# High-Quality Development versus Baseline Risks: China's Structural Transformation to 2035 Using a 2023 IO-Updated Dynamic CGE Model

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**Abstract**: As the 14th Five-Year Plan period (2021–2025) draws to a close, China faces mounting global uncertainty and domestic "threefold pressures": a structural growth slowdown, rebalancing pains, and the digestion of earlier policy legacies. This paper examines how China's economic structure and key social outcomes will evolve up to 2035 under a risk-aware *baseline* scenario and a reform-driven *high-quality development* scenario.

The paper's methodological contribution lies in updating the recursive-dynamic computable general equilibrium model for China (DRCCGE), originally developed by the Development Research Center of the State Council. The paper constructs a new 2023 Social Accounting Matrix based on China's latest officially released 2023 IO table, complemented by consistent national accounts and structural statistics, thereby refreshing the empirical benchmark for medium-term to long-term structural diagnostics. The updated model features 42 production sectors, urban and rural representative households, and four primary factors (capital and low-, medium-, and high-skilled labor). By embedding factor-skill and urban–rural heterogeneity into an IO-consistent production network, the framework links structural change to distributional and environmental outcomes in a unified, accounting-consistent setting.

Simulation results show that, relative to the baseline, the high-quality development pathway shifts growth drivers from capital accumulation toward total factor productivity gains, strengthens domestic demand, coordinates sectoral structural change, narrows the urban-rural income gap more rapidly, and achieves stronger decoupling of energy use and carbon emissions from growth. Overall, the pathway moves China's 2035 outlook from "deceleration by inertia" to "quality-oriented and sustainable upgrading".

**Key words**: High-quality development; Computable general equilibrium (CGE) model; Social accounting matrix; Structural transformation; Low-carbon transition; China 2035

# 1. Introduction

Over the four and a half decades since the launch of reform and opening-up, China has achieved an extraordinary economic transformation. Gross domestic product expanded from RMB 489.2 billion in 1981 to RMB 134.9 trillion (about USD 18.9 trillion) in 2024, with an average annual growth rate of close to 9% over the period as a whole. China became the world's second-largest economy in 2010, and its share in global GDP rose from 1.7% in 1978 to above 18% by 2024, contributing roughly 30% of global growth in recent years. Per capita gross national income reached USD 12,074 in 2023, placing China close to the World Bank's high-income threshold. Viewed from any long-run perspective, this trajectory represents one of the most rapid and sustained development episodes in modern economic history.

Yet the period covered by the 14th Five-Year Plan (2021–2025) has made it increasingly clear that the conditions underpinning this trajectory are changing in fundamental ways. On the demand side, the growth model is undergoing a protracted rebalancing. Final consumption has become the primary engine of growth, but its share in GDP remains substantially below that of major advanced economies, reflecting persistent constraints on household income and consumption capacity. Investment's contribution to growth has weakened as returns to capital decline, local-government debt tightens fiscal space, and the traditional construction-driven and real-estate-driven investment cycle loses momentum. Net exports remain positive but face rising external headwinds from geopolitical fragmentation, trade protectionism, and the reorganization of global value chains, with Chinese firms encountering intensifying competition from emerging alternative production bases such as Vietnam, India, and Mexico.

On the supply side, the sources of productivity growth are being reshaped. The deceleration of total factor productivity (TFP) growth—from around 3% before the global financial crisis to roughly 1.5-2% thereafter, and near zero during the pandemic years—reflects both convergence effects as China approaches the global technology frontier and the slowing of once-powerful structural drivers such as rural-to-urban labor reallocation and industrialization. At the same time, the structural transformation of the economy continues: the tertiary sector now accounts for 56.7% of GDP and over half of incremental growth, while within manufacturing, high-technology industries have overtaken mid-technology industries as the leading subsector. These trends point to real upgrading potential, but also to the challenge that service-sector productivity growth is typically slower, and that China's service sector still exhibits a pronounced structural imbalance, with an oversized low-skill component and comparatively underdeveloped innovation-intensive and skill-intensive social services.

The demographic foundation of growth has shifted even more decisively. China's total population entered negative growth in 2022, with the working-age population (aged 15–64) having peaked in 2013 and declined by roughly 62 million over the subsequent decade. The share of population aged 65 and above exceeded 14% in 2021, marking China's entry into a moderately aged society at a per-capita income level well below that observed in advanced economies at comparable demographic turning points—a "getting old before getting rich" configuration that tightens fiscal space, raises dependency burdens, and compresses the room for labor-driven expansion. The conventional demographic dividend has been essentially exhausted, and whether it can be effectively replaced by a "talent dividend" anchored in rising educational attainment and human-capital quality has become a central question for the medium term.

The energy and climate dimension adds a further layer of complexity. After a decade of improving energy efficiency and moderating consumption growth, both energy use and carbon emissions exhibited a visible rebound during the first years of the 14th FYP, with energy consumption growing at an annual average of 4.7%—well above the 13th FYP rate—and carbon emissions rising by an average of 3.8% per year in 2021–2023. The slowdown in efficiency gains, the continued importance of coal in electricity supply, and the volatility of oil and gas markets all contribute to the difficulty of meeting the 18% carbon-intensity reduction target set for the 14th FYP and of maintaining the trajectory implied by the dual-carbon commitments.

These shifts are unfolding against a challenging external environment characterized by weak global demand, trade fragmentation, rising investment barriers in developed economies, and intensifying technological competition. At the same time, China is approaching a critical policy juncture: the forthcoming 15th Five-Year Plan (2026–2030) will be the first full medium-term plan explicitly designed to steer the economy toward the Long-Range Objectives through the Year 2035, under which China aims to reach the level of a moderately developed country and to substantially realize socialist modernization. Against this backdrop, the central policy orientation of high-quality development—emphasizing innovation, coordinated regional and structural development, green transition, openness, and shared prosperity—has moved from a general guiding principle to the concrete organizing logic of macroeconomic, industrial, and social policy.

This configuration of mounting structural pressures and sharpening policy choices motivates the present study. The central question is not whether China can continue to grow, but along which trajectory: an inertial path in which existing structural frictions, demographic headwinds, and external frictions gradually compress the growth frontier, or a reform-driven path in which the high-quality development agenda translates into measurable improvements in productivity, rebalancing, equity, and decarbonization. Answering this question in a quantitatively consistent framework requires a model that links the production structure of the economy, factor markets, household heterogeneity, and external linkages within a single general-equilibrium system, and that is calibrated to a sufficiently recent benchmark to capture the structural realities of the post-pandemic economy.

The analysis in this paper is carried out using the DRCCGE model, a recursive-dynamic computable general equilibrium model of China developed and maintained at the Development Research Center of the State Council. For the present application, the model has been updated to a new 2023 benchmark based on the most recent official input–output table and a correspondingly reconstructed social accounting matrix. On this updated basis, we design two contrasting scenarios for the period to 2035: a baseline scenario that embeds the continuation of current structural frictions and a persistently subdued external environment, and a high-quality development scenario that introduces reform-consistent improvements in total factor productivity, factor-market efficiency, consumption-driven demand rebalancing, urban–rural income convergence, and low-carbon transition. The comparison of the two scenarios is used to diagnose China's medium- to long-term prospects along five dimensions: growth drivers, demand-side rebalancing, supply-side upgrading, inclusive growth, and energy and emissions.

The paper makes three contributions. First, it provides the first systematic application of the DRCCGE model on the basis of a 2023 input–output benchmark, thereby updating the empirical foundation for medium- to long-term analysis of the Chinese economy. Second, it proposes a unified baseline-versus-high-quality-development scenario framework that embeds the core policy logic of the 15th FYP and the 2035 long-range objectives into concrete, quantifiable assumptions. Third, by presenting results along five policy-relevant dimensions within a single internally consistent model, it offers an integrated diagnostic of the path dependence and reform space that characterize China's transition toward 2035.

## 2. Literature Review

### 2.1 The Concept and Connotation of High-Quality Development

High-quality development has become the defining strategic orientation of China's economic policy in the new era. The concept was first articulated at the 2017 Central Economic Work Conference, where it was characterized as "development that can well satisfy the people's growing needs for a better life, development that embodies the new development philosophy, and development in which innovation becomes the primary driving force, coordination an intrinsic feature, green the universal form, openness the necessary path, and sharing the fundamental purpose." This formulation was subsequently deepened in the reports of the 19th and 20th Party Congresses, and has been progressively operationalized in successive five-year plans, with the forthcoming

15th Five-Year Plan framing high-quality development in terms of cultivating new quality productive forces, deepening the integration of the digital and real economies, and pursuing a comprehensive green transition of economic and social systems (Zhang and Bi, 2022).

The academic literature has contributed a rich theoretical elaboration of this concept. A broad consensus has emerged that high-quality development is not simply a deceleration of headline growth, but rather a systemic transition involving development paradigm, growth drivers, and macroeconomic governance. From the paradigm perspective, Jin (2018) argues that the essence of high-quality development lies in achieving a “desirable state” of the economic system——one that reconciles efficient resource allocation with ecological inclusiveness. Hong (2026) identifies the development of new quality productive forces as its core, emphasizing that science and technology innovation should lead the comprehensive upgrading of the modernized industrial system. In terms of growth dynamics, Ren and Wen (2018) contend that the macroeconomic substance of high-quality development consists in moving away from extensive factor-input-driven expansion toward improvements in total factor productivity, while Liu (2024) further argues that digital new quality productive forces have become the key engine for empowering the real economy and breaking through structural bottlenecks. From a governance perspective, Gao et al. (2020) stress that the corresponding macroeconomic policy focus must shift from short-term demand management to long-term structural governance. Taken together, these contributions suggest that high-quality development is intrinsically multi-dimensional, embedding technological innovation spillovers, industrial structural upgrading, and environmental sustainability within a single coherent framework.

**2.2 Empirical Assessments of China’s Transition toward High-Quality Growth**

A substantial empirical literature has sought to measure and evaluate the progress of China’s transition toward high-quality development. Early contributions focused on constructing quantitative frameworks for growth quality and structural optimization (Li et al., 2019), often adopting green total factor productivity (GTFP) as a single-indicator proxy at the regional or urban level (Pan et al., 2021). Recognizing the multi-dimensional nature of the concept, subsequent studies have developed composite indicator systems organized around the five new development concepts—innovation, coordination, green, openness, and sharing (Jiang et al., 2021). Empirical results from these systems indicate that China’s overall level of high-quality development has followed a steady upward trend (Yang and Zhang, 2021), while exhibiting pronounced regional heterogeneity and spatial clustering (Zhang et al., 2022), with a descending gradient from the eastern to the western regions (Chen et al., 2020) and persistent urban–rural imbalances (Wang et al., 2022). More recent work has incorporated digital economy development and technological innovation as key driving-layer indicators within integrated accounting frameworks that also cover clean production and green transition (Zheng and He, 2022), while another strand has examined the nonlinear effects of capital allocation efficiency on composite high-quality development indices (Liu and He, 2024). Taken together, this body of work provides a methodologically solid foundation for diagnosing where China currently stands, but it is predominantly retrospective and descriptive in nature.

### 2.3 Input–Output Analysis as the Structural Foundation for Studying High-Quality Development

Because high-quality development is fundamentally a structural phenomenon, input-output (IO) analysis—a cornerstone of national accounting and of the modern empirical study of economic structure — provides the natural analytical foundation. IO frameworks systematically capture inter-industry linkages, technological structure, demand composition, and factor usage, and are therefore uniquely suited to the structural diagnostics that high-quality development requires (Ni and Tian, 2023). A rich and rapidly expanding literature has exploited IO techniques to illuminate different facets of China's structural transformation.

On industrial coordination, Peng and Kuang (2019) construct unilateral and composite integration indices from international IO tables to examine the convergence of manufacturing and producer services. Tang et al. (2022) adopt a global-value-chain perspective to document the heterogeneous effects of input servitization on manufacturing carbon emissions. On the digital transformation, Song et al. (2022) build a digital-industrialization adjustment coefficient from IO tables to identify the mechanisms through which digital technology raises total factor productivity, and Qiao and Ma (2024) propose an IO-based measurement framework for new quality productive forces, providing empirical evidence that digital factor inputs significantly drive production efficiency. On sustainability, Wang et al. (2020) develop a multi-regional input–output optimization model to balance industrial restructuring with employment, energy, water, and emissions goals, while Li et al. (2023) apply structural decomposition analysis to quantify the contribution of industrial restructuring to pollution abatement and economic upgrading within coupled socio-economic and water-resource systems. The release of the 2023 national input–output table—— expanded to 211 sectors and reflecting substantial integration of multi-source statistical data——now offers an unprecedented empirical foundation to revisit these questions with improved timeliness and resolution, and underpins the present study as well.

### 2.4 From Input–Output Analysis to Forward-Looking Structural Modeling

The IO tradition has also given rise to a family of analytical extensions designed to address questions that naturally arise once the structural foundations of an economy are in place. Social accounting matrices (SAMs) extend the IO framework to incorporate income circulation among institutions, and CGE models, built on SAM foundations, embed optimizing behavior, factor-market adjustment, and dynamic accumulation into this structural architecture. CGE approaches thus complement rather than substitute for IO analysis: they preserve the detailed structural information that only IO tables can provide, and at the same time allow researchers to conduct internally consistent forward-looking scenario analysis under alternative policy and external-environment assumptions. For medium-term to long-term policy questions such as the trajectory of China's high-quality development through 2035, this extended toolkit is particularly well suited, because it can accommodate price-induced substitution, income feedbacks, and intertemporal adjustments within the same structural framework that IO analysis establishes.

Within the Chinese context, CGE models anchored on successive IO benchmarks have long played an important role in medium-term and long-term economic, energy, and environmental analysis, and have repeatedly proven their value as companion tools to IO-based structural diagnostics (e.g., Li et al., 2019). Applications calibrated on the most recent 2023 benchmark, however, remain scarce, and systematic use of such frameworks to jointly characterize the multiple dimensions of high-quality development—growth drivers, demand rebalancing, supply-side upgrading, inclusive growth, and decarbonization—is, to our knowledge, remaining scarce.

**2.5 Research Gap and the Positioning of This Study**

Two natural extensions of the existing literature therefore emerge. First, while the measurement literature has produced a rich array of composite indices, it is predominantly retrospective and descriptive, and the forward trajectory of China's transition—particularly under the distinct policy configurations envisaged for the 15th Five-Year Plan and the 2035 long-range objectives—remains to be characterized in a structurally consistent manner. Second, while IO-based structural analysis has clarified the mechanics of past structural change, the forward-looking policy question of how the multiple dimensions of high-quality development would jointly evolve under alternative reform paths calls for the further deployment of IO-rooted structural modeling tools such as SAM- and CGE-based frameworks.

The present study contributes along both lines. Taking the 2023 national input–output table as the empirical foundation, we construct an updated social accounting matrix and recalibrate the DRCCGE model on this new benchmark. We then design a baseline scenario and a high-quality development scenario to 2035, and use the model to generate internally consistent projections across five policy-relevant dimensions: macroeconomic growth and its drivers, demand-side rebalancing, supply-side structural upgrading, inclusive growth, and energy and emissions. By building directly on the structural foundation provided by the IO tradition, the analysis complements the existing measurement literature and offers an integrated forward-looking diagnostic of the path-dependence and reform space of China's transition toward 2035.

## 3. Methodology and Data

### 3.1 The DRC-CGE Model

The empirical analysis is based on the DRC-CGE model, a computable general equilibrium model developed at the Development Research Center of the State Council to capture the structural features of the Chinese economy. Building on the Walrasian general equilibrium tradition (Shoven and Whalley, 1984), the model characterizes producers' cost-minimizing choices of intermediate inputs and primary factors, households' utility-maximizing allocation between consumption and savings, and the clearing of commodity and factor markets under a consistent set of equilibrium prices. Detailed documentation of the model's theoretical structure, calibration procedure, and dynamic recursive mechanism can be found in Zhai, Li and Feng (1997, 1999); only the features most relevant to the present analysis are summarized below.

Production is represented by a multi-level nested CES structure that successively decomposes sectoral output into a value-added-energy bundle and non-energy intermediate inputs, and further separates labor by skill, capital, land and energy, thereby allowing differentiated substitution elasticities across inputs. A vintage-capital assumption distinguishes homogeneous new capital from sector-specific old capital, capturing adjustment rigidities in the capital market. Foreign trade follows the Armington assumption on the import side and a CET specification on the export side, with tariffs, import-linked taxes, export rebates and the exchange rate bridging domestic and world prices. Household demand is represented by an Extended Linear Expenditure System (ELES), while government consumption, investment and inventory changes follow fixed-share expenditure functions. The model adopts a neoclassical macro closure, in which aggregate investment is savings-driven, government expenditure and tax rates are exogenous, and the real exchange rate adjusts to clear the external account under an exogenous foreign capital inflow. Dynamics are introduced recursively through capital accumulation, exogenous growth in skill-specific labor supply, and Hicks-neutral total factor productivity. An environmental extension links emissions to intermediate use, sectoral output and final consumption, providing an interface for assessing the environmental implications of policy scenarios.

### 3.2 The 2023 Social Accounting Matrix

The model is calibrated to a Social Accounting Matrix (SAM) for China in 2023 constructed by the authors from the national input-output table, the flow-of-funds accounts, the balance-of-payments statistics and household surveys. A macro-SAM is first compiled to provide control totals and is then disaggregated into a micro-SAM that supports model calibration.

The **macro-SAM** follows the standard ten-account structure covering commodities, activities, labor, capital, households, enterprises, government, the rest of the world, the capital account and inventories. Entries taken directly from the input-output table, together with transfers, taxes and savings inferred from the flow-of-funds and balance-of-payments accounts. The resulting totals are fully balanced across accounts and broadly consistent with the national accounts, confirming the reliability of the macro-SAM as a benchmark for the micro-level disaggregation.

The **micro-SAM** disaggregates the macro accounts along three dimensions. Commodities and activities are defined according to the 42-sector version of the 2023 IO table; although 153-sector and 211-sector tables offer finer granularity, the 42-sector classification is adopted because it can be consistently matched with flow-of-funds, tax and household-survey data, striking a balance between analytical resolution and data availability. Labor is divided into three skill groups: low-, medium- and high-skilled following the ILO occupational classification adapted to Chinese conditions, corresponding respectively to workers with junior-secondary education or below (including agricultural and ordinary manufacturing workers), those with senior-secondary or junior-college education (technical workers and routine white-collar employees), and those with a bachelor's degree or above (professionals and managers). Households are split into urban and rural groups, in line with China's dual economic structure and the statistical conventions of household surveys. The resulting micro-SAM is a 95×95 matrix (excluding the summary row and column), comprising 42 commodity, 42 activity, 3 labor, 1 capital, 2 household, 1 enterprise, 1 government, 1 rest-of-the-world, 1 capital and 1 inventory accounts. This design supports sectoral policy analysis at the 42-industry level, enables the examination of urban-rural disparities in income distribution and of skill-biased technical change in the labor market, and provides the parameter basis for calibrating the DRC-CGE model used in the remainder of the paper. The full micro-SAM is available from the authors upon request.

## 4. Scenario Design

### 4.1 Rationale for Scenario Construction

The design of scenarios in this study departs from the conventional *baseline-optimistic-pessimistic* trichotomy that is widely adopted in CGE-based forward-looking analyses. Instead, we adopt a two-scenario framework consisting of a **Baseline Scenario** and a **Higher-Quality Development Scenario**, in which elements conventionally attributed to the "pessimistic" case are absorbed into the baseline. This choice is motivated by a comprehensive assessment of the external environment and the internal conditions that China is expected to face during the 15th Five-Year Plan period (2026–2030) and in the longer run towards 2035.

The first consideration is that uncertainty has become the defining feature of the global environment. The protracted nature of geopolitical tensions, including the Ukraine crisis and the Israel-Palestine conflict, combined with fragile post-pandemic recovery, elevated sovereign debt in several advanced economies, the resurgence of trade protectionism, and the accelerating regionalization of global value chains, implies that external shocks are likely to recur with unpredictable frequency and intensity. Under such circumstances, the world economy is expected to remain in a prolonged regime of "slow growth, high volatility and low trust". Treating this complex and uncertain external environment as the *baseline state* rather than as a downside deviation from a more benign reference path, more accurately reflects the structural reality that China is likely to confront over the medium to long term.

The second consideration concerns domestic fundamentals. Although the Chinese economy is navigating the "three-phase superposition" of a growth-rate transition, structural adjustment pains, and the absorption of earlier stimulus policies, and although it is confronted with demand contraction, weakening expectations and latent risks, its medium-term and long-term prospects remain underpinned by solid fundamentals: an ultra-large domestic market, a complete industrial system, rising indigenous innovation capacity, the expansion of the digital and green economies, a rich toolkit of macroeconomic policy instruments, and strong institutional implementation capacity. The ongoing construction of a unified national market, the cultivation of new quality productive forces, and the continuous improvement of the business environment are expected to unlock further reform dividends. These conditions provide a solid foundation for China to maintain moderately high growth and achieve sustained socio-economic development even in a challenging external environment.

Against this backdrop, the baseline scenario is designed to reflect a *"risk-normalized"* world in which the external environment remains tight and global growth stays weak, while China continues its pursuit of stability-oriented progress and maintains a moderate growth pace amid deepening reforms and structural adjustment. The contrasting *Higher-Quality Development* scenario, in turn, depicts a plausible trajectory along which China actively leverages key reforms and institutional innovations to realize a qualitative leap—advancing higher-level opening-up, fostering new quality productive forces, promoting common prosperity, and assuming greater international responsibility in climate governance, digital rule-making and green development. This scenario embodies the strategic choice of proactive agency under uncertainty and provides a policy-relevant benchmark for assessing the pathway towards the long-range objective of basically realizing socialist modernization by 2035.

## 4.2 Scenario Specification

The two scenarios share a common set of exogenous assumptions and differ in the configuration of policy- and reform-related parameters. The detailed specification is summarized in Table 1.

Table 1. Scenario Design for China's Socio-Economic Development Prospects

| Category | Specification |
|---|---|
| Common assumptions *(applied to all scenarios)* | (1) Total population follows an exogenous trajectory based on United Nations projections; (2) the growth of the aggregate labor force and the supply of agricultural land are treated as exogenous; (3) unless otherwise specified, existing tax rates and transfer-payment schemes remain unchanged; (4) the balance of payments is assumed to move gradually towards equilibrium over 2026-2035. |
| Baseline Scenario | (1) The urbanization rate and the urban–rural population split are exogenous, with the urbanization rate rising to 75% by 2035; (2) the growth of the aggregate labor force and the change in agricultural land supply are exogenous; (3) the growth rate of government consumption is exogenous; (4) the investment rate follows an exogenous path and declines to 30% by 2035; (5) total factor productivity (TFP) is exogenous, with its annual growth rate maintained at around 1.5% over 2025-2035; (6) the factor bias of technical progress and the change in intermediate-input coefficients are exogenous. |
| Higher-Quality Development Scenario | (1) *Innovation-driven growth:* annual TFP growth is maintained within the range of 1.5%-1.7%; (2) *Domestic-demand-led pattern:* the government sustainably increases fiscal expenditure on basic public services such as education and health care; (3) *Upgrading of urbanization quality:* urbanization shifts from scale expansion to quality improvement, the citizenization of rural migrants accelerates, and the resident-population urbanization rate rises steadily to nearly 80%; (4) *Advancing common prosperity:* the distribution system is adjusted, with government transfer payments to poor regions and low-income groups raised by 10%–15% relative to the baseline over 2026-2035; (5) *Deepening green development:* the energy mix continues to be optimized, with the share of non-fossil energy in primary energy consumption rising to 30%. |

Building on this scenario framework, the following sections present systematic simulations of economic growth, structural evolution, demographic dynamics, employment and income, and the green transition. The comparison between the two scenarios is intended to illuminate the quantitative implications of alternative policy choices and to inform strategic planning for the 15th Five-Year Plan period and the broader trajectory towards 2035.

# 5. Simulation Results

This section presents the simulation outcomes under the two scenarios defined in Section 4. We first characterize the baseline trajectory, focusing on growth momentum, demand composition, structural transformation, household income and the energy-emissions nexus, and then turn to the Higher-Quality Development Scenario, where the emphasis shifts to the comparative gains arising from innovation-driven growth, balanced industrial upgrading, inclusive income distribution and accelerated green transition.

## 5.1 The Baseline Scenario

### 5.1.1 Deceleration of Potential Growth and a Sluggish Transition of Growth Drivers

Under the baseline scenario, China's potential growth rate is projected to decelerate steadily between the 15th Five-Year Plan period and 2035. As reported in Table 2, average annual GDP growth is expected to moderate from 5.24% in 2023–2025 to 4.40% in 2025-2030, and to decline further to 3.70% in 2030–2035. This trajectory is consistent with the standard convergence pattern observed in late-industrializing economies and reflects the combined effects of a shrinking labor force, diminishing capital deepening and an incomplete transition towards productivity-led growth.

Table 2. Economic Growth and Its Sources under the Baseline Scenario, 2023-2035 (%)

| | **2023–2025** | **2025–2030** | **2030–2035** |
|---|---|---|---|
| GDP growth | 5.24 | 4.40 | 3.70 |
| *Contribution of:* | | | |
| Labour | −0.60 | −0.80 | −0.90 |
| Capital | 4.34 | 3.75 | 3.11 |
| TFP | 1.50 | 1.50 | 1.51 |

The deceleration is underpinned by a profound reconfiguration of growth drivers. On the supply side, capital accumulation slows as the demographic dividend erodes: the dependency ratio rises, aggregate savings decline, and the capital formation rate falls from 40.7% of GDP in 2023 to 36.1% in 2035. Although capital continues to provide the largest contribution to growth, the annual growth rate of the capital stock is expected to fall from around 8% during the 14th Five-Year Plan period to approximately 6% during the 15th Five-Year Plan period. Labor input contributes negatively throughout the projection horizon, reflecting persistent population decline and ageing. The TFP growth rate remains around 1.5%, so that productivity gains rise only gradually in relative importance and fall short of replacing capital as the dominant driver of growth. On the demand side (Table 3), household consumption steadily emerges as the principal growth engine, with its share of GDP rising from 39.2% in 2023 to 45.0% in 2035. The share of capital formation declines from 40.7% to 36.1%, while net exports contract to a negligible level as the external environment tightens. The simultaneous slowdown of exports and investment implies that although the composition of domestic demand is improving, the new drivers associated with innovation, services and consumption upgrading are not yet sufficient to fully offset the weakening of traditional engines.

Table 3. Expenditure Composition of GDP under the Baseline Scenario (%)

| | **2023** | **2025** | **2030** | **2035** |
|---|---|---|---|---|
| Household consumption | 39.2 | 40.6 | 41.7 | 45.0 |
| Government consumption | 17.3 | 18.2 | 18.5 | 18.5 |
| Gross capital formation | 40.7 | 40.0 | 39.1 | 36.1 |
| Net exports | 2.8 | 1.2 | 0.7 | 0.4 |

The transition is also reflected in **sectoral structure** (Table 4). The share of the tertiary sector in GDP rises by approximately 11 percentage points over the projection period, from 54.85% in 2023 to 63.70% in 2035, while that of the secondary sector declines from 36.75% to 32.44%. This structural shift is driven by the maturation of industrialization, the slowing demand for capital goods and intermediate inputs, and the rising share of service consumption, particularly elderly-care and health-related services, associated with demographic change and income growth. Because productivity growth in services is typically slower than in manufacturing, the relative price of services tends to rise, further amplifying the tertiarization observed in nominal terms (the Baumol effect). Employment shifts are even more pronounced: the share of the primary sector in total employment nearly halves, from 23.60% to 12.53%, whereas tertiary employment rises from 47.70% to 59.23%. The secondary sector's employment share remains broadly stable at 28%–30%.

Table 4. Sectoral Composition of GDP and Employment under the Baseline Scenario (%)

| | **GDP** | | | | **Employment** | | | |
|---|---|---|---|---|---|---|---|---|
| | 2023 | 2025 | 2030 | 2035 | 2023 | 2025 | 2030 | 2035 |
| Primary | 8.40 | 6.00 | 4.75 | 3.85 | 23.60 | 17.51 | 14.74 | 12.53 |
| Secondary | 36.75 | 35.90 | 33.95 | 32.44 | 28.70 | 29.68 | 29.19 | 28.24 |
| Tertiary | 54.85 | 58.10 | 61.30 | 63.70 | 47.70 | 52.81 | 56.07 | 59.23 |

#### 5.1.2 Steady Growth in Urban and Rural Household Incomes with Stable Disparities

Sustained economic growth translates into steady income gains for both urban and rural households. Per-capita urban disposable income is projected to rise from approximately 55,275 yuan in 2023 to 133,521 yuan in 2035, while rural per-capita disposable income reaches 51,271 yuan by 2035. The urban–rural income ratio remains stable within a narrow range of 2.5-2.65, reflecting the offsetting effects of continued rural-to-urban migration, rising wages of transferred rural labor and steady productivity gains in agriculture. Consumption expenditures follow a parallel upward trajectory: urban per-capita consumption rises from about 33,512 yuan in 2023 to 88,622 yuan in 2035, while rural per-capita consumption increases from 16,015 yuan to 38,472 yuan, highlighting the continued release of rural consumption potential.

#### 5.1.3 Improving Energy Efficiency but Insufficient to Meet More Ambitious Climate Goals

Total energy consumption under the baseline scenario continues to expand, rising from 4.98 billion tons of standard coal equivalent (tce) in 2023 to about 6.02 billion tce in 2025 and further to 7.25 billion tce in 2035 (Table 5). Energy intensity, however, improves markedly: energy consumption per 10,000 yuan of GDP declines from 0.50 tce in 2023 to 0.35 tce in 2035, a cumulative reduction of about 30%. These efficiency gains are driven chiefly by the tertiarization of the economy and the diffusion of energy-saving technologies across sectors. Nevertheless, the depth of structural optimization remains limited: within manufacturing, the share of energy-intensive industries declines only gradually, which constrains the pace of efficiency improvement and sustains a sizeable aggregate energy demand.

In terms of emissions, $CO_2$ emissions rise from 11.19 billion tons in 2023 to a peak of 12.98 billion tons around 2030 and decline slowly thereafter to 12.73 billion tons by 2035. This trajectory is consistent with China's Nationally Determined Contribution commitment of peaking $CO_2$ emissions before 2030, but the post-peak decline is modest. Emission intensity falls more decisively, from 1.11 tons per 10,000 yuan of GDP in 2023 to 0.62 tons in 2035, a reduction of over 44%. Taken together, these results suggest that baseline conditions are compatible with the 2030 peaking commitment but fall short of supporting more ambitious mid-century targets.

Table 5. Energy Consumption and Greenhouse Gas Emissions under the Baseline Scenario

| | **2023** | **2025** | **2030** | **2035** |
|---|---|---|---|---|
| $CO_2$ emissions (Mt) | 11,192 | 12,568 | 12,979 | 12,734 |
| $CO_2$ intensity (t per $10^4$ yuan of GDP) | 1.11 | 0.97 | 0.79 | 0.62 |
| Energy consumption ($10^4$ tce) | 498,314 | 601,736 | 672,218 | 724,936 |
| Energy intensity (tce per $10^4$ yuan of GDP) | 0.50 | 0.46 | 0.41 | 0.35 |

### 5.2 The Higher-Quality Development Scenario

#### 5.2.1 TFP as the Core Engine of Growth

Under the Higher-Quality Development Scenario, average annual GDP growth is projected at approximately 4.70% in 2025-2030 and 4.00% in 2030-2035, exceeding the baseline by roughly 0.3 percentage points in each sub-period (Table 6). The additional momentum is almost entirely attributable to faster productivity growth: TFP growth rises from 1.50% in 2023-2025 to 1.85% in 2025-2030 and 1.90% in 2030-2035, while its contribution share increases from about 29% to around 40% by the end of the projection horizon, roughly 10 percentage points higher than in the baseline. These gains reflect the diffusion of artificial intelligence and other general-purpose technologies, deepening digitalization, and the broader cultivation of new quality productive forces envisaged in the scenario design.

Table 6. Economic Growth and Its Sources under the Higher-Quality Development Scenario, 2023-2035 (%)

| | **2023–2025** | **2025–2030** | **2030–2035** |
|---|---|---|---|
| GDP growth | 5.24 | 4.70 | 4.00 |
| *Contribution of:* | | | |
| Labor | −0.60 | −0.80 | −0.90 |
| Capital | 4.34 | 3.60 | 3.00 |
| TFP | 1.50 | 1.85 | 1.90 |

The demand-side structure (Table 7) shifts more decisively towards consumption. The household consumption share rises to 46.6% by 2035 (versus 45.0% in the baseline), government consumption reaches 20.0% (reflecting the expansion of basic public services), while the share of capital formation falls to 33.0%, three percentage points below the baseline. The combination of a lower investment rate with stronger growth implies a lower incremental capital-output ratio (ICOR), evidencing substantial gains in investment efficiency. Three mechanisms underpin this improvement: the reallocation of capital towards high-technology manufacturing and modern services; the efficiency-enhancing effects of digital transformation; and the reduction of resource misallocation through market-oriented reforms and business-environment optimization. Collectively, these findings signal a substantive transition from factor-input-driven to innovation- and efficiency-driven growth, aligning more closely with the intrinsic requirements of high-quality development.

Table 7. Expenditure Composition of GDP under the Higher-Quality Development Scenario (%)

| | **2023** | **2025** | **2030** | **2035** |
|---|---|---|---|---|
| Household consumption | 38.2 | 40.6 | 43.2 | 46.6 |
| Government consumption | 17.3 | 18.2 | 19.1 | 20.0 |
| Gross capital formation | 41.7 | 40.0 | 37.0 | 33.0 |
| Net exports | 2.8 | 1.2 | 0.7 | 0.4 |

### 5.2.2 A More Balanced Evolution of Industrial Structure

The Higher-Quality Development Scenario features a more balanced and sustainable pattern of structural transformation (Table 8). By 2035, the tertiary sector accounts for 65.37% of GDP, slightly higher than in the baseline, while the secondary sector remains at 31.77%, also marginally above the baseline. Crucially, the path towards a service-dominated economy does not come at the expense of manufacturing; rather, it is achieved through the upgrading of manufacturing towards higher-end, smart and green segments. The primary sector's value-added share declines to 2.87%, while its employment share falls to 9.32%, implying a substantial improvement in agricultural labor productivity relative to the baseline (where the corresponding figures are 3.85% and 12.53%).

Employment dynamics are particularly notable. The secondary sector retains a stable employment share of around 29% through 2035, contrasting with the gradual decline observed in the baseline. This reflects the job-creating potential of advanced manufacturing, which, combined with the expansion of modern services (tertiary employment rising to 61.57%), translates into a virtuous co-movement between industrial upgrading and employment quality. Such a pattern mitigates the risk of premature deindustrialization and provides a firmer foundation for a modernized industrial system.

Table 8. Sectoral Composition of GDP and Employment under the Higher-Quality Development Scenario (%)

| | GDP | | | | Employment | | | |
|---|---|---|---|---|---|---|---|---|
| | 2023 | 2025 | 2030 | 2035 | 2023 | 2025 | 2030 | 2035 |
| Primary | 8.40 | 6.00 | 4.30 | 2.87 | 23.60 | 17.51 | 13.13 | 9.32 |
| Secondary | 36.75 | 35.90 | 33.65 | 31.77 | 28.70 | 29.68 | 29.73 | 29.11 |
| Tertiary | 54.85 | 58.10 | 62.04 | 65.37 | 47.70 | 52.81 | 57.14 | 61.57 |

### 5.2.3 Accelerated Convergence of Urban and Rural Incomes

The income distribution outcomes under the Higher-Quality Development Scenario exhibit markedly greater inclusiveness. Rural per-capita real income is projected to reach 68,927 yuan by 2035, some 34% higher than the corresponding baseline figure of 51,271 yuan, and its growth rate is considerably faster than that of urban income. As a result, the urban-rural income ratio falls from 2.27 in 2023 to 1.85 by 2035, a substantive improvement relative to the near-constant ratio in the baseline and a tangible step towards common prosperity.

Two mechanisms drive this convergence. First, rural income sources become increasingly diversified: accelerated urbanization raises the wage income of migrating rural labor, while skill upgrading enhances the composition of their income. Second, the combined effects of agricultural modernization and rural revitalization policies, reinforced by the scenario's 10%-15% increase in transfer payments to low-income regions and groups, boost rural operating income and property income, while a more comprehensive social security system consolidates the rural income base.

### 5.2.4 Accelerated Green and Low-Carbon Transition

The Higher-Quality Development Scenario achieves a deeper decoupling of economic growth from energy use and emissions. Total energy consumption is contained at approximately 6.93 billion tce by 2035, about 4.4% below the baseline, with the divergence widening visibly after 2030 as structural and efficiency improvements accumulate. Energy intensity declines to 0.30 tce per 10,000 yuan of GDP, 14.3% lower than in the baseline, reflecting the combined effects of deeper industrial optimization, energy-pricing reforms and the wider diffusion of energy-saving technologies.

Emission outcomes are even more pronounced. Greenhouse gas emissions peak within 2025-2030 at around 12.77 billion tons and enter a rapid downward trajectory, declining to 11.28 billion tons by 2035, 11.4% below the baseline. Emission intensity falls to 0.48 tons per 10,000 yuan of GDP, 22.6% lower than the baseline counterpart. These results indicate that the Higher-Quality Development pathway not only secures the pre-2030 peaking commitment but also lays a substantially more favorable foundation for the longer-term carbon-neutrality objective, confirming that a decisive decoupling of carbon emissions from economic growth is feasible under coordinated structural, technological and institutional reforms.

### 5.3 Synthesis

Juxtaposing the two scenarios yields three overarching observations. First, the growth differential is modest in magnitude, about 0.3 percentage points per year, yet its compositional implications are substantial, as the Higher-Quality Development Scenario accomplishes faster growth with a markedly lower investment rate, signifying a qualitative shift from extensive to intensive growth. Second, the scenario does not trade industrial depth for service expansion; on the contrary, it preserves a larger and more technology-intensive secondary sector that continues to absorb employment, thereby mitigating the structural pressures identified in the baseline. Third, the scenario simultaneously delivers stronger distributive and environmental outcomes: the urban-rural income gap narrows appreciably, and carbon emissions peak earlier and decline faster. Collectively, these findings suggest that the *growth-equity-environment* trilemma can be loosened, though not eliminated, through a coordinated policy package that combines innovation-driven productivity gains, redistributive public spending and a sustained green transition.

## 6. Conclusions and Policy Implications

### 6.1 Main Conclusions

Building on the scenario design in Section 4 and the quantitative results in Section 5, this study compares a *Baseline Scenario* — one that internalizes persistent external headwinds and the structural frictions of China's growth transition — with a *Higher-Quality Development Scenario* that captures the cumulative effects of deepened reform, higher-level opening-up and strengthened innovation. The juxtaposition of the two trajectories supports four evidence-based conclusions.

First, the growth slowdown is structural, but its pace and quality are policy-contingent. The baseline points to an almost mechanical deceleration of GDP growth from 5.24% in 2023-2025 to 3.70% in 2030-2035, with capital accumulation still accounting for the bulk of growth (3.11 out of 3.70 percentage points in the final sub-period) and TFP growth stagnating at roughly 1.5%. Under the Higher-Quality Development Scenario, by contrast, GDP growth is sustained at 4.70% and 4.00% in the two sub-periods respectively, driven by an increase in annual TFP growth to 1.85%-1.90% and a rise in the TFP contribution share from about 29% to around 40%. The additional 0.3 percentage points of annual growth are therefore not delivered by more inputs but by higher efficiency: capital's contribution actually declines, while the investment rate falls from 36.1% (baseline) to 33.0%, implying a substantially lower incremental capital-output ratio. The policy-relevant message is that the deceleration cannot be reversed by stimulus but can be meaningfully softened, and qualitatively transformed, by productivity-enhancing reforms.

Second, a more balanced industrial structure is compatible with, and indeed reinforces, a consumption-led demand pattern. The baseline exhibits a classic tertiarization trajectory, with the tertiary share of GDP rising to 63.7% and the secondary share falling to 32.4% by 2035, accompanied by a gradual contraction of secondary employment. The Higher-Quality Development Scenario delivers a similar tertiary share (65.4%) while retaining a larger and more technology-intensive secondary sector (31.8% of GDP) and, crucially, preserving the secondary sector's employment share at 29.1%, against 28.2% in the baseline. Simultaneously, household and government consumption shares rise to 46.6% and 20.0% respectively, three to four percentage points above the baseline. These results indicate that the apparent tension between "manufacturing depth" and "service-led growth" can be resolved through the upgrading of advanced manufacturing and the expansion of modern producer and public services, thereby avoiding the premature-deindustrialization risks latent in the baseline path.

Third, inclusive outcomes depend on distinct policy levers rather than on growth alone. In the baseline, the urban–rural income ratio remains essentially flat at 2.5-2.65, even as both urban and rural incomes grow steadily. Only under the Higher-Quality Development Scenario, which incorporates a 10%-15% increase in transfer payments to low-income regions and groups, faster citizenization of rural migrants, and expanded basic public services, does the ratio fall meaningfully to 1.85 by 2035, while rural per-capita real income reaches 68,927 yuan, approximately 34% above the baseline counterpart. Inclusive growth therefore emerges as the product of deliberate redistributive design, not as a by-product of aggregate expansion.

Fourth, a more ambitious climate trajectory requires the Higher-Quality Development pathway to be activated, not merely envisaged. The baseline complies with China's pre-2030 peaking commitment (with $CO_2$ emissions peaking at 12.98 billion tons around 2030), but post-peak emissions decline slowly to 12.73 billion tons in 2035, and energy consumption continues to expand to 7.25 billion tce. Under the Higher-Quality Development Scenario, emissions peak earlier (within 2025-2030) at a lower level of about 12.77 billion tons and decline to 11.28 billion tons by 2035, 11.4% below the baseline, while energy intensity falls to 0.30 tce per 10,000 yuan of GDP and $CO_2$ intensity to 0.48 tons per 10,000 yuan of GDP (22.6% lower than the baseline). The decoupling between growth and emissions is thus not an automatic consequence of tertiarization; it materializes only when structural optimization is reinforced by energy-price reform, the diffusion of low-carbon technologies and a coherent carbon-governance framework.

Taken together, the simulations suggest that the so-called *growth-equity-environment* trilemma is not a binding constraint over the 15th Five-Year Plan horizon. The additional 0.3 percentage points of annual growth, the 0.42-point reduction in the urban-rural income ratio, and the 11.4% reduction in aggregate $CO_2$ emissions can, according to the model, be achieved simultaneously, provided that the underlying policy bundle is implemented in a coordinated fashion.

**6.2 Policy Implications**

Grounded in the quantitative contrasts documented above, five mutually reinforcing policy priorities can be identified.

**1. Elevating TFP to the status of primary growth driver.** The simulation implies that raising average TFP growth by roughly 0.35-0.40 percentage points is the single most consequential lever, accounting for essentially the entire growth differential between the two scenarios. Achieving such a gain requires sustained investment in basic research, stronger science-industry linkages, a robust role for private firms and market mechanisms in technology commercialization, and the removal of institutional frictions that slow the diffusion of general-purpose technologies such as artificial intelligence and advanced digital infrastructure. The objective is to convert the new quality productive forces from a policy slogan into a measurable productivity dividend.

**2. Anchoring the shift from investment-led to consumption-led demand.** The scenario results show that a 3-percentage-point reduction in the investment rate is consistent with faster, not slower, growth when accompanied by gains in allocative efficiency. This underscores the need to expand the middle-income group, strengthen the supply of developmental services (education, health care, elderly care) and reinforce social safety nets, measures that raise the marginal propensity to consume and reduce precautionary saving. Public investment should increasingly be directed towards human-capital formation and public-good provision rather than towards traditional physical capital deepening, in order to sustain the improvement in investment efficiency reflected in the lower ICOR.

**3. Pursuing industrial upgrading without premature deindustrialization.** The higher secondary-sector share and employment stability observed in the Higher-Quality Development Scenario rest on the continued upgrading of manufacturing towards higher-end, smart and green segments, and on the co-development of advanced manufacturing and modern producer services. Industrial policy should therefore focus on strengthening innovation ecosystems around strategic industries, accelerating the digital and intelligent transformation of traditional sectors, and safeguarding the international competitiveness of China's industrial base amid ongoing supply-chain reconfiguration.

**4. Operationalizing common prosperity through concrete distributive instruments.** Because the urban-rural convergence observed in the Higher-Quality Development Scenario is explicitly driven by higher transfer payments, accelerated citizenization of rural migrants and expanded basic public services, progress towards common prosperity hinges on the tangible implementation of these instruments. Key priorities include deepening hukou reform and the equalization of basic public services, strengthening the sustainability and progressivity of the social security system, promoting rural revitalization and agricultural modernization, and facilitating non-agricultural employment opportunities for rural labor through targeted skills training.

**5. Building an integrated framework for green and low-carbon development.** The 11.4% emissions gap and 22.6% carbon-intensity gap between the two scenarios reflect gains that can only be realized through the simultaneous advancement of green technology, green finance and green institutions. This calls for an accelerated reform of energy pricing, the further development of carbon markets and environmental fiscal instruments, coordinated deployment of renewable energy and energy-storage infrastructure, and a steady rise in the share of non-fossil energy in primary energy consumption towards the 30% threshold specified in the scenario design. Domestically, these measures should be embedded in a transparent and efficient carbon-governance system; internationally, they should be complemented by active participation in global climate, digital and development-governance regimes, thereby translating domestic green transformation into a source of enhanced global public-goods provision.

### 6.3 Concluding Remarks

In summary, the comparative simulations indicate that China’s medium-term development is not bounded by a single deterministic trajectory. The Baseline Scenario describes what may be reasonably expected if existing trends persist under a “risk-normalized” external environment, whereas the Higher-Quality Development Scenario delineates what becomes attainable when coordinated reforms are deployed across the innovation, demand, distributive and environmental dimensions. The quantitative gaps between the two scenarios, in growth composition, industrial balance, income distribution and decarbonization, constitute the empirical measure of the "reform dividend" still available to China during the 15th Five-Year Plan period. Translating this dividend into realized outcomes by 2035 will require systemic thinking, anticipatory policy design and sustained implementation, and will determine whether China enters the post-2035 era on a trajectory that is not only larger in scale but also qualitatively transformed in its growth logic, distributive character and environmental footprint.

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