ISSN 2529-9824

Research article

The Reconfiguration of China's Economic Model: The Drive of New Productive Forces and Their Link to International Tensions

La reconfiguración del modelo económico chino: el impulso de nuevas fuerzas productivas y su vínculo con las tensiones internacionales

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Date of Reception: 14/12/2024

Acceptance Date: 15/01/2025

Publication Date: 20/01/2025

How to cite the article

Vázquez Rojo, J. (2025). The Reconfiguration of China's Economic Model: The Drive of New Productive Forces and Their Link to International Tensions [La reconfiguración del modelo económico chino: el impulse de nuevas fuerzas productivas y su vínculo con las tensiones internacionales]. *European Public & Social Innovation Review*, 10, 1-20. https://doi.org/10.31637/epsir-2025-1297

Abstract

Introduction: China's economic growth has slowed in the last decade and faces challenges such as demographics, the real estate crisis, and international tensions. Xi Jinping's strategy focuses on the "New Productive Forces" to promote "high-quality growth", highlighting green technologies and high-tech industries. **Methodology**: This study examines China's economic transformation and international impact through a longitudinal and descriptive analysis. **Results:** A reconfiguration is observed with a boost in manufacturing and green technologies, counteracting the decline in the real estate sector, in addition to advances in technological development and an increase in the added value provided through global value chains. However, imbalances persist with weak consumption, high levels of investment, overcapacity, and dependence on exports, especially in manufacturing. **Discussion:** These imbalances could intensify external tensions with increased sanctions and tariffs. **Conclusions:**

China has made significant progress toward modernizing its economy and developing new technological industries; it faces substantial challenges that could limit its ability to maintain sustainable and balanced growth.

Keywords: China; green growth; international imbalances; new productive forces; trade war; tech war; BRI (Belt and Road Initiative); overcapacity.

Resumen
Introducción: El crecimiento económico de China se ha desacelerado en la última década y enfrenta desafíos como la demografía, la crisis del sector inmobiliario y tensiones internacionales. La estrategia de Xi Jinping se centra en las "Nuevas Fuerzas Productivas" para promover un "crecimiento de alta calidad", destacando tecnologías verdes e industrias de alta tecnología. **Metodología:** Este estudio examina la transformación económica de China y su impacto internacional mediante un análisis longitudinal y descriptivo. **Resultados:** Se observa una reconfiguración con un impulso en manufacturas y tecnologías verdes, contrarrestando la caída en el sector inmobiliario, además de un avance en desarrollo tecnológico y un incremento en el valor añadido aportado a través de las cadenas globales de valor. Persisten los desequilibrios con débil consumo, altos niveles de inversión, sobrecapacidad y dependencia de las exportaciones, especialmente en manufacturas. **Discusión:** Estos desequilibrios podrían intensificar las tensiones externas con aumento de sanciones y aranceles. **Conclusiones:** China ha avanzado mucho en la modernización de su economía y en el desarrollo de nuevas industrias tecnológicas, pero se enfrenta a importantes retos que podrían limitar su capacidad para mantener un crecimiento sostenible y equilibrado.

Palabras clave: China; crecimiento verde; desequilibrios internacionales; nuevas fuerzas productivas; guerra comercial; guerra tecnológica; BRI (Iniciativa de la Franja y la Ruta); sobrecapacidad.

1. Introduction

China's economic growth has slowed in recent years due to various challenges, including a peak in the population and a declining real estate sector. These issues and increasing global tensions significantly hinder Beijing's economic expansion. Moreover, trade and technological tensions have intensified between China and other major powers. The US and the EU have imposed tariffs and technological restrictions on China. In recent months, the situation has been further complicated by the growth of China's green industry, as the EU and the US have accused China of dealing with its excess production by exporting it at reduced prices to other countries, resulting in significant imbalances in the global market (White House, 2024; European Commission, 2024).

The new development strategy advocated by China's President Xi Jinping focuses on developing what he calls "New Productive Forces" to promote "high-quality growth" (Jinping, 2024). This strategy involves moving away from relying on low-value-added products and fixed asset investment, especially in the real estate sector, and shifting to a model driven by manufacturing and services in emerging industries, such as the green economy.

The Chinese government aims to modernize industry, promote technological innovation, advance economic reforms and openness, improve environmental quality, and strengthen the foundations for secure and stable development. These objectives include maintaining social stability, enhancing citizens' livelihoods, and promoting high-quality growth and technological self-reliance (Li, 2024). Furthermore, China aims to enhance its infrastructure and expedite the green transformation of its economy (Roberts et al., 2020).

The debate on transforming the Chinese economic model has a long history. Since Hu Jintao's administration (2003-2013) sought to advance its vision of "scientific development" and "harmonious society", particularly after the 2008 global financial crisis, China has endeavored to restructure its production model (Vázquez, 2022). The goal has been to shift away from reliance on exports and investment and drive growth through domestic consumption and the manufacture and design of high-value goods and services.

Since Xi Jinping arrived in 2013, several initiatives have attempted to effect this change, including Dual Circulation (internal market, external resilience), Common Prosperity (equity, social welfare), Made in China 2025 (technological self-sufficiency, advanced production), and Standards 2035 (designs, technological leadership). This trend has intensified due to the imperative of productive and technological self-sufficiency in the face of US sanctions (Vázquez Rojo & Visintin, 2024).

A literature review has highlighted gaps in our understanding of how the recent economic model trend influences the Chinese economy and its impact on the global economic landscape. Some scholars, such as Du et al. (2014) and Wagner (2019, 2021), have discussed the shift from an investment-driven model to one focused on consumption and innovation. However, persistent challenges like real estate bubbles and technological restrictions remain (García-Herrero, 2022).

There are ongoing debates about the effectiveness of current policies, the balance between domestic demand and supply-side measures (Pettis, 2022; Liu, 2023a), China's reliance on investment cycles (Liu, 2024), and the imbalances that the model generates worldwide (Klein & Pettis, 2020). Interestingly, there have been no studies on the new economic trend post-COVID-19, which could potentially lead to tensions with countries such as the EU and the US. This study aims to address these gaps by examining the recent evolution of China's economic model, analyzing the drivers and characteristics of its current model, and evaluating the new trend and its global impacts.

2. Methodology

This study employs a longitudinal and descriptive approach (Diggle et al., 2002) to analyze China's economy's evolution, focusing on internal and external factors. The methodology is designed to provide a comprehensive and detailed examination of the changes in China's economic model and its international impact.

The literature review was conducted by selecting various historical and contemporary sources from academic journals, books, and reports to understand China's economic evolution comprehensively. Sources were chosen based on their relevance to the research questions and the impact of their publications. The review is organized thematically to cover different phases and aspects of China's economic development: the creation of the "world's factory" model, the limitations of the investment and export-led growth model, and the debate on the future of China's economic model.

This thematic organization allowed for a systematic examination of key developments and ongoing debates. Each source was critically evaluated for its contribution to understanding China's economic model, assessing the methodologies used by authors and the robustness of their arguments. The review employs a multi-disciplinary approach, integrating economic theory, political economy, and development studies to analyze the literature comprehensively.

This synthesis of findings constructed a coherent narrative aligned with the research objectives, identifying gaps in the existing literature and guiding the formulation of research questions and objectives for this study. The macroeconomic data was selected from reliable sources, including the National Bureau of Statistics of China (NBSC), CEIC Data, the World Bank (WB), the International Energy Agency (IEA), the Organisation for Economic Co-operation and Development's (OECD) Trade in Value Added database (TiVA), the International Monetary Fund (IMF), the International Trade Statistics Database (COMTRADE) of the United Nations, the American Enterprise Institute (AEI), the World Intellectual Property Organization (WIPO), and Fitch Ratings.

The analysis involved using descriptive and trend analysis methods, focusing on time series analyses to gain insights into the changes in economic variables over time. This method allowed for the recognition of long-term patterns and trends over the period under study. The results show the growth of GDP and the demand and supply components to track the progression of the Chinese economy. The demand components assess the shift towards a consumption-driven economy and decreased reliance on exports and investments.

The supply components delve into the structural shift towards an economy primarily led by the service sector. In addition, we explore the country's innovation and technology developments and the industry's capacity utilization. Furthermore, the study delves into external connections through exports and imports, relationships with other nations, value added in global final demand, and overseas investment, explicitly emphasizing the Belt and Road initiative. The analysis of exports and imports evaluates China's global trade role and reliance on external markets. At the same time, the assessment of value-added elucidates progress towards high-value addition in the global value chain. Furthermore, it examines Foreign Direct Investment and analyzes China's trends in overseas investments, particularly within the Belt and Road initiative context.

3. Literature Review

3.1. Creation of the Model: Building the World's Factory

China was the world's largest economy until the 19th century, accounting for up to 25% of global output between 1500 and 1820 (Li, 2020). However, after lagging in the Industrial Revolution and suffering military and political defeats, China entered a "Century of Humiliation" (1839-1949), marked by international decline and extreme poverty (Doğan, 2021; Vázquez Rojo, 2022). China's per capita GDP relative to the world average fell from 61% in 1870 to 21% in 1950 (Li, 2020).

The Chinese Communist Party (CCP) victory in 1949 ended this period. The first thirty years of the People's Republic of China (PRC) saw the formation of a Soviet-style planned economy, collectivization of agrarian property, and rapid industrialization (Molero-Simarro, 2014; Vázquez, 2022). Despite setbacks from the Great Leap Forward and the Cultural Revolution, the economy grew, with an average annual GDP growth rate of 4.4% and per capita income doubling in 30 years (Li, 2020; Doğan, 2021).

Post-1949, China remained isolated from the global capitalist system for three decades. In the late 1970s, the authorities opened up to the outside world to boost economic growth and improve their international position (Molero-Simarro, 2014; Li, 2020; Doğan, 2021).

To access Western technology and reduce the development gap with East Asian neighbors, China opened to international trade and attracted foreign investment, leveraging its abundant and inexpensive labor force, land resources, and government-provided tax incentives and infrastructure investments (Yin, 2004).

Reforms gradually introduced elements of the market economy to address productivity issues in centralized planning (Molero-Simarro, 2014). Deng Xiaoping's strategy focused on making China the "world's factory", rapidly incorporating technical knowledge to close the technological gap (Wagner, 2019). Since the 1980s, China has opened to foreign investment, liberalized prices, and partially deregulated the economy. Agricultural production was privatized, and Special Economic Zones (SEZ) were established to attract Foreign Direct Investment (FDI) (Molero-Simarro, 2014; Li, 2020; Rikap, 2021; Vázquez, 2022).

Following the events at Tiananmen Square, market reforms deepened in the 1990s. This included privatizing most small and medium-sized state-owned enterprises and gradually liberalizing some prices (Weber, 2021). Over 80% of 1998 SOEs were closed or privatized by 2007, significantly affecting state workers (Hsieh & Song, 2015; Milanović, 2019; Li, 2020). Migrant workers replaced the laid-off labor force, working in cities without social and labor rights, reducing labor costs and higher profits for firms (Molero-Simarro, 2014; Klein & Pettis, 2020; Li, 2020).

Despite privatization, the state maintained a significant role in technological development, investing in R&D in strategic sectors and supporting private companies with subsidies, tax incentives, preferential loans, and protection from foreign competition (Weber, 2021; Rikap & Lundvall, 2021). Cooperation between public research institutes and private firms facilitated technology transfer and innovation (Wagner, 2019; Doğan, 2021).

Chinese wages, between 10% and 25% of US wages for the same qualifications, accelerated offshoring and increased foreign direct investment (Li, 2017). China's 2001 entry into the World Trade Organization marked a turning point, increasing technology transfer and productivity and making its economy highly competitive. This drove high investment rates and increased low-value-added exports, with GDP growing by an average of 10% annually between 1980 and 2007 (Molero-Simarro, 2014).

By 2000, state-owned industrial enterprises accounted for 50.2% of the total sales revenue of all industrial enterprises with annual sales income of 20 million yuan or more, declining to 27.9% by 2010 and 23.4% by 2017 (Li, 2020). Despite the state's significant role, profitability prevailed, and after three decades of market reforms, China had become a capitalist economy driven by market forces (Milanović, 2019; Vázquez, 2022).

3.2. Limits of the Investment and Export-Led Growth Model

China's economic transformation since the late 1970s has been driven by an investment and export-focused growth model known as the "growth-first strategy" (Li & Ming, 2011; Du et al., 2014). This strategy enabled rapid industrialization and made China the world's second-largest economy. However, it has also created significant imbalances, such as high investment rates, large trade surpluses, and a low share of consumption in GDP (Du et al., 2014).

The 2008 global financial crisis and subsequent global demand slowdown exposed this model's vulnerabilities. Key challenges include high pollution, social and regional inequality, overcapacity due to overinvestment, and rising debt levels (Gaulard, 2018; Klein & Pettis, 2020; Vázquez, 2023).

High investment rates have generated diminishing returns and contributed to overcapacity, particularly in state-owned enterprises (Gaulard, 2018). Additionally, insufficient household purchasing power exacerbates the issue of low domestic consumption (Vázquez, 2022).

Structural imbalances also characterize China's economy. A repressed financial system channels household savings into large state-owned enterprises, promoting high investment but resulting in deficient domestic consumption (Molero-Simarro, 2014; Wagner, 2019; Klein & Pettis, 2020; Vázquez, 2022). Fiscal reforms in 1994 and growth-oriented local promotion policies have incentivized infrastructure investment and real estate development, often at the expense of domestic consumption (Germain & Schwartz, 2017). These factors have led to significant overcapacity in production and large trade surpluses, displacing global demand and reducing purchasing power in other countries (Germain & Schwartz, 2017).

Demographic challenges further threaten China's growth. The working-age population began declining in 2016, with projections indicating a reduction of 47 million people between 2010 and 2030 (WB, 2019). This shift reduces the labor force and increases labor costs, undermining the competitive advantage of low labor costs (Li, 2017; Vázquez, 2022).

The investment-led growth model has also contributed to a real estate bubble. Limited land supply and lack of investment alternatives have increased property prices, with governments relying on property development for financing (Rogoff & Yang, 2021).

In summary, China's investment—and export-led growth model faces considerable challenges threatening its economic sustainability and efficiency. Environmental degradation, social inequality, rising debt levels, demographic shifts, structural inefficiencies, and imbalances due to high investment and export dependence coupled with low domestic consumption underscore the need for a more balanced and inclusive economic strategy.

3.3. A Change of Model? Debate on the Characteristics, Evolution, and Future of the Current Chinese Model

Since Hu Jintao's presidency (2003-2013), the Chinese government has aimed to shift from an investment-driven, export-oriented growth model to one focused on consumption, services, and innovation (Du *et al.*, 2014). This transition is crucial as traditional growth drivers—expanding labor force, rapid urbanization, high investment rates, rising exports, and the real estate boom—are losing effectiveness (Vázquez, 2022).

Under Xi Jinping, initiatives like "Made in China 2025" and "China Standards 2035" were launched to promote high-quality development, emphasizing domestic consumption, technological innovation, and reducing inequality (Roberts *et al.*, 2020). Additionally, Xi's policies of "common prosperity" and "dual circulation" aim to address income disparities and balance the domestic and international economy by boosting internal demand and maintaining global integration, creating a more sustainable and resilient growth model for China's future (Vázquez, 2023).

Different authors have expressed varied perspectives on China's economic model shift. Vázquez (2022; 2023) asserts that the rebalancing of the Chinese economy toward greater domestic consumption has been modest since 2008 despite evident technological progress. The rebalancing policy prioritizes domestic consumption over investment and exports; however, investment remains dominant. Meanwhile, Zhao & Ruet (2021) observed a transition from a factor-driven phase (focused on labor and natural resources) to an investment-driven phase and, more recently, toward innovation-driven development.

They also note that the supply-side reforms introduced in 2014 aim to address overcapacity, reduce costs, and improve market efficiency. However, these reforms are more technical than structural and do not fully address the fundamental institutions of China's economic system. Furthermore, Yang *et al.* (2022) discuss China's economic growth model transitioning from rapid growth to high-quality development, heavily reliant on investment and substantial liquidity support.

Klein and Pettis (2020) and Pettis (2022) argue that China's economic policies should boost domestic consumption to rebalance internal demand between consumption and investment, relying less on exports. However, according to the authors, consumption remains lagging because the government continues to promote supply-side policies over demand-side policies, hindering the rebalancing.

Similarly, Liu (2024) discusses the persistence of the investment-driven growth model, noting that political support for the corporate sector contrasts with limited social spending, leading to cycles of overinvestment that generate new overproduction and macroeconomic imbalances. Additionally, Liu (2023a; 2023b) argues that Xi Jinping's economic policies have exacerbated China's structural problems, such as increasing debt, low domestic consumption, and adverse demographic trends.

Meanwhile, García-Herrero (2022) suggests that China's economic model is experiencing structural deceleration due to an aging population, declining productivity, and lower asset returns, exacerbated by the Covid-19 pandemic and strict "Zero Covid" policies. Despite government efforts to reopen the economy, restrictions and structural problems such as the real estate crisis and a challenging external environment, including rivalry with the US and the war in Ukraine, continue to impact growth negatively. In the long term, China is expected to grow slower, around 2% by 2030, limiting its ability to close the gap with the US economy (García-Herrero, 2022).

Similarly, the IMF (2024) argues that China faces a slowdown in growth, debt challenges, and weak domestic demand, exacerbated by low consumer confidence and insufficient private investment. Despite efforts to boost innovation and maintain its position in advanced manufacturing, productivity and innovation growth have slowed. Exports remain crucial, but trade tensions have affected their expansion. In response, the government implements fiscal and monetary stimuli to stabilize the economy and promote sustainable and balanced growth (IMF, 2024).

From another perspective, Zhao and Ruet (2021) observe a shift from a factor-driven phase (labor and natural resources) to an investment-driven phase, and more recently, towards innovation-driven development, with some success in government-implemented policies. Malkin (2020) also notes relative success in this area, arguing that China's industrial policy, mainly “Made in China 2025”, successfully challenges US dominance in global value chains. Vázquez & Visintin (2024) suggest that China has made technological progress, positioning itself as the second-largest technological power behind the US, and Vázquez (2024) suggests that China's technological development is significantly transforming global economic and geopolitical relations, especially in Africa.

Rolf (2021), and Jetin and Reyes (2020) advocate reduced export dependence and addressing environmental issues. China's current economic model, described as “Sino-Capitalism”, combines robust state control over strategic sectors with a dynamic private sector. The government addresses challenges like high debt levels and overcapacity through policies focused on innovation, technological advancement, and sustainable development.

These actions aim to reduce reliance on debt-fueled growth and foster a more balanced, resilient economic structure. While significant efforts are underway to enhance economic stability and growth, the long-term success of these measures remains uncertain due to ongoing global economic challenges (Rolf, 2024). Additionally, Liang & Li (2023) and Zheng *et al.* (2023) highlight the success of the new green model. Efforts in green industrial policy aim to achieve autonomy in new technologies, particularly in electric vehicles and renewable energy, supported by fiscal incentives, subsidies, and infrastructure development.

Conversely, Li (2023) suggests that China's economic growth is unsustainable due to significant environmental degradation. He proposes three pathways for achieving degrowth: economic collapse, resource redistribution, or strategic planning. Li advocates for a planned approach involving radical policy changes and societal reorganization as essential to achieve sustainable degrowth and prevent ecological disaster.

Moreover, Wagner (2019; 2021) argues that Xi's focus on rebalancing and centralized control could inhibit the necessary innovation. Similarly, García-Herrero & Schindowski (2023) highlight that despite significant increases in R&D spending and improvements in human capital, China has not fully realized the economic gains from its innovation efforts. They identify three main bottlenecks hindering the translation of innovation into total factor productivity (TFP) improvements. These factors and US technological containment efforts, particularly in semiconductors, have impeded China's progress in key sectors despite substantial investment since the "Made in China 2025" initiative.

On the other hand, the Belt and Road Initiative (BRI) seeks to expand China's economic influence globally through massive infrastructure investments and economic corridors, thereby exporting its development model to other regions (Zhao & Ruet, 2021). Ni et al. (2020) argue that China avoids internal adjustment by exporting overcapacity through the BRI, avoiding business closures and layoffs without boosting domestic demand. Chen and Zhang (2018) discuss China's export of overcapacity through the BRI, impacting global trade and the economies of recipient countries.

Starrs (2018) suggests that China's current economic model, characterized as state capitalism, combines significant state control over strategic sectors with heavy foreign investment. Under Xi Jinping, China has adopted a more assertive global strategy, exemplified by initiatives like the Belt and Road Initiative. However, China's efforts to reshape the global economic order face substantial challenges, including reducing dependency on foreign technology and capital and addressing inherent contradictions within its economic system.

Despite the extensive literature on China's economic transition, there are still significant gaps in understanding how recent policy shifts and external pressures affect the Chinese economy and its global interactions. This study aims to fill these gaps by examining the recent evolution of China's economic model, analyzing the drivers and characteristics of its current model, and assessing new trends and their global impacts. Specifically, it will focus on the period following the COVID-19 pandemic, a critical phase that has not been extensively covered in the existing literature. This study sheds light on the debate by addressing these questions, providing a nuanced understanding of China's economic trajectory and global implications.

4. Results

In the 1990s, China saw impressive economic growth, averaging 9.99% (NBSC, 2024). This momentum continued into the 2000s, with an average growth rate of 10.35%, driven by economic reforms and expanding international trade. The growth rate moderated to 7.68% in the 2010s as the economy transitioned to more sustainable growth, less reliant on investment and exports. The 2020s have been marked by the COVID-19 pandemic, considerably impacting the global and Chinese economies, resulting in an average growth rate of 4.72% to date.

Despite a rebound in 2023 with 5.2% growth, the overall trend remains downward, with the 2024 growth target set at 5% (NBSC, 2024). Clean energy was the primary driver of economic growth in 2023, contributing $1.6 trillion to the economy (Myllyvirta, 2024). Investments in solar energy, electric vehicles, and batteries increased significantly, accounting for 40% of GDP growth. Without these sectors, China would not have achieved its 5.2% growth target in 2023 (Myllyvirta, 2024).

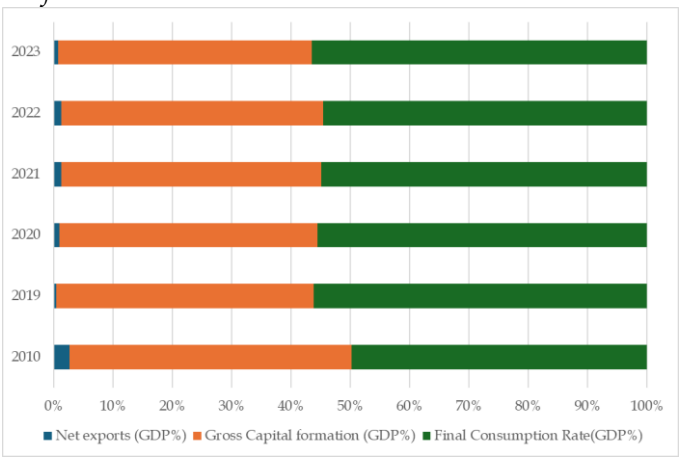
From a demand-side perspective, China has attempted to boost domestic consumption to reduce its dependence on exports and investment in infrastructure and fixed assets. However, as shown in Figure 1, the transition has not been entirely successful. Although the final consumption rate increased from 49.3% in 2010 to 55.8% in 2019, the COVID-19 pandemic caused a drop to 54.7%, with a gradual recovery to 55.7% in 2023. Gross capital formation has remained high, around 42-43% of GDP.

Currently, China represents 18% of global GDP but only 13% of global consumption and 32% of global investment (Pettis, 2023). In this vein, disposable income growth has fallen from 11.04% between 2001 and 2012 to 8.39% between 2013 and 2022 (Liu, 2023a), and China's household debt to disposable income ratio rose to 115% in 2023, up from 112% in 2022 (Fitch, 2024). The Gini Index decreased from 43.7% in 2010 to 37.1% in 2020 (World Bank, 2024).

Clean energy investment in China saw a 40% year-on-year increase to $890 billion, driving all investment growth in the Chinese economy in 2023. This investment nearly matches global fossil fuel supply investments (Myllyvirta, 2024). China's solar PV and battery manufacturing capacity reached almost 640 GW and 660 GWh, respectively, solidifying its position as a major global player in green technologies (IEA, 2024). However, China still grapples with substantial challenges from its reliance on fossil fuels. Despite robust growth in the renewable energy sector, investment in coal remains high, driving record production in 2023 (IEA, 2024).

Figure 1.

Demand-side components of China's GDP



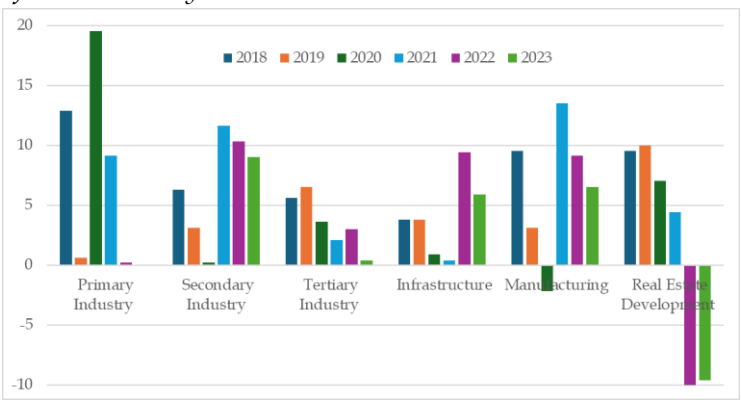
Source: Own elaboration and NBSC (2024).

From the supply-side perspective, the government's objective is to move towards a more service-oriented economy. From 2014 to 2023, China's GDP composition shows a clear transition towards an economy dominated by the tertiary sector. The primary sector's share decreased from 8.6% in 2014 to 7.1% in 2023. The secondary industry declined from 43.1% in 2014 to 38.3% in 2023. This trend was interrupted in 2020 due to the COVID-19 pandemic but recovered by 2023, with the tertiary industry reaching 54.6% of GDP (NBSC, 2024).

Moreover, sectoral investment trends (Figure 2) indicate disinvestment in real estate in 2022 and 2023, alongside sustained growth in the secondary sector, particularly in manufacturing and infrastructure. Growth in the tertiary sector was weak, peaking at only 3% in 2022. The downtrend in the real estate sector is evident, with government revenues from land sales falling by 13% from the previous year. Since 2021, real estate investments, construction starts, and land acquisitions have significantly declined, leading to a rapid drop in property prices (NBSC, 2024). Additionally, the total area of newly built housing sold in 2023 was less than 950 million square meters, the lowest level in 13 years (NBSC, 2024).

Figure 2.

Year-on-year growth of investment by sector

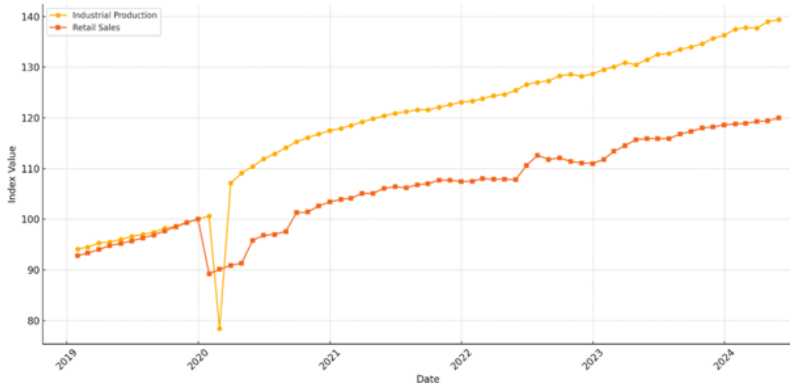


Source: Own elaboration and NBSC (2024).

As a proxy of supply and demand-side trends, figure 3 indicates that post-2020, industrial production recovered quickly. At the same time, retail sales grew more slowly, creating a gap that slightly increased in early 2024. This could indicate that the rebalancing objective trend is unclear in the short term (NBSC, 2024). Moreover, China's productivity has also seen significant changes. Productivity increased from $3,230 in 1991 to over $42,000 in 2023, surpassing other emerging economies but still lagging behind advanced economies like the US, Germany, and Japan. In 2023, China's productivity was 28.1% of that of the US, 35% of Germany, 46.5% of South Korea, and 88% of the world average (World Bank, 2024).

Figure 3.

Industrial Production and Retail Sales Indexed to January 2020 (Base = 100)



Source: Own elaboration, NBSC (2024).

Given the increase in investment in the industrial and manufacturing sectors and the rise in industrial production, it is essential to analyze China's capacity utilization. Industrial capacity utilization remained stable at around 76-77% in 2019. The COVID-19 pandemic caused a drop to 67.3% in early 2020, followed by a recovery to 78.4% in 2021. Between 2022 and 2023, it fluctuated around 75-76%, decreasing to 73.6% in early 2024 (NBSC, 2024).

Moreover, China's real internal rate of return (RIRR) has shown a downward trend from 2001 to 2019. Starting at 0.1135 in 2001, it steadily declined to 0.0774 in 2019. Between 2001 and 2006, the RIRR remained relatively stable with slight fluctuations, but after 2007, a more pronounced decline was observed. By 2012, the RIRR fell below 0.1 and continued to decrease, indicating a significant reduction in investment efficiency (Feenstra et al., 2023).

The decreasing trend in China's RIRR suggests that investments are becoming less profitable. The public and private sectors may resort to higher borrowing levels to sustain economic growth and finance projects with lower returns. This needs to offset reduced investment profitability with a greater volume of investments, often funded through debt, which can support short-term growth but increases financial risk and economic vulnerability in the long term (Vázquez, 2023).

Concerning China's debt, it is essential to distinguish between public and private debt. The central government's public debt is moderate, reaching 22.7% of its nominal GDP by the end of 2023 (CEIC, 2024). However, local government debt poses significant risks. The real estate crisis in China has significantly reduced local government revenue from land sales, limiting their ability to repay accumulated debt.

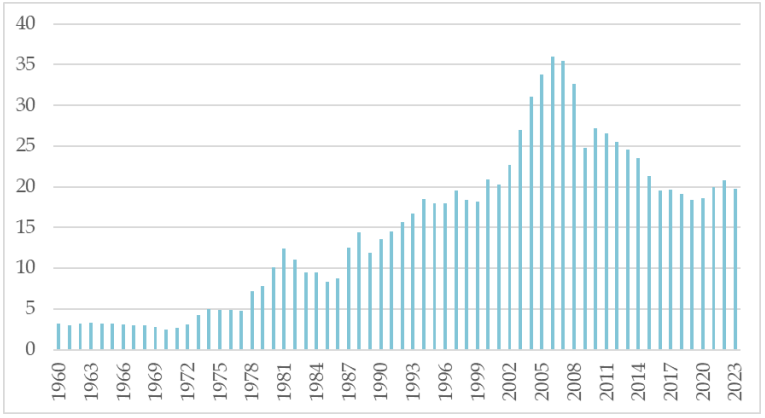
These governments have accumulated a massive debt of 66 trillion yuan ($9.8 trillion) through local government financing vehicles (LGFVs), equivalent to 75% of GDP in 2022 (Fitch, 2024). The shadow banking sector is crucial for financing these LGFVs, representing a significant portion of the corporate bond market. Decreased land sale revenues and high banking exposure increase financial stability risks. Moreover, private debt in China reached 200.56% of nominal GDP in March 2024, indicating significant leverage in the sector (CEIC, 2024).

Between 2010 and 2022, the growth in the number of patents in China has been extraordinary, significantly surpassing the US in total numbers. In 2010, China registered 84,099 total patents and 4,332 international patents. By 2022, these figures had increased to 750,635 total patents and 55,044 international patents. In comparison, the US went from 173,752 total patents in 2010 to 248,252 in 2022 and from 65,960 international patents to 106,314 over the same period. Although China has exceeded the US in total patents, it has not yet matched the US in the internationalization of its patents. This data highlights China's remarkable expansion in intellectual property, albeit with a still predominant focus on the domestic market (WIPO, 2024).

This links to China's external economic connections. Starting in the 1980s (Figure 4), China's exports as a percentage of GDP proliferated, peaking at 36% in 2008. Post-2008 financial crisis, this percentage declined to around 18% by 2019, rebounding to 20.8% in 2022 due to the COVID-19 pandemic. Specifically, China's surplus in the trade of manufactured goods (figure 5) grew from 0.6% of global GDP in 2006 to 1.7% in 2023, reflecting its impulse and dominance in global manufacturing. The pandemic saw this surplus peak at 1.8% in 2022.

Figure 4.

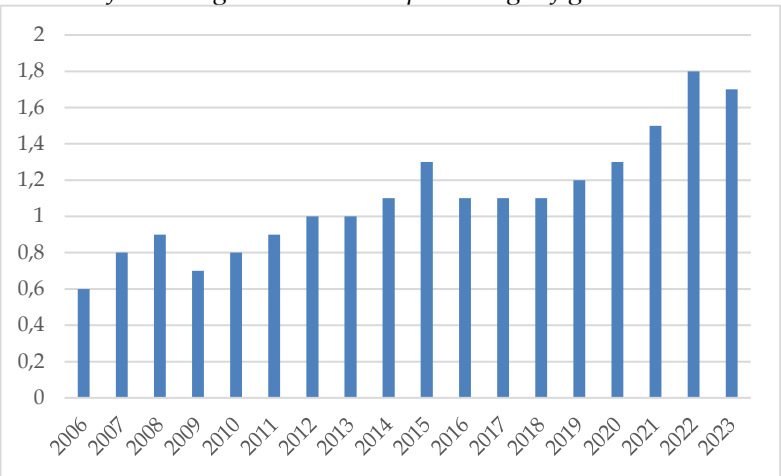
Exports % of GDP



Source: Own elaboration and World Bank (2024).

Figure 5.

China's Surplus in manufactured goods trade as a percentage of global GDP

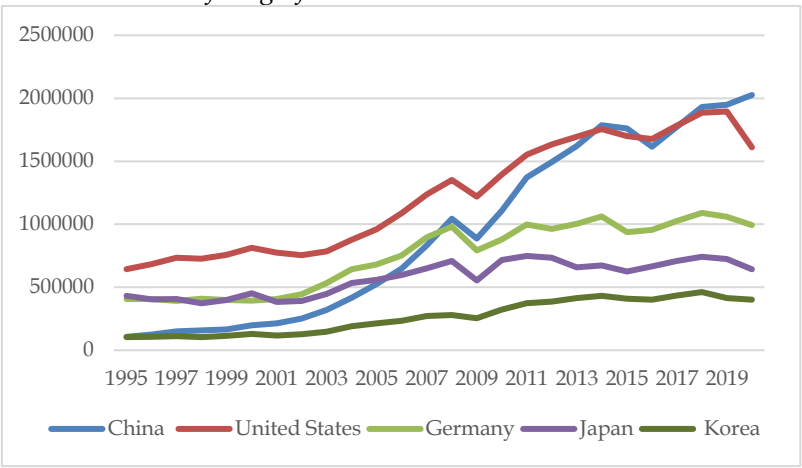


Source: Own elaboration and World Bank (2024).

China has transformed its manufacturing industry, leading in production volume and high-value-added (OECD, 2024). By 2020, China's share of manufacturing output was three times that of the US and significantly higher than that of Japan and Germany. This shift towards self-sufficiency and domestic value creation is evident in its reduced reliance on imported intermediate inputs (OECD, 2024). Moreover, as shown in Figure 6, the most recent OECD TiVA data indicates that China generates the most value added in global final demand. In other words, it has moved from adding minimal value to global exports to being the leading country in value-added generation, demonstrating significant growth in this area.

Figure 6.

Domestic value added embodied in foreign final demand



Source: Own elaboration and OECD TiVA (Trade in Value Added) Database (2024).

In 2022, the top destinations for Chinese exports were the US (14.8%), Hong Kong (7.39%), Japan (4.76%) and South Korea (4.03%). The main sources of imports for China included the US (6.98%), South Korea (6.94%), Japan (6.28%) and Chinese Taipei (5.63%).

This bilateral trade highlights China's diversification in its trade relations, mitigating risks and ensuring a steady flow of goods and technology. As for the US, approximately 17.7% of its imports came from China, while 7.7% of its exports were destined for China. For Germany, 6.8% of its exports went to China, and 10.2% of its imports came from China (COMTRADE, 2024).

Continuing with the foreign sector, the green industry has been crucial to China's manufacturing boom. In 2023, EV exports increased by 70% year-on-year, reaching $34.1 billion, with Europe absorbing almost 40% of these exports (Huang & Xia, 2024). China exported more than 4 million cars, including 1.2 million EVs, making it the world's largest exporter of automobiles, up 65% year-on-year (COMTRADE, 2024).

China's competitiveness in green technologies is based on significantly reduced production costs and economies of scale. Prices of Chinese solar panels and batteries reached historic lows in 2023, facilitating their export and increasing global adoption of these technologies. By 2022, China accounted for 80% of the world's installed capacity for solar PV modules and 75% for batteries. This concentration of production makes it possible to meet domestic demand and export the surplus, consolidating China as a world leader in producing and exporting electric vehicles and clean technologies (IEA, 2023, 2024).

Finally, there was a notable decline in Chinese investment abroad in 2020. However, since 2023, there has been a recovery with renewed momentum, particularly within the Belt and Road Initiative (BRI). This resurgence marks the 10th anniversary of the BRI and includes a strategic shift towards “Smart and Beautiful” investments, focusing on green and high-tech projects, albeit in smaller quantities. In 2023, investment began to recover from the impacts of COVID-19 and the zero-COVID policies, although construction lagged. Transportation has surpassed energy to become the largest sector for investment.

Despite resistance from the US, the EU, and other countries towards Chinese acquisitions, Indonesia has emerged as the leading recipient of these investments. A significant part of the recovery in 2023 can be attributed to investments in the automotive sector. Major Chinese companies, such as BYD, seek to open factories abroad, creating a global automotive supply chain led by China (American Enterprise Institute, 2024).

5. Discussion

This research suggests a slowdown in China's economic growth and a reconfiguration of its economy, especially from the supply side. Between 2010 and 2019, there was an increase in the weight of domestic consumption. However, this trend was interrupted during the pandemic and seems to be recovering in 2023, still far from international average levels. Household income growth has slowed, and debt relative to income has increased, hindering sustained consumption expansion.

These results align with Pettis (2023) and Liu (2023a; 2023b), who note that high household debt limits consumption growth. Although the share of final consumption in GDP has increased marginally, high household debt and a financial structure that favors investment over consumption continue to limit consumption growth, supporting the critiques of Klein and Pettis (2020), and Liu (2024), who argue that current policies have failed to adequately rebalance domestic demand due to the prioritization of supply-side policies over demand-side policies.

In contrast, reliance on exports decreased during the same period, with a rebound during the pandemic. Investment has maintained a considerable weight, much higher than international average levels, with investment in manufacturing standing out, although investment profitability reached a low in 2019. Klein and Pettis (2020), and Liu (2024) also observe this continued reliance on investment.

From the supply side, there is a clear trend towards an increase in the services sector, with a setback during the pandemic and a significant rebound in the industry. Since the pandemic, investment has mainly been directed towards the industrial and manufacturing sectors, and industrial production has grown above retail sales between January 2020 and the first half of 2024. Industrial capacity utilization reached its lowest point since the pandemic in 2024.

Investment in clean energy has been a significant driver of recent growth. China has increased its innovation and technological capacity, as evidenced by the rise in patent registrations. However, although the international weight of its patents has increased, it remains relatively small compared to the global total, especially in comparison with the US, in line with studies by Malkin (2020), and Vázquez and Visintin (2024).

However, continued investment in fossil fuels reveals a contradiction in energy policies that could limit the effectiveness of this transition towards a greener economy. This finding resonates with Wagner (2019; 2021), and García-Herrero and Schindowski (2023), who argue that Xi Jinping's centralized approach could inhibit the necessary innovation.

The observed imbalances follow the argument presented by Germain and Schwartz (2017), and Klein and Pettis (2020), who also highlight the imbalances in the Chinese economy regarding the reliance on investment and exports and the weak domestic consumption that create international imbalances. Additionally, Liu (2024) argues that China is trapped in cycles of overinvestment that generate overcapacity, which it then addresses with a new investment cycle. This is reflected in the Chinese economy's transition from real estate investment to manufacturing.

The analysis of exports and foreign direct investment suggests that China remains a dominant player in global manufacturing, expanding its influence through the Belt and Road Initiative (BRI), in part as a possible way to export internal imbalances, such as overcapacity. The increase in BRI investments in sectors such as the automobile industry could follow the line of Zhao and Ruet (2021) who suggest that China might use the BRI to export its overcapacity, thus avoiding necessary internal adjustments.

6. Conclusions

The present study aims to analyze the recent evolution of China's economic model, focusing on the transition from an investment and export-led growth strategy to one increasingly driven by domestic consumption and innovation. The objective is to understand the drivers and characteristics of China's current economic model and assess the impacts of these changes on both the domestic and global economic landscape. Using longitudinal and descriptive analyses of macroeconomic data, the research examines internal and external economic factors influencing this transition, including the impact of the COVID-19 pandemic and ongoing trade tensions.

The findings suggest a reconfiguration of China's economy with ongoing structural challenges. While there has been some increase in domestic consumption, high household debt and a financial structure favoring investment over consumption continue to pose limitations.

Exports and investment roles remain significant, with clean energy investments contributing to recent growth. However, there are contradictions in energy policy due to continued investment in fossil fuels. China's innovation capacity has grown, though its international impact in this area is still developing.

In conclusion, our results suggest that although China has made significant progress toward modernizing its economy and developing new technological industries, it faces substantial challenges that could limit its ability to maintain sustainable and balanced growth. The trend of the Chinese model suggests that external tensions could increase in two ways. First, the increase in exports of manufactured goods, especially those linked to green sectors, due to the export of overcapacity.

Second, the development of China as a technological power that could threaten the dominance of major powers. This suggests that the technological and commercial blockade policy through sanctions and tariffs toward China could continue in the coming years. The alternative would be to reduce reliance on the external sector by boosting domestic consumption, thereby limiting external tensions.

Future studies could focus on the evolution of these trends post-COVID-19, how internal policies and external tensions continue to shape the Chinese economic landscape, and the relations between internal and external imbalances to resolve geopolitical tensions.

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Financiación: Este trabajo recibió financiación de la Corporación Universitaria de Asturias.

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