisational leap.

Viksit Bharat and Indonesia Emas 2045 are, at their best, expressions of exactly this spirit. And together, grounded in a civilisational relationship older than either modern state, animated by structural economic complementarities that remain spectacularly underleveraged, and positioned at the demographic and geographic heart of the Indo-Pacific, India and Indonesia carry within their partnership the seed of an Asian Century that is genuinely plural; one that belongs not to any single power but to the full, diverse weight of Asian civilisation coming into its own.

The age of discontinuity does not reward those who extrapolate. It rewards those who imagine and then build. That lesson and core message will be the true gift of the Asian Century.

## Notes and Sources

### 1. Harari on Homo Deus and algorithmic stratification

Yuval Noah Harari, *Homo Deus: A Brief History of Tomorrow* (Harvill Secker, 2015). Harari argues that the same forces of science and technology that elevated *Homo sapiens* to planetary dominance are now poised to transcend the species itself, threatening to render individual human experience economically and politically superfluous. See especially Parts II and III.

### 2. Sinclair on the biology of ageing and longevity

David A. Sinclair with Matthew D. LaPlante, *Lifespan: Why We Age — and Why We Don't Have To* (Atria Books, 2019). For epigenetic reprogramming and vision restoration, see Yuancheng Ryan Lu et al., "Reprogramming to recover youthful epigenetic information and restore vision," *Nature* 588, 2020. For the macroeconomic implications of radical longevity extension, see Andrew Scott and Lynda Gratton, *The New Long Life* (Bloomsbury, 2020).

### 3. Musk on Mars colonisation and multi-planetary civilisation

Elon Musk, "Making Humanity a Multi-Planetary Species," *New Space* 5(2), 2017. For the philosophical and governance implications, see Charles Cockell, *Space on Earth: Saving Our World by Seeking Others* (Macmillan, 2006). The legal vacuum governing extraterrestrial settlement remains contested under the Outer Space Treaty (1967), which prohibits national appropriation of celestial bodies but does not address private settlement or commercial resource extraction.

### 4. Hume, Russell, and the philosophical roots of the forecasting fallacy

The problem of induction — the impossibility of logically justifying the inference from past regularities to future ones — was first stated with full rigour by David Hume in *A Treatise of Human Nature* (1739), Book I, Part III, and restated more accessibly in *An Enquiry Concerning Human Understanding* (1748), Section IV. Hume's conclusion is stark: our belief that the future will resemble the past is a habit of the mind, not a logical necessity. He argued that our expectation of future regularities is not a product of reason but of *custom and habit* — a psychological disposition, not a logical entitlement — which means inductive models are inherently vulnerable to structural breaks: the moment the habit-forming conditions change, the projections they generate become systematically wrong in a direction the model cannot detect. What Hume called the "problem of induction" remains, in the words of Karl Popper, "the central problem of the theory of knowledge." Bertrand Russell gave Hume's abstraction its most memorable concrete form in *The Problems of Philosophy* (Home University Library, 1912), Chapter VI, with the chicken illustration: the chicken's inductive model was not wrong in its data — every observation was accurate — but catastrophically wrong in its assumption that the system generating the regularity was stable. This is precisely the error embedded in regression-based economic forecasting at structural breaks. For twentieth-century philosophical responses to Hume, see Karl Popper, *The Logic of Scientific Discovery* (Hutchinson, 1959); and W.C. Salmon, *The Foundations of Scientific Inference* (University of Pittsburgh Press, 1967). For the econometric dimension, see David F. Hendry, *Dynamic Econometrics* (Oxford University Press, 1995); and Nassim Nicholas Taleb, *The Black Swan: The Impact of the Highly Improbable* (Random House, 2007). For the 2008 financial crisis as a case in point, see the British Academy's response to Queen Elizabeth II's question "Why did no one see it coming?" (July 2009).

**5. Scenario planning as an alternative to linear forecasting**

Pierre Wack, "Scenarios: Uncharted Waters Ahead," *Harvard Business Review*, September–October 1985 — the canonical account of Shell's scenario methodology and its anticipation of the 1973 oil shock. For application to national transitions, see the Mont Fleur Scenario exercise (University of the Western Cape, 1992). For complexity and non-linear systems, see Nicholas Rescher, *Complexity: A Philosophical Overview* (Transaction Publishers, 1998).

**6. The Big Push in development economics**

Paul N. Rosenstein-Rodan, "Problems of Industrialisation of Eastern and South-Eastern Europe," *Economic Journal* 53(210/211), 1943. The formal model: Kevin M. Murphy, Andrei Shleifer, and Robert W. Vishny, "Industrialisation and the Big Push," *Journal of Political Economy* 97(5), 1989. For applied evidence, see Joe Studwell, *How Asia Works* (Profile Books, 2013); and Dani Rodrik, "Industrial Policy for the Twenty-First Century," UNIDO Working Paper, 2004.

**7. Viksit Bharat: framework and operational architecture**

Government of India, *Viksit Bharat @2047: Voice of Youth* (Ministry of Education, 2023). For the National Infrastructure Pipeline, see Department of Economic Affairs, *NIP Task Force Report* (2019). For the PLI scheme, see Ministry of Commerce and Industry, *PLI Schemes: Comprehensive Overview* (2022). For India's semiconductor and space ambitions, see the India Semiconductor Mission (MeitY) and ISRO *Vision 2047*.

**8. Indonesia Emas 2045 and the Asta Cita framework**

Badan Perencanaan Pembangunan Nasional (Bappenas), *Indonesia 2045: Berdaulat, Maju, Adil dan Makmur* (2019). For the Asta Cita framework, see Presidential Programme documents (2024). For hilirisasi mineral strategy, see Coordinating Ministry for Economic Affairs, *Hilirisasi Mineral: Policy Framework and Investment Pipeline* (2023). For Nusantara, see Otorita IKN, *Masterplan Nusantara 2022–2045*.

**9. The ancient maritime civilisational relationship between India and Indonesia**

For the Srivijayan thalassocracy and its Indian connections, see Hermann Kulke, K. Kesavapany, and Vijay Sakhuja (eds.), *Nagapattinam to Suvarnadwipa: Reflections on the Chola Naval Expeditions to Southeast Asia* (ISEAS, 2009); and Pierre-Yves Manguin, "The Archaeology of Early Maritime Polities of Southeast Asia," in Ian Glover and Peter Bellwood (eds.), *Southeast Asia: From Prehistory to History* (RoutledgeCurzon, 2004). For the Indian cultural imprint on Borobudur and the Sailendra dynasty, see Jan Fontein, *The Sculpture of Indonesia* (National Gallery of Art, Washington, 1990). For the modern civilisational partnership framing, see Satish Chandra Mishra, *India-Indonesia in the Twenty-First Century* (Arthashastra Institute Indonesia, 2024).

**10. The India-Indonesia duo-polar Asian architecture**

For the broader Indo-Pacific framework, see C. Raja Mohan, *Samudra Manthan: Sino-Indian Rivalry in the Indo-Pacific* (Carnegie Endowment, 2012); and Evan Laksmana, "Indonesia's Indo-Pacific Vision: Navigating Strategic Ambiguity," *Asia Policy* 16(1), 2021. On the underleveraged bilateral economic relationship, see ASEAN-India Centre at RIS, *India-ASEAN Economic Relations: Trade, Investment and the Path Forward* (2023). On Indonesia's critical mineral endowments and Indian industrial ambitions, see International Energy Agency, *The Role of Critical Minerals in Clean Energy Transitions* (IEA, 2021).