AMERICA. CHINA. THE PROSPERITY QUESTION.

THE AMERICAN CONVERSION MACHINE



How the United States Turns Innovation, Capital and Global Position into Prosperity, and What China Reveals

DRISS EFFINA

A DATA-DRIVEN ACCOUNT OF ECONOMIC POWER

EDITION NOTE

About this edition

The American Conversion Machine examines how productive capability becomes income, usable services, and future economic capacity. The United States is the principal subject; China is the central benchmark. Germany, Japan, South Korea, and Canada provide additional comparisons where the available data support them.

This research edition uses a statistical cutoff of October 27, 2026. Observation years differ by series. The main annual comparisons extend through 2025 where complete data are available, with earlier common years retained when required. The text, tables, and figures distinguish observations, descriptive estimates, and hypothetical calculations.

The manuscript contains an introduction, twenty-four chapters, a conclusion, fifty-one data plates, twenty-four methodological notes, an annotated bibliography, and a subject index. Its 450-page pagination refers to this typeset PDF edition. The accompanying research archive contains editable manuscript sources, data, calculation scripts, and figure files.

Originality is claimed for the organization of the inquiry and the calculations developed for this edition. The book acknowledges prior economic research and does not claim that its component concepts have no predecessors. Descriptive relationships are not represented as newly identified causal laws.

Author: Driss Effina. American English edition. Research calculations and editorial text are presented as a completed manuscript for further scholarly and publishing review. No ISBN or publisher affiliation is asserted.

CONTENTS 01 / 03

Measuring and producing

Introduction 13

I Measuring the American Economic Machine

01 Four Economic Americas 25

02 The Changing Engines of American Growth 41

03 Following the Gains Through the Economy 58

04 Comparing America and China Without Statistical Illusions 74

II Producing Value and Scaling Innovation

05 Productivity Where It Is Created 90

06 From Scientific Discovery to Economic Deployment 107

07 Manufacturing Depth and Service Power 124

08 The Physical Foundations of Economic Scale 139

CONTENTS 02 / 03

Financing and transmitting

III Financing and Capturing Global Value

09 The Dollar and the Geography of Financing Advantage 155

10 Global Corporations and National Economic Interests 170

11 Trade Networks and the Price of Dependence 186

12 Debt That Builds and Debt That Defers 201

IV Turning National Wealth into Household Prosperity

13 From Productivity to Pay and Household Income 217

14 The Cost of a Prosperous Life 233

15 The Geography of Gains and Losses 248

16 Generations and the Ownership of Future Prosperity 263

CONTENTS 03 / 03

Renewing and testing the future

V Renewing the Foundations of Economic Power

17 State Capacity and the Returns to Public Action 278

18 Competition, Ownership, and the Allocation of Returns 291

19 People, Skills, and the Capacity to Renew 305

20 Resilience and the Ability to Recover 318

VI Testing the Future Against China

21 The Next Technology Conversion Race 331

22 Fragmentation and the Cost of Rebuilding Economic Links 344

23 Which Reforms Improve Both Power and Prosperity? 357

24 America and China in 2040 371

Conclusion 385

Methodological notes 397

Annotated bibliography 421

Subject index 441

READER'S GUIDE

How to read the book

Read the introduction and Part I first if the purpose is to understand the argument as a whole. They establish the difference between production, resident income, ownership, and control. Later chapters rely on those boundaries rather than redefining national strength with each new statistic.

For a policy question, begin with the relevant conversion stage. A weak research return belongs near discovery and deployment. A household squeeze belongs near compensation, prices, and access. A supply interruption belongs near dependence and recovery. The reform chapter connects these stages without assuming that isolated policy effects can simply be added.

Data plates follow the chapter they support. Each states the evidence type, unit, source keys, and a material limit. The methodological notes explain the calculation. Citation keys in brackets lead to the annotated bibliography, where full source information and links are provided.

The scenarios are best read as requirements. Change an assumed growth rate, exposure share, replacement time, or transmission parameter and inspect the result. The archive makes that exercise possible. A scenario is not more reliable because its arithmetic is precise; its interpretation remains conditional on the assumptions.

Reading purpose	Start here
National accounting and comparison	Chapters 1-4
Productivity and deployment	Chapters 5-8
Finance, firms, trade, and debt	Chapters 9-12
Household prosperity and access	Chapters 13-16
Institutions and renewal	Chapters 17-20
Future choices and 2040	Chapters 21-24

READER'S GUIDE

Five kinds of evidence

The book uses several forms of reasoning because no single method can answer every question. Their labels are substantive. A calculated ratio can be exact given its inputs and still inherit measurement error. A regression can be statistically informative without identifying a policy effect. A hypothetical model can clarify a mechanism without estimating its national magnitude.

Whenever a numerical statement appears, the reader should be able to identify its category, source boundary, and denominator. The same chapter can contain several categories, but the result of one is not silently promoted into another.

Type	Meaning	Example
Observation	A reported statistic with a source and date	A 2024 regional price parity
Transformation	Arithmetic applied to observations	A growth rate or bilateral ratio
Descriptive estimate	A fitted statistical relationship	Annual productivity-pay regression
Simulation	A result conditional on chosen inputs	Replacement-time or 2040 scenario
Framework	A defined way to organize questions	The four economic maps

Confidence intervals belong to a statistical specification. Scenario ranges belong to a chosen set of assumptions. Neither covers every form of uncertainty. The distinction is maintained in the figures, prose, and appendices.

READER'S GUIDE

The four operations

The economy is examined through four linked operations. They are not an additive index and do not imply that every institution belongs in only one category. Their purpose is to locate the transition at which an advantage becomes ineffective or inaccessible.

Operation	Core question	Typical constraint
Produce	Can resources become useful output?	Technology, organization, capital, energy
Attract	Can the economy obtain valuable resources and access?	Finance, talent, demand, international networks
Transmit	Do gains become usable household prosperity?	Income distribution, prices, services, ownership
Renew	Can capabilities be maintained and improved?	Skills, maintenance, learning, resilience

The operations form a feedback system. Household security can support learning and mobility. Better services can improve participation. International access can finance productive investment or inflate scarce assets. A current advantage can strengthen or weaken the conditions for the next round of growth.

The empirical chapters therefore avoid a single national score. A score would require weights that mix measured quantities with judgments about welfare and strategic objectives. The book instead makes the relevant quantities and trade-offs visible so that a reader can assess them directly.

READER'S GUIDE

Results worth keeping separate

These findings summarize the edition's original calculations. Each answers a different question. Reading them together supports the conversion argument; combining them into one score would erase their boundaries.

Result	What it measures
China/U.S. 2025: 63% current dollars, 134% PPP total, 33% PPP per person	Different definitions of scale and productive resources
U.S. productivity-pay log-growth ratio about 0.45, 2000-2025	Cumulative change, not a causal transmission share
State income dispersion about 26.3% smaller after price adjustment	Unweighted dispersion of fifty state averages in 2024
Illustrative essential basket about 17.1% dearer relative to all-item CPI	Observed category prices with chosen weights, 2000-2024
Equal exposure produces very different replacement losses	A hypothetical mechanism involving lead time and ramp
Slow and broad renewal yield similar 2040 bilateral ratios	Relative rank can conceal different absolute progress

The data plates and methodological notes provide the definitions, assumptions, and calculations behind each result. The introduction explains how they connect to the broader thesis.

READER'S GUIDE

The data calendar

There is no single latest year for every economic question. A consistent comparison often requires an earlier common year. The book prints the observation year rather than allowing the publication date to stand in for it.

Evidence	Main observation window	Treatment
International national accounts	Annual through 2025 where available	Common years for bilateral ratios
U.S. productivity and compensation	Annual averages through 2025	Four quarterly observations required
Household income releases	2025	Definitions retained by country
Regional income and prices	2024	Fifty-state cross-section
Original CPI price experiment	2000-2024	Complete twelve-month averages
Multinational activity	2023	Latest activity year at cutoff
BIS credit and wealth shares	Fourth quarter 2025 in main tables	Quarter and sector labels retained
2040 paths	2025 baseline; future assumptions	Scenarios, not observations

October 2025 CPI is missing in the source record. The price experiment does not fill it. Complete 2025 observations from other sources remain usable. Statistical discipline is series-specific: one missing price month does not invalidate a separate annual income release.

READER'S GUIDE

Conventions and notation

A percentage change compares a value with its starting level. A percentage-point change subtracts two percentages. A logarithmic contribution is labeled in log points and is used when an exact additive decomposition follows from a multiplicative identity.

A billion means one thousand million; a trillion means one thousand billion. Dollar signs indicate U.S. dollars unless another unit is explicitly stated. International dollars identify purchasing-power units and should not be interpreted as cash income. Real measures retain the source's price base.

Mean, median, total, per person, per worker, and per hour are distinct. Household income is not per-person income. Payroll jobs are not necessarily unique employed people. A stock at a date is not an annual flow. These distinctions remain attached to tables even where they make a comparison less visually simple.

Displayed values are rounded; calculations use the stored precision. A small discrepancy in a printed sum can result from rounding. Missing observations are not zero. A source that was not retrieved is not treated as evidence that the quantity does not exist.

Citation keys use short uppercase labels in brackets. CALC identifies a calculation in the companion archive. It does not imply that the underlying inputs are original survey observations. The bibliography and appendices specify the provenance and method.

READER'S GUIDE

A note on originality

A book about a major economy cannot be original by pretending that its data, institutions, and theories have never been studied. Its contribution must come from the questions it asks, the comparisons it makes possible, and the discipline with which it connects evidence to conclusions.

The organizing question here is conversion: under what conditions do national advantages become useful services, broad prosperity, and renewed capacity? The approach links subjects often treated separately, including productivity, the dollar, corporate ownership, essential costs, geography, implementation, and recovery time.

The numerical work is designed to be inspected. The reader can reproduce the descriptive regressions, change the essential-basket weights, compare nominal and price-adjusted state income, vary substitution and replacement assumptions, or alter the 2040 growth paths. A result that changes under those choices is more informative when the dependence is visible.

The book also leaves some questions unresolved where the evidence assembled is insufficient. It does not manufacture a harmonized household panel, a complete bilateral supplier network, or a universal causal policy ranking. Those boundaries define where additional research would improve the analysis.

The aim is a reference that remains useful when a headline changes. A new release may alter a level or a growth rate. It does not remove the need to distinguish scale from prosperity, ownership from production, or an announced capability from a service that people can actually use.

Introduction

The question behind the rankings

A country can become richer in its national accounts while a household finds it harder to obtain a home, raise children, or withstand an interruption in earnings. A country can also command enormous production capacity without providing its residents with equally large claims on what it produces. Neither observation makes gross domestic product useless. Both make it necessary to follow the economic process beyond the point at which output is recorded.

This book asks how the United States converts productive capability into national income, household prosperity, and the ability to remain productive. China is the principal comparison because it makes the differences among these outcomes unusually visible. Its population, manufacturing scale, investment pattern, and development trajectory expose assumptions that are easy to overlook when examining America alone. Germany, Japan, South Korea, and Canada provide additional comparisons where a bilateral contrast would otherwise confuse a national characteristic with a general economic relationship.

The central argument is that durable economic strength depends on the quality of conversion between successive stages of economic life. Discovery must become an economically useful process. A useful process must reach enough firms to matter.

Production must generate income that someone can claim. Income must purchase services that households value. Current gains must support the people, institutions, and productive assets needed for future gains. Each transition has its own constraints. Success at one transition does not establish success at the next.

The argument is deliberately more demanding than a ranking of national power. It asks whether an advantage is usable, who receives its returns, what it costs to maintain, and how rapidly it can be replaced. A large financial market can attract international savings while financing expensive domestic property. An efficient factory can increase output while intensifying dependence on one critical component. A successful technology company can raise national wealth while increasing the price of access to an essential business service. These outcomes can coexist. An adequate economic account must make room for all of them.

The analysis develops four operations: producing value, attracting resources, transmitting gains, and renewing capacity. Producing includes both invention and the ordinary organizational improvements that raise output. Attracting includes capital, talent, demand, and access to international networks. Transmitting concerns the movement from production and ownership to disposable resources and usable services. Renewing covers replacement, adaptation, institutional learning, and recovery after disruption. The operations overlap, but distinguishing them helps

identify where a national advantage stops benefiting the wider economy.

What the numbers change

The contrast with China begins with a measurement result. In the World Bank data downloaded for this book, China's 2025 output was approximately 63 percent of American output when expressed in current U.S. dollars. At constant 2021 purchasing power parities, it was approximately 134 percent. Chinese output per person, measured on the same purchasing power basis, was approximately 33 percent of the American level. These statements describe different economic objects. The arithmetic becomes contradictory only when the objects are treated as interchangeable. [WDI]

The first comparison is relevant to financial scale measured at prevailing exchange rates. The second compares the volume of domestic production using a common price framework. The third removes the effect of population. None directly measures the income of the median household, the control of a strategic technology, or the cost of replacing a disrupted supply relationship. Those questions require further evidence.

The time dimension complicates the familiar story of convergence. Between 2021 and 2025, China's output relative to the United States fell when measured in current dollars, from about 77 percent to 63 percent. Over the same interval, its purchasing power output ratio rose from about 124 percent to 134 percent. Its

purchasing power output per person also rose relative to America's. An exchange rate comparison can therefore suggest widening distance while a volume comparison indicates continued convergence. Explaining the divergence requires attention to prices and currencies, not a choice of whichever ranking confirms a prior conviction.

The American evidence presents a different puzzle. Using annual averages of the Bureau of Labor Statistics series, nonfarm business output per hour increased at a compound annual rate of approximately 1.97 percent between 2000 and 2025. Real hourly compensation increased by approximately 0.88 percent. The ratio of their cumulative logarithmic growth was about 0.45. Yet a descriptive regression of annual compensation growth on annual productivity growth over 1985 through 2025 yields a slope near one. [US-PROD; CALC]

There is no statistical contradiction. Two series can move together from year to year while accumulating different long-run gains. The regression also contains an intercept, and the relationship changes with the sample period. Compensation uses a consumer price adjustment; productivity uses an output measure with a different price concept. Compensation averages include benefits and workers throughout the nonfarm business sector. They are not a measure of the median worker's cash wage. The book keeps these distinctions visible because they change the interpretation of the result.

The claim that productivity no longer matters is therefore too strong. The claim that productivity automatically delivers proportionate improvements in household living standards is also too strong. The relevant question concerns the conditions under which greater productive capacity translates into broader command over goods, services, security, and time.

Conversion as an economic problem

Consider an illustrative economy with output of 100 and household disposable resources of 60. If output rises to 110 while household resources rise to 63, households have gained in absolute terms. Their share has nevertheless declined. If the cost of a fixed essential basket rises from 30 to 35, the resources remaining after buying that basket fall from 30 to 28. Three statements are simultaneously true: production increased, disposable resources increased, and the household's remaining spending capacity declined.

This example is not an estimate for either country. It establishes the accounting question that guides the empirical work. A person judging prosperity from the remaining 28 is describing an experience that the output increase alone cannot settle. A policymaker judging fiscal capacity from the larger output is considering a different, also relevant, constraint. The task is to connect the two accounts without pretending they are identical.

The same logic applies to investment. Suppose an economy raises capital formation from 20 to 30

percent of output. That change may build valuable productive capacity. It may also divert resources from current consumption, require future maintenance, and create financial claims that must eventually be serviced. Its value depends on the productivity, utilization, durability, and financing of the new capital. The expenditure itself does not establish the answer.

Renewal requires similar care. Replacing an aging bridge may produce a smaller visible expansion than constructing a new industrial park. It can nevertheless prevent a larger future loss. Training an experienced workforce may receive less attention than announcing a new research center, even when inadequate deployment skills are the binding constraint. A national economic strategy becomes more effective when it identifies the marginal obstacle to useful output rather than rewarding the most visible input.

The contribution of this book

The book's originality lies in the questions put to the data, the reconciliation of accounts, and the conditional experiments built from them. It does not claim that productivity, distribution, industrial organization, or international finance are newly discovered fields. Existing scholarship has established important mechanisms in each. The purpose here is to connect those mechanisms in a reproducible account of how American advantages become usable prosperity, with China providing a disciplined comparison throughout.

The first contribution is a transmission account that separates productivity, average compensation, household income, and consumption. It shows how different conclusions arise from different populations and deflators. The book estimates descriptive relationships and reports their sensitivity rather than treating an attractive correlation as a causal law.

The second is an analysis of essential costs. A fixed basket experiment distinguishes an increase in a household's income from an increase in what remains after housing and other commitments. This experiment is complemented by observed American price series. The resulting calculations are useful precisely because their assumptions are explicit. They do not invent a universal household or imply that every family faces the same inflation rate.

The third is a territorial account. State personal income is adjusted using regional price levels to investigate how the geography of command over resources differs from the geography of dollar incomes. These estimates are averages, not local welfare rankings. They provide a starting point for understanding why access to productive places and the price of living in them must be analyzed together.

The fourth is a framework for dependency and replacement. It distinguishes the share of an input obtained from a foreign source from the difficulty of replacing it. The simulations make time, substitution, inventories, and bottlenecks explicit. Where the underlying bilateral production network cannot be adequately estimated from the available evidence, the

book labels the exercise illustrative. It does not turn a hypothetical network into a measured estimate of national vulnerability.

The fifth contribution is a set of renewal scenarios. The long-run experiments vary output-per-person growth and population change through 2040. Separate mechanism experiments examine household transmission, investment effectiveness, and institutional delay. The scenarios are conditional calculations. They provide thresholds that readers can monitor rather than an unsupported probability attached to a preferred future.

Evidence and the limits of inference

The statistical cutoff for this edition is October 27, 2026. The principal international database is the World Bank's World Development Indicators, downloaded with source codes and observation years preserved. The American time series use primary statistical releases distributed through the Federal Reserve Bank of St. Louis where available. National releases provide additional information for China and the United States. Data coverage differs by series. An observation for 2023 is not silently presented as an observation for 2025.

The main comparisons use annual observations through 2025 when available, with 2024 or earlier common years where required. Partial observations for 2026 are kept separate. Historical interpretation reaches further back than the uniformly comparable quantitative sample. This matters especially for

purchasing power comparisons and Chinese series, whose reliable coverage and classification change over time.

All numerical calculations distinguish observations, transformations, estimates, and assumptions. An observation comes from a named source. A transformation includes a growth rate, ratio, price adjustment, or accounting decomposition. An estimate fits a statistical relationship to observed data. An assumption specifies a quantity for a simulation. These categories can appear in the same chapter, but they are never given the same evidentiary status.

The descriptive regressions do not identify the causal effect of an American institution or a Chinese policy regime. Country outcomes reflect many interacting influences. A comparison of two national histories cannot isolate the role of political organization, financial structure, demography, geography, technology, and the international environment at once. Where causal research by other authors is discussed, the scope of that research remains attached to its findings.

This discipline also applies to uncertainty. A confidence interval around a regression coefficient addresses uncertainty within a statistical specification. It does not include every possible measurement error, omitted variable, future policy change, or structural break. A scenario range addresses a chosen set of assumptions. It is not a confidence interval unless a probability model has actually been specified and justified. Precision in

calculation does not eliminate uncertainty in the economic interpretation.

Comparability receives equal attention. Household income, personal income, and national income are different concepts. Total employment and hours worked are different denominators. A manufacturing production index and manufacturing value added answer different questions. A country's stock of liabilities cannot be added to its annual income and described as total resources. The appendices provide the definitions needed to reproduce the calculations and understand these boundaries.

Reading America through China

China is used neither as an inevitable successor nor as a predetermined cautionary tale. It is an economy with different combinations of productive scale, household consumption, investment, financial arrangements, and demographic pressures. Its experience makes certain American strengths easier to see and certain American weaknesses harder to dismiss.

A comparatively low consumption share does not imply that consumption has failed to grow. A high manufacturing share does not prove that all factories earn adequate returns. A large domestic financial market does not establish that capital reaches its most productive uses. A high research budget does not ensure widespread adoption. Applying the same reasoning to both countries is more useful than

assigning each country a permanent list of virtues and defects.

The benchmark also changes the scale of the question. For a small economy, specialization combined with dependable international access may provide a strong route to prosperity. For an economy with the scale and strategic responsibilities of the United States or China, the reliability of external access becomes a larger part of policy. Even then, self-sufficiency has costs. The challenge is to distinguish economically valuable insurance from expensive duplication and politically attractive projects with weak returns.

The comparison therefore concerns capabilities and their conversion, not merely rivalry. Both countries can improve household welfare at the same time. Both can also incur losses through fragmentation, misallocation, or failure to maintain productive assets. A relative ranking can improve because the other country deteriorates. That outcome should not be confused with successful domestic economic policy.

How the argument develops

Part I establishes the accounting and measurement foundations. It separates production, income, ownership, and strategic control, then investigates changes in the growth process. Part II examines the creation and deployment of productive capability, including science, manufacturing, services, energy, and infrastructure. Part III turns to finance, multinational firms, trade relationships, and debt.

Part IV follows resources into households and places. It examines compensation, essential costs, territorial differences, and the ownership of future income. Part V studies the institutions that sustain or erode renewal, including public implementation, competition, skills, and resilience. Part VI subjects the argument to technology, fragmentation, reform, and long-run scenarios.

The concluding judgment is not that one statistic should replace GDP. A reference account of the American economy needs several linked measures, each matched to the question it can answer. The reader should leave able to identify the relevant constraint, examine the evidence behind it, and recognize what would have to change for a different outcome to become plausible.

The United States possesses advantages that remain economically consequential. Their durability depends on the ability to convert them into widely usable gains and to replenish the foundations on which they rest. China makes that task more demanding, but the ultimate test remains domestic as well as international: whether the economy expands what its people can do, obtain, and sustain over time.

END OF THE FREE EXCERPT

Continue reading The American Conversion Machine

24 chapters, 51 data plates, 24 methodological notes, an annotated bibliography and a subject index. 450 pages. English PDF eBook.

Get the full book

globalstrategyfiles.com

Driss EFFINA, PhD. Independent Researcher, Global Strategy Files.