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DISSERTATION

ONE BELT ONE ROAD AS GLOBAL INCLUSIVE GROWTH STRATEGY OF PRC

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The dissertation contains the results of my own research. The use of ideas, results, and texts of other authors are linked to the corresponding source.

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Ternopil – 2025

АНОТАЦІЯ

Ван Юншунь. **Один пояс один шлях як глобальна стратегія інклюзивного зростання КНР.** – Кваліфікаційна наукова праця на правах рукопису.

Дисертація на здобуття ступеня доктора філософії за спеціальністю 292 «Міжнародні економічні відносини». – Західноукраїнський національний університет, Тернопіль, 2025.

У цій дисертації досліджується стратегічна роль Ініціативи «Один пояс один шлях» як ключового елемента міжнародної співпраці Китаю, спрямованої на сприяння інклюзивному зростанню. Розглядаючи цю ініціативу в контексті розвитку глобалізації, регіональної інтеграції та змін геополітичної динаміки, дослідження аналізує теоретичні засади, механізми реалізації та довгострокові стратегічні наслідки Ініціативи «Один пояс один шлях».

У першому розділі цієї дисертації закладено теоретичну основу для розуміння концепції глобального інклюзивного зростання, розглядаючи Ініціативу «Один пояс один шлях» у контексті як класичних, так і сучасних дискурсів розвитку. Завдяки детальному огляду теорій, включаючи логіку інклюзивного зростання, теорію людського капіталу та багатовимірні моделі розвитку, розділ ілюструє, як Ініціатива «Один пояс один шлях» сприймає та просуває інклюзивне зростання як керівний принцип, так і практичну мету. Наголошується на подвійному завданні ініціативи: сприяти економічній ефективності, та водночас забезпечувати соціальну справедливість, зокрема шляхом усунення нерівності в розвитку між країнами та всередині них. У цьому розділі висвітлюється, як Ініціатива «Пояс і шлях» сприяє подоланню глобальних та регіональних розривів шляхом координації політики та транскордонної співпраці, а її стратегія інклюзивного зростання охоплює не лише матеріальне благополуччя, але й розбудову інституційного потенціалу та екологічну стійкість.

Помітним доповненням до цього розділу є теоретичний та геополітичний аналіз економічних коридорів, які виступають просторовими втіленнями

міжнародної співпраці. Економічні коридори розглядаються як зони посиленої взаємозв'язаності та функціональної взаємозалежності, що поєднують інфраструктурні інвестиції з ширшими моделями торгівлі, фінансів та дипломатії. Ці коридори розглядаються не лише як практичні механізми розвитку, але й як відображення геополітичної стратегії та економічного впливу. Інтегруючи будівництво економічних коридорів у теорію міжнародних економічних відносин, розділ підкреслює подвійну роль, яку відіграють ці коридори: сприяння інклюзивному зростанню та трансформації геополітичного ландшафту.

У другому розділі дисертації досліджуються операційні механізми та динаміка впровадження Ініціативи «Один пояс один шлях», приділяючи особливу увагу тому, як принципи інклюзивного розвитку втілюються на практиці як у Китаї, так і в його країнах-партнерах. Починаючи з власної траєкторії розвитку Китаю, дослідження розглядає, як країна обрала особливий шлях інклюзивного зростання, який інтегрує скорочення бідності, екологічну стійкість та соціальну справедливість у свою ширшу стратегію модернізації. Встановлено, що замість того, щоб покладатися виключно на економічне зростання, підхід Китаю охоплює багатовимірну модель, яка сприяє рівному доступу до освіти, охорони здоров’я, зайнятості та інфраструктури, а також включає регіональну координацію та цифрову трансформацію як життєво важливі основи своєї національної системи розвитку. У цьому розділі визначено зменшення бідності як базовий чинник формування стратегії, а також проаналізовано, як екологічна політика та поява «Нової норми» в Китаї змістили акцент зростання країни в бік інновацій та екологічного балансу.

Розширюючи сферу охоплення країн-учасниць Ініціативи «Один пояс один шлях», у розділі представлено порівняльне дослідження результатів інклюзивного розвитку в різних регіонах. Ініціатива «Один пояс один шлях» сприяє розвитку зв’язків та економічному співробітництву в різних регіонах з урахуванням місцевих умов: у Центральній Азії, Південно-Східній Азії та Африці: акцент зроблено на енергетику, транспорт, регіональну інтеграцію та

розвиток інфраструктури; у Європі на обережну участь і диверсифікацію ринків. У цьому розділі висвітлено різноманітність національних умов, цілей розвитку та управлінських можливостей учасників Ініціативи «Один пояс один шлях» підкреслюючи необхідність локалізованих моделей співпраці та гнучких механізмів впровадження. Розділ містить регресійний аналіз вибраних країн-учасниць Ініціативи «Один пояс один шлях», досліджуючи кореляцію між обсягом торгівлі з Китаєм та змінами показників людського розвитку за останнє десятиліття. Розглядаючи ризики та виклики, пов'язані з реалізацією Ініціативи «Один пояс один шлях» дослідження пропонує збалансовану оцінку, яка враховує геополітичні, економічні, екологічні та соціальні аспекти. Ці виклики розглядаються не як нездоланні перешкоди, а як сфери, у яких адаптивне управління, багатостороння координація та механізми зниження ризиків можуть відігравати життєво важливу роль у зміцненні довгострокової життєздатності Ініціативи «Один пояс один шлях».

У третьому розділі дисертації досліджено ширші стратегічні наслідки Ініціативи «Один пояс один шлях» та розглянуто, можливе формування майбутню архітектуру глобального розвитку та управління. Розділ розпочинається з оцінки внеску Ініціативи «Один пояс один шлях» у сприяння розвитку більш інклюзивних інституційних систем, зокрема з точки зору забезпечення додаткових платформ для діалогу, експериментів з політикою та міжнародної координації. Ініціатива розглядається як така, що зміцнює інституційну основу для інклюзивного зростання, заохочуючи норми участі, взаємної вигоди та спільної відповідальності. Вона також відіграє певну роль у підвищенні можливостей регіонального управління, надаючи країнам, особливо на Глобальному Півдні, можливість більш впевнено та ефективно брати участь у міжнародній економічній співпраці. Як результат Ініціатива «Один пояс один шлях» підтримує більш плюралістичну та збалансовану структуру глобального управління, яка надає перевагу кооперативним рішенням та регіональній ініціативі, а не одностороннім підходам.

Дослідження визначає низку ключових напрямів, у яких, ймовірно, розвиватиметься Ініціатива «Один пояс один шлях» для подолання як внутрішніх, так і зовнішніх викликів. Особливу увагу приділено необхідності зміцнення багатосторонніх структур та гармонізації стандартів із чинними глобальними інституціями з метою підвищення ефективності та довіри. Також розглядається управління фінансовими ризиками, зокрема в аспектах стійкості боргового навантаження та фінансової дисципліни в країнах-реципієнтах. У дисертації наголошується на важливості запровадження механізмів розподілу вигод, адаптованих до місцевих умов, які б забезпечували справедливий розподіл прибутків і довгострокове соціально-економічне зростання для приймаючих спільнот у рамках проєктів «Один пояс один шлях». Встановлено перспективний компонент Ініціативи «Один пояс один шлях» – Цифровий Шовковий Шлях, який розглядається як каталізатор скорочення глобального цифрового розриву та розширення доступу до технологій, що підтримують електронну комерцію, цифрові фінанси та розумну інфраструктуру. Цифровий вимір цієї ініціативи запроваджує новий рівень складності управління, зокрема щодо стандартів даних, кібербезпеки та політики у сфері інновацій, але водночас відкриває можливості для стрибкоподібного розвитку в багатьох країнах-партнерах. Дослідження наголошує сприяння інклюзивному та сталому зростанню шляхом всеохоплюючої цифрової стратегії, що акцентує увагу на цифровій грамотності, інклюзії та передачі технологій.

У дисертації оцінено Ініціативу «Один пояс один шлях» як довгостроковий рушій інклюзивного зростання в багатьох сферах. Інвестиції в транспортну, енергетичну та комунікаційну інфраструктуру сприяють зниженню бар’єрів для економічної участі та підвищенню регіональної мобільності. Паралельно, соціальна інклюзія сприяє розвитку програм, пов’язаних з Ініціативою «Один пояс один шлях» в освіті, професійній підготовці, охороні здоров’я та культурному обміні. Екологічна інклюзія досягається шляхом розвитку зеленої інфраструктури, ініціатив у сфері відновлюваної енергії та кліматично стійкого міського планування. У сфері цифрової економіки ініціатива підтримує більш

справедливий глобальний розподіл цифрових інструментів, знань та ринкових можливостей. У сукупності ці зусилля становлять багатовимірний підхід до інклюзивного розвитку, що прагне узгодити інфраструктуру та інвестиції з цілями розвитку людського потенціалу та сталого розвитку. Ініціатива «Один пояс один шлях» подається як адаптивна модель, шо постійно розвивається, підвищує глобальний потенціал для досягнення справедливого зростання. Це дослідження, розглядає Ініціативу «Один пояс один шлях» як довгострокову платформу для співпраці, яка зміцнює не лише фізичну взаємопов'язаність, але й інституційну, соціальну та цифрову інтеграцію в глобальному масштабі. У роботі запропоновано модель інклюзивного розвитку КНР в рамках реалізації Ініціативи «Один пояс один шлях», яка базується на стратегічній корекції майбутньої траєкторії розвитку економіки відповідно до зміни векторів інклюзивного зростання.

Ключові слова: Ініціатива «Пояс і шлях», міжнародні економічні відносини, глобальна безпека, глобалізація, інтеграція, міжнародне співробітництво, експорт, імпорт, Китай, міжнародна торгівля, інвестиції, сталий розвиток, глобальна економіка, цифровізація, зелене фінансування.

ANNOTATION

Wang Yongshun. **One Belt One Road as Global Inclusive Growth Strategy of PRC.** – Qualifying thesis manuscript copyright.

Dissertation for the degree of Doctor of Philosophy in specialty 292 – "International Economic Relations" – West Ukrainian National University, Ternopil, 2025.

This dissertation examines the strategic role of One Belt One Road Initiative as a pivotal element of China's international cooperation framework aimed at promoting inclusive growth. Situating the initiative within the evolving contexts of globalization, regional integration, and shifting geopolitical dynamics, the study explores the theoretical foundations, implementation mechanisms, and long-term strategic impacts of the BRI.

The first chapter of this dissertation lays the theoretical foundation for understanding the concept of global inclusive growth by situating One Belt One Road Initiative within both classical and contemporary development discourses. Through a detailed review of theories including the logic of inclusive growth, human capital theory, and multidimensional development models the chapter illustrates how the BRI adopts and advances inclusive growth as both a guiding principle and a practical objective. It emphasizes the initiative's dual aim: to promote economic efficiency while safeguarding social equity, particularly by addressing development disparities across and within nations. The chapter highlights how One Belt One Road Initiative contributes to bridging global and regional gaps through policy coordination and cross-border cooperation, with its inclusive growth strategy encompassing not only material well-being but also institutional capacity-building and environmental sustainability.

A notable addition to this chapter is the theoretical and geopolitical analysis of economic corridors, which serve as spatial representations of international cooperation. Economic corridors are treated as zones of intensified connectivity and functional interdependence, linking infrastructure investments with broader patterns of trade, finance, and diplomacy. These corridors are not only seen as practical development mechanisms, but also as reflections of geopolitical strategy and economic influence.

By embedding economic corridor construction into the theory of international economic relations, the chapter underscores the dual role these corridors play: enabling inclusive growth and reshaping the geopolitical landscape.

The second chapter of the dissertation investigates the operational mechanisms and implementation dynamics of One Belt One Road Initiative, placing particular emphasis on how inclusive development principles are translated into practice within both China and its partner countries. Beginning with China's own development trajectory, the study explores how the nation has pursued a distinctive path of inclusive growth that integrates poverty reduction, environmental sustainability, and social equity into its broader modernization strategy. It is developed than relying solely on economic expansion, China's approach embraces a multi-dimensional model one that promotes equal access to education, healthcare, employment, and infrastructure, while also incorporating regional coordination and digital transformation as vital pillars of its national development framework. The chapter identifies poverty reduction as the basic factor of strategy forming, and it examines how environmental policies and the emergence of China's "New Normal" have shifted the country's growth emphasis toward innovation, and ecological balance.

Expanding the scope to participating One Belt One Road Initiative countries, the chapter presents a comparative exploration of inclusive development outcomes across different regions. One Belt One Road Initiative promotes connectivity and economic cooperation in different regions in accordance with local conditions: in Central Asia, Southeast Asia and Africa: the focus is on energy and transportation, regional integration and infrastructure construction respectively; in Europe on prudent participation and market diversification. The chapter highlights the diversity of national conditions, development goals, and governance capacities among One Belt One Road Initiative participants, emphasizing the need for localized cooperation models and flexible implementation mechanisms. The chapter incorporates a regression analysis of selected One Belt One Road Initiative-participating countries, examining the correlation between trade volume with China and changes in human development indicators over the past decade. In addressing the risks and challenges

associated with One Belt One Road Initiative implementation, the study offers a balanced assessment that incorporates geopolitical, economic, environmental, and social dimensions. These challenges are not viewed as insurmountable obstacles but as areas where adaptive governance, multilateral coordination, and risk mitigation mechanisms can play a vital role in strengthening the One Belt One Road Initiative's long-term viability.

The third chapter of the dissertation explores the broader strategic implications of One Belt One Road Initiative and considers how it may shape the future architecture of global development and governance. It begins by assessing the One Belt One Road Initiative's contribution to fostering more inclusive institutional systems, particularly in terms of providing additional platforms for dialogue, policy experimentation, and international coordination. The initiative is seen as reinforcing the institutional foundation for inclusive growth by encouraging norms of participation, mutual benefit, and shared responsibility. It also plays a role in enhancing regional governance capabilities by empowering countries especially in the Global South to engage in international economic cooperation more confidently and effectively. As result, the One Belt One Road Initiative supports a more pluralistic and balanced global governance structure, one that values cooperative solutions and regional initiative over unilateral prescriptions.

The research identifies a number of key areas where the One Belt One Road Initiative's development trajectory will likely evolve to address both internal and external challenges. There is strong emphasis on the need to strengthen multilateral frameworks and harmonize standards with existing global institutions to improve efficiency and credibility. Financial risk management is also addressed, particularly in relation to debt sustainability and fiscal prudence in host countries. The dissertation advocates for locally tailored, benefit-sharing mechanisms that ensure host communities receive equitable returns and long-term socio-economic improvements from One Belt One Road Initiative projects. It is identified the perspective component of the One Belt One Road Initiative is the Digital Silk Road, which is described as a catalyst for reducing the global digital divide and expanding access to technologies that

support e-commerce, digital finance, and smart infrastructure. The digital dimension of the initiative introduces a new layer of governance complexity concerning data standards, cybersecurity, and innovation policy but also creates opportunities for leapfrogging development stages in many partner economies. The research focused advancing inclusive and sustainable growth through a comprehensive digital agenda that emphasizes digital literacy, inclusion, and technology transfer.

The dissertation evaluates the One Belt One Road Initiative as a long-term driver of inclusive growth across multiple domains. Investments in transportation, energy, and communication infrastructure help reduce barriers to economic participation and enhance regional mobility. In parallel, social inclusiveness is promoted through One Belt One Road Initiative-linked programs in education, vocational training, public health, and cultural exchange. Environmental inclusiveness is addressed through the development of green infrastructure, renewable energy initiatives, and climate-resilient urban planning. In the realm of the digital economy, the initiative supports a more equitable global distribution of digital tools, knowledge, and market opportunities. Taken together, these efforts represent a multidimensional approach to inclusive development that seeks to align infrastructure and investment with human development and sustainability goals. The One Belt One Road Initiative is portrayed as an adaptive model, that enhances the global capacity to achieve equitable growth. This chapter ultimately frames the One Belt One Road Initiative as a long-term platform for cooperation that strengthens not only physical connectivity but also institutional, social, and digital integration on a global scale. The dissertation proposes a model of inclusive development of the PRC within the framework of the implementation of the One Belt One Road Initiative, which is based on the strategic correction of the future trajectory of economic development in accordance with the change in the vectors of inclusive growth.

Keywords: Belt and Road Initiative, international economic relations, global security, globalization, integration, international cooperation, export, import, China, international trade, investment, sustainable development, global economy, digitalization, green finance.

СПИСОК ОПУБЛІКОВАНИХ ПРАЦЬ ЗА ТЕМОЮ ДИСЕРТАЦІЇ

Наукові праці, в яких опубліковані основні наукові результати дисертації:

1. Yongshun Wang, Roman Zvarych. Optimize the Allocation of International Resource under 'the Belt and Road' Framework Strategy Research. *Herald of Economics*, 2024, No. 2, pp. 42-57. URL: https://doi.org/10.35774/visnyk2024.02.042 (0,5 д.а., особисто автору – 0,3 д.а.: автором обґрунтовано дисбаланс у глобальному розподілі ресурсів, оцінено розвиток глобалізації та геополітичну нестабільність у світі).

2. Zvarych R. Ye., Yongshun Wang. Research on the challenges and countermeasures faced by the Belt and Road Initiative. Інноваційна економіка, 2024, № 2, С. 5-14. URL: https://doi.org/10.37332/2309-1533.2024.2.1 (0,45 д.а., особисто автору – 0,3 д.а.: автором обґрунтовано виклики і можливості, що виникають під час реалізації ініціативи «Один пояс, один шлях», показано міжнародну співпрацю та міжнародний обмін, напрацьовано механізм управління ризиками, удосконалено механізм багатосторонньої співпраці).

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List of Abbreviations

1. Belt and Road Initiative (BRI) Related Acronyms

Acronym	Full Name	Description
BRI	Belt and Road Initiative	China's global development strategy to enhance regional connectivity and economic cooperation.
OBOR	One Belt One Road (former name)	The earlier term for BRI before 2016.
SREB	Silk Road Economic Belt	The overland component of the Belt and Road Initiative.
MSR	21st Century Maritime Silk Road	The maritime component of the Belt and Road Initiative.
BRF	Belt and Road Forum for International Cooperation	High-level forum for policy dialogue under BRI.
AIIB	Asian Infrastructure Investment Bank	Multilateral development bank supporting infrastructure investment under BRI.
SRF	Silk Road Fund	Investment fund to support BRI projects.
CERE	China-Europe Railway Express	Rail freight service connecting China with Europe.
CPEC	China-Pakistan Economic Corridor	Flagship BRI corridor project linking China with Pakistan.
CMEC	China-Myanmar Economic Corridor	Economic corridor enhancing connectivity between China and Myanmar.
BCIM	Bangladesh-China-India-Myanmar Economic Corridor	Planned corridor fostering regional integration.
BRIFA	Belt and Road International Financial Alliance	Financial alliance to promote investment under BRI.

2. The discourse system of this study related Acronyms

Acronym	Description	Acronym	Description
MGI	Multidimensional growth index	EdOI	Education opportunity index
EGCI	Economic growth composite index	HICR	Health insurance coverage rate
IDCI	Income distribution composite index	EmOI	Employment opportunity index
SOCI	Social opportunity composite index	HSI	Housing security index
ESCI	Environmental sustainability composite index	CEI	Carbon emission intensity
GG	GDP growth	EEI	Energy efficiency index
GC	GDP per capita	RES	Renewable energy share
LP	Labour productivity	WUE	Water use efficiency
WDI	Wealth distribution index	AQI	Air Quality Index
RPR	Relative poverty rate		

3. Global Economic Corridors Related Acronyms

Acronym	Full Name	Description
GEC	Global Economic Corridor	Strategic trade and infrastructure routes connecting multiple regions.
NSTC	North-South Transport Corridor	Multi-modal transport network connecting India, Iran, Russia, and Europe.
TEN-T	Trans-European Transport Network	EU policy for improving transport infrastructure across Europe.

IMEC	India-Middle East-Europe Economic Corridor	Emerging corridor project linking India with Europe via the Middle East.
CAREC	Central Asia Regional Economic Cooperation	Multilateral partnership for transport and trade facilitation in Central Asia.
LAPSSET	Lamu Port-South Sudan-Ethiopia Transport Corridor	Eastern Africa's economic corridor for regional trade and logistics.
NACEC	North America-China Economic Corridor	Proposed trade and investment corridor between China and North America.
IGC	Inclusive Growth Corridor	Development corridors promoting inclusive and sustainable growth.

4. Economic and Regional Organizations Related Acronyms

Acronym	Full Name	Description
UNESCAP	United Nations Economic and Social Commission for Asia and the Pacific	UN body promoting economic and social development in Asia-Pacific.
APEC	Asia-Pacific Economic Cooperation	Forum promoting regional economic integration in the Asia-Pacific.
ASEAN	Association of Southeast Asian Nations	Regional intergovernmental organization promoting cooperation in Southeast Asia.
RCEP	Regional Comprehensive Economic Partnership	Largest free trade agreement in Asia-Pacific, covering ASEAN and key partners.
SCO	Shanghai Cooperation Organization	Political, economic, and security alliance in Eurasia.
EU	European Union	Political and economic union of 27 European countries.
AU	African Union	Continental union consisting of 55 African countries.
ECOWAS	Economic Community of West African States	Regional economic union in West Africa.
MERCOSUR	Southern Common Market	South American regional trade bloc.
NAFTA	North American Free Trade Agreement	Former trade agreement among the US, Canada, and Mexico (now replaced by USMCA).
USMCA	United States-Mexico-Canada Agreement	Modernized trade agreement replacing NAFTA.
BRICS	Brazil, Russia, India, China, South Africa	Association of five major emerging economies.
OECD	Organisation for Economic Co-operation and Development	International organization promoting economic growth and trade.
ADB	Asian Development Bank	Multilateral development bank supporting economic development in Asia.
NDB	New Development Bank	Multilateral bank established by BRICS countries.
EBRD	European Bank for Reconstruction and Development	Bank fostering transition to market economies in Europe and beyond.
IMF	International Monetary Fund	International financial institution promoting global monetary cooperation.
WTO	World Trade Organization	Global international organization regulating trade.
UNCTAD	United Nations Conference on Trade and Development	UN body dealing with trade, investment, and development issues.
WB	World Bank	International development finance organization.
UNECA	United Nations Economic Commission for Africa	UN body for African economic cooperation.
AfCFTA	African Continental Free Trade Area	Free trade agreement among African states.

AfDB	African Development Bank	Multilateral bank promoting African economic development.
G20	Group of Twenty	Forum for major economies and the EU.
DRMI	Debt and Reserves Management Initiative	IMF-WB debt management program.
KfW	Kreditanstalt für Wiederaufbau	German state-owned development bank.
CPC	Communist Party of China	Governing party of the People's Republic of China.
GEF	Global Environment Facility	Funding body for global environmental projects.
IDA	International Development Association	World Bank fund for low-income countries.
NDBs	National Development Banks	Banks financing domestic development.
LDCs	Least Developed Countries	UN-designated low-income states.
GDI	Global Development Initiative	China's global sustainable development initiative.
GNDFC	Global Network of Development Financing Cooperation	Global financing cooperation platform.
IEA	International Energy Agency	Energy security and policy advisory body.
EEC	Eurasian Economic Commission	Regulatory body of the Eurasian Economic Union.
COSCO	China Ocean Shipping Company	China's state-owned shipping enterprise.
EAEU	Eurasian Economic Union	Regional economic bloc in Eurasia.
CAS	Chinese Academy of Sciences	National research institution in China.

5. Economic Indicators and Development Terms

Acronym	Full Name	Description
GDP	Gross Domestic Product	Measure of total economic output.
GINI	Gini Coefficient	Index measuring income inequality.
SDGs	Sustainable Development Goals	UN's 17 global goals for sustainable development.

Source: Author's compilation

CONTENT

INTRODUCTION

Actuality of theme. In the context of profound transformations in the global order, the theme of this research positioning the “One belt one road” initiative as a strategy of global inclusive growth gains both theoretical and practical significance. The growing disparity in wealth between and within nations has become a central challenge to global stability, while global supply chains long assumed to be efficient and reliable have proven to be both fragile and unsustainable in the face of pandemics, geopolitical conflicts, and climate shocks. Against this backdrop, China’s rapid and sustained economic growth presents a compelling counter-narrative to Western-centric development trajectories. Its experience offers alternative approaches to modernization, infrastructure-driven growth, and cross-border collaboration. These trends collectively underscore the urgency of rethinking global development strategies through the lens of inclusivity, resilience, and long-term sustainability.

One of the most alarming consequences of these trends has been the persistent and widening gap in development across regions. The benefits of global growth have remained unequally distributed, with many countries in the Global South continuing to face marginalization in global value chains. A critical factor underlying this disparity is the chronic inadequacy of infrastructure in many parts of the world. Insufficient transport networks, outdated logistics systems, and limited digital connectivity have made it difficult for less developed countries to participate meaningfully in global trade. The weakness of physical infrastructure has directly translated into fragile and non-resilient supply chains, making them highly vulnerable to disruptions such as pandemics, natural disasters, and geopolitical conflicts. Countries with underdeveloped infrastructure suffered disproportionately under the COVID-19, unable to secure medical supplies, sustain agricultural exports, or transition to digital modes of economic activity. In this context, it has become increasingly clear that any strategy aimed at inclusive global growth must prioritize infrastructure development.

China’s rapid development experience over the past four decades offers a salient case in this regard. Through sustained investments in infrastructure, industrial capacity, and technological upgrading, China has successfully transformed itself from a

peripheral actor in global production networks into a central node. The Initiative “One belt one road” reflects an effort to internationalize aspects of this development model, particularly by addressing the “infrastructure gap” that hampers development in Asia, Africa, Latin America, and Eastern Europe. The Initiative “One belt one road” offers an alternative mechanism for mobilizing capital, technology, and policy coordination. Its emphasis on mutual benefit, long-term planning, and multi-dimensional connectivity resonates with the emerging consensus on sustainable and inclusive development articulated by multilateral institutions and national governments alike.

Finally, the theme of this research is especially pertinent as global actors seek to build a more resilient international order. Whether in response to climate change, health crises, or digital transformation, there is an urgent need for development models that can deliver inclusive outcomes while enhancing systemic robustness. The “One belt one road”, when critically examined through the theoretical lens of inclusive growth, presents a unique opportunity to explore how large-scale, cross-border cooperation can address the root causes of inequality, infrastructure underdevelopment, and supply chain vulnerability. As such, this study positions itself at the intersection of academic theory, empirical policy analysis, and global development practice.

Analysis of recent research and publications. Over the last ten years, scholarly interest in the “One belt one road” has intensified considerably, giving rise to a diverse body of literature that addresses its multifaceted dimensions ranging from geopolitics and economic development to international cooperation and sociocultural exchange. The sources analyzed in the course of this study include peer-reviewed journal articles, governmental and institutional reports, as well as policy papers, largely published between 2013 and 2024. Together, these works offer a comprehensive view of the evolving discourse around the “One belt one road”, with particular emphasis on three prevailing lines of inquiry: the initiative’s strategic geopolitical role, its infrastructure-centered development model, and its contribution to cultural diplomacy and soft power expansion. Among the most influential conceptual contributions is Parag Khanna’s Connectography, which, while not exclusively focused on the “One belt one road”, introduces a vital analytical framework by redefining global politics through

connectivity and infrastructure networks. His discussion of supply chain realignments and megaregional integration has inspired subsequent research that interprets the “One belt one road” as a mechanism for reshaping the global economic order. This geopolitical lens is further refined by authors such as Cai (2023) and Fallon (2022), who emphasize the dual nature of the BRI as both a strategic foreign policy instrument and a means for addressing China’s internal development challenges. The theme of infrastructure as a catalyst for economic transformation forms another cornerstone of the literature. Studies by Liu and Dunford (2016), as well as Yu (2017), examine the “One belt one road” potential to enhance regional integration by lowering trade barriers and facilitating physical connectivity. Employing methods such as spatial modeling and comparative economic analysis, these works demonstrate how large-scale infrastructure investment may generate significant economic spillovers though they also caution against unequal benefit distribution and emphasize the need for long-term sustainability and inclusiveness. In the legal and institutional context, Professor Roman Zvarych offers a significant European perspective. His research addresses the complex interaction between “One belt one road”-related initiatives and existing European regulatory frameworks, particularly in Central and Eastern Europe. His findings underscore the necessity of institutional alignment and highlight the legal adaptation processes required for successful regional cooperation under the “One belt one road” umbrella. Meanwhile, the cultural and educational aspects of the “One belt one road” have become more pronounced in recent years. For instance, research by de Castro and Lopez (2020) investigates how academic mobility and inter-university partnerships enhance intercultural understanding along the Silk Road. Complementary to this, several studies including those referenced as Chao Zhou, Zheng Hongling and Wan Shenwei are critically examine China’s soft power strategy, particularly through Confucius Institutes, cultural diplomacy, and joint research platforms. These people-to-people mechanisms reflect Beijing’s broader goal of fostering a “community with a shared future for mankind.”

Separate issues of the “One belt one road” implications for inclusive global development are highlighted in the works of a number of scientists, in particular:

Zdzislaw W. Puslecki, Chao Zhou, Hongling Zheng, Shenwei Wan, Biliang Hu, Gianfranco Gabriele Nucera, Robert M. Solow, Roman Zvarych, Ianchovichina Elena, Lundstrom Susanna, David C. Berliner, Biliang Hu, Sam Ursu, Justin Yifu Lin, Zheng Yong Nian, Zheng Yongnian, Ding Yi fan, Parag Khanna, Liu Weidong, Ihor Lishchynskyi, Vitalins Kurylyak, Olena Pryiatelchuk, Olha Yatsenko, Oleksandr Sokhatskyi. Although the BRI literature is rich in breadth and interdisciplinary in nature, certain aspects remain underdeveloped. One such gap is the limited attention paid to the "One belt one road" implications for inclusive global development. While the Initiative is often lauded for its economic potential, fewer studies engage with its role in reducing structural inequalities, mitigating regional disparities, or supporting Global South empowerment in a post-pandemic context. By addressing these underexplored areas and integrating insights from global development theory with empirical analysis, this dissertation aspires to expand the scholarly conversation surrounding the "One belt one road". As the result, we try to offer both theoretical advancement and practical policy recommendations, especially in relation to the Initiative's capacity to contribute to a more equitable and sustainable global order.

Connection of research with scientific programs, plans, topics. The dissertation is a component of scientific research of the West Ukrainian National University, in particular: fundamental state budget funding research "Concept of recovery and green reconstruction of Ukraine" (state registration number 0124U000003); implementation of the international project (Erasmus+ Module Jean Monnet) "European inclusive circular economy: post-war and post-pandemic module for Ukraine (EICEPPMU)" 2022-2025, registration number 101085640). The research results have been applied by Jiuquan Yuanda Agriculture Co., Ltd. in the company's development strategy and national international economic strategy deployment (Certificate JIU No. 17 from April 28, 2025); the research results have been adopted by the School of Marxism of Jiuquan Vocational and Technical University and applied to scientific research, teaching applications, and institutional settings within scientific research institutions (Certificate JIU No. 27 from April 27, 2025).

The purpose and objectives of the research. The purpose of the dissertation is the scientific substantiation of the theoretical and methodological foundations of one belt one road initiative as global inclusive growth strategy of PRC and the development its multi-faceted implementation model that amend the future economic development trajectory based on changes in the inclusive growth vector.

Based on the purpose of the research, the following objectives are set in the research:

- to construct a BRI-oriented theoretical framework of inclusive growth strategy;
- to examine the theoretical concepts of the Belt and Road Initiative;
- to research the Geopolitics of Economic Corridors within the Theory of Global Economic Relations;
- to analyze the China's inclusive development;
- to evaluate the inclusive development in BRI's participating countries;
- to estimate the challenges and risks for BRI implementation;
- to identify the strategic implications of the BRI for global governance;
- to propose the ways of future development trajectory of the BRI;
- to develop the key vectors of future inclusive development under the BRI.

The object of research is one belt one road initiative.

The subject research is a set of theoretical and applied aspects that determine the one belt one road initiative as global inclusive growth strategy of PRC.

Methods of research. To achieve the defined purpose, the dissertation thesis used a set of research methods (theoretical, historical, empirical, and others), the unity of which made it possible to fulfil all the outlined tasks. This research employs a multidisciplinary methodological approach combining qualitative and quantitative techniques to analyze the "One belt one road" Initiative as a global strategy for inclusive development. The study draws primarily on policy analysis, comparative case studies, and document-based content analysis, supported by selective use of descriptive statistics and geoeconomic indicators where relevant. The first methodological pillar involves thematic content analysis of official Chinese policy documents, such as white papers, speeches, bilateral agreements, and reports by institutions including the

National Development and Reform Commission (NDRC), Ministry of Commerce, and the Belt and Road Portal. These primary materials are examined to identify the normative framing, strategic goals, and institutional logic underlying the BRI. Secondly, the study employs comparative case study analysis to evaluate BRI implementation across different regions particularly Central and Eastern Europe, Central Asia, and Sub-Saharan Africa. This approach facilitates identification of region-specific opportunities, challenges, and development outcomes, thereby illuminating the Initiative's differentiated impact on partner countries. In addition, regression analysis is applied to assess the relationship between China's trade engagement and changes in Human Development Index across selected Global South countries, enhancing the empirical depth of the research. Additionally, desk-based secondary data analysis is used to interpret relevant economic and development indicators (e.g., FDI flows, infrastructure investment, trade volume) sourced from international databases such as the World Bank, UNCTAD, and the AIIB. These data serve to triangulate the qualitative findings and support policy evaluation. Throughout the research process, a critical-analytical lens is applied to question assumptions, assess policy coherence, and explore the balance between China's strategic ambitions and the global public goods dimension of the BRI. The combination of theoretical inquiry and empirical observation allows for a nuanced understanding of how the BRI operates as a complex global development instrument.

Scientific novelty of the research results consists in establishing scientific substantiation of the theoretical and methodological foundations of one belt one road initiative, the concept of its transformation as global inclusive growth strategy of PRC and the development its multi-faceted implementation model that amend the future economic development trajectory based on changes in the inclusive growth vector

The following most important scientific results were obtained in the research:

for the first time:

– developed the model of inclusive development of the PRC within the framework of the implementation of the "One Belt One Road" Initiative, which is based on the strategic correction of the future trajectory of economic development in

accordance with the change in the vectors of inclusive growth, with an emphasis on multilateral governance, green development, debt sustainability, development of the digital economy, social inclusion and coordination with the global sustainable development goals;

improved:

– the empirical benchmark of the concept of economic development through an in-depth study of the trajectory of the PRC's domestic inclusive development, with an emphasis on poverty alleviation, environmental sustainability and evolution in the conditions of the "new normal", which allowed to strengthen the understanding of inclusive growth in conditions of uncertainty;

– the structured roadmap for the future development trajectory of the "One Belt One Road" Initiative by strengthening the focus on "green" development, multilateral governance and digital transformation, which allowed to outline the mechanism for benefit distribution and the strategic toolkit of state policy in the context of sustainable and inclusive global development;

– the methodology for analyzing inclusive growth by conducting interregional assessments of the countries participating in the "One Belt One Road" Initiative using econometric regression and case studies, which helped to identify the heterogeneity of development problems and develop a practical understanding of regional adaptation mechanisms and the framework for their cooperation;

further developed:

– the ideological and structural connotations of the "One Belt One Road" Initiative by deepening the theoretical foundations within the framework of globalization and regional integration, which allowed to narrow the theoretical categorization of the initiative in the global economic discourse;

– the comprehensive risk assessment system by categorizing key threats, including resource imbalances, financial instability, geopolitical backlash and pressures on resilience, which made it possible to substantiate the importance of the strategy of inclusive growth within the framework of the "One Belt One Road" Initiative;

– the geopolitical foundations of “economic corridors”, by analyzing them as institutionalized channels of transnational communication and strategic cooperation, which made it possible to rethink these corridors not only as logistical routes, but also as tools of global economic governance and regional integration.

The practical value of the results. The practical significance of the results of the dissertation is that the main theoretical provisions of the study provide policy-relevant insights for Chinese and partner country stakeholders on improving project sustainability, benefit-sharing, and institutional coordination. The findings can assist policymakers, researchers, and international organizations in designing more balanced, transparent, and mutually beneficial cooperation models under the BRI framework.

Personal contribution of the applicant. Dissertation work is self-exploration research. The theoretical propositions, proposals and results presented for defence were obtained by the author personally. From the scientific publications published in co-authorship, the work uses only those provisions that are the result of the author's personal research.

Approbation of the results of the dissertation. Approbation of the results of the dissertation. The main results of the dissertation were discussed at international scientific and scientific-practical conferences: International scientific and practical conference of young scientists “Economic and social development of Ukraine in the XXI century: national vision and challenges of globalization” (Ternopil, 2022); International scientific and practical conference of young scientists and students “Innovative processes of economic and socio-cultural development: domestic and foreign experience” (Ternopil, 2022); International scientific and practical conference of young scientists “Economic and social development of Ukraine in the XXI century: national vision and challenges of globalization” (Ternopil, 2023); International scientific and practical conference of young scientists and students “Innovative processes of economic and socio-cultural development: domestic and foreign experience” (Ternopil, 2023); International scientific and practical conference of young scientists and students “Innovative processes of economic and socio-cultural development: domestic and foreign experience” (Ternopil, 2024); International

scientific and practical conference of young scientists and students “Innovative processes of economic and socio-cultural development: domestic and foreign experience” (Ternopil, 2025).

The main scientific developments regarding the model of inclusive development of the PRC within the framework of the implementation of the “One Belt One Road” Initiative will be approved by the Department of International Economic Relations in a scientific and technical report based on the results of: fundamental state budget funding research “Concept of recovery and green reconstruction of Ukraine” (state registration number 0124U000003); the international project (Erasmus+ Module Jean Monnet) “European inclusive circular economy: post-war and post-pandemic module for Ukraine (EICEPPMU)” 2022-2025, registration number 101085640). The research results have been applied by Jiuquan Yuanda Agriculture Co., Ltd. (Certificate JIU No. 17 from April 28, 2025); the School of Marxism of Jiuquan Vocational and Technical University and applied to scientific research, teaching applications, and institutional settings within scientific research institutions (Certificate JIU No. 27 from April 27, 2025).

Publications. The main results of the dissertation research were published in 11 articles with a total volume of 3.76 p.s. (of which the author personally owns 2.98 p.s.), including: 3 – publications in Journals of category “B” of the List of scientific and specialized publications of Ukraine by specialty: 292 “International Economic Relations”; 2 – publication in international periodical scientific Journal; 6 – publications in Conference Paper Proceeding.

The structure and volume of thesis. The dissertation consists of an introduction, three sections, conclusions, a list of reference, and annexes. The total volume of the dissertation is 213 pages, of which 164 pages are the main text. The thesis contains 16 tables, 43 figures, 6 formulas and 2 appendices on 8 pages. The list of reference includes 186 references on 22 pages.

CHAPTER I
THEORETICAL FOUNDATION AND PRACTICAL RESEARCH ON GLOBAL INCLUSIVE GROWTH

1.1. BRI-Oriented Theory of Inclusive Growth Strategy

The BRI is rooted in the historical logic of inclusive growth. The conceptual framework underpinning the Belt and Road Initiative (BRI) is not a sudden innovation, but rather the outcome of a gradual historical trajectory shaped by evolving global development paradigms. This dissertation, uses the term "One Belt One Road" in its original title to reflect the initiative's historical naming and academic convention at the time of writing. However, for clarity and consistency, the study primarily employs the more widely recognized and current designation—the Belt and Road Initiative (BRI)—throughout the text. Among these, the theory of inclusive growth has played a particularly formative role. As international economic thought has progressively shifted from purely output-driven models to those emphasizing equity, sustainability, and shared opportunity, the foundations were laid for initiatives that prioritize not just expansion, but also balanced participation in development outcomes. The BRI reflects this intellectual progression by integrating the pursuit of economic openness with efforts to bridge developmental asymmetries, promote infrastructure-led integration, and encourage deeper regional cooperation.

The global economic landscape has experienced periods of volatility, accompanied by widening disparities both across regions and within individual countries. Empirical studies, such as those conducted by the World Bank, highlight this growing inequality; for instance, the global income inequality coefficient increased significantly from 0.69 in 1929 to 0.83 by 1992, as reported in the World Development Report 2006 [7]. In response to these persistent and deepening gaps, the notion of inclusive growth has gained prominence as a vital framework aimed at mitigating inequality. This concept emphasizes not only the expansion of economic output but also the equitable distribution of opportunities and benefits, seeking to ensure that prosperity reaches a broader spectrum of society. Inclusive growth thus represents a

strategic paradigm shift, addressing the complex socio-economic challenges posed by uneven development and aiming to foster sustainable, balanced progress.

In the late 1940s, British economist R.F. Harrod and American economist E.D. Domar proposed Harrod and Domar′s framework based on J.M. Keynes theory (see fig.1.1). The model, which is also a classic model of the early theory of economic expansion, emphasizes the interconnection between capital accumulation, saving rates, and growth.

Fig. 1.1: Sketch of Harrod-Domar Model

Source: [Author]

The Solow growth model, initially developed by economists Robert Solow and Trevor Swan in 1956 [11], remains a foundational framework in the study of long-term economic growth. This neoclassical model was designed to examine the underlying factors that drive sustained increases in a nation′s output over time (see fig. 1.2). It incorporates key variables such as the rate of capital accumulation, population and labor force growth, savings behavior, and technological advancement, providing a simplified yet insightful analytical structure to understand the mechanics of economic expansion. By focusing on how capital deepening and technological progress influence output per worker, the model highlights the importance of productivity improvements in achieving long-term growth.

However, despite its strengths, the Solow model has notable limitations. It does not adequately account for the unequal distribution of income and its implications for aggregate demand and investment. Moreover, the model assumes perfectly functioning markets and homogenous agents, thereby overlooking critical real-world complexities such as institutional inefficiencies, structural market failures, and socio-economic diversity among populations. As such, while valuable as a theoretical tool, the model

must be supplemented with alternative approaches to fully capture the multifaceted nature of contemporary economic development.

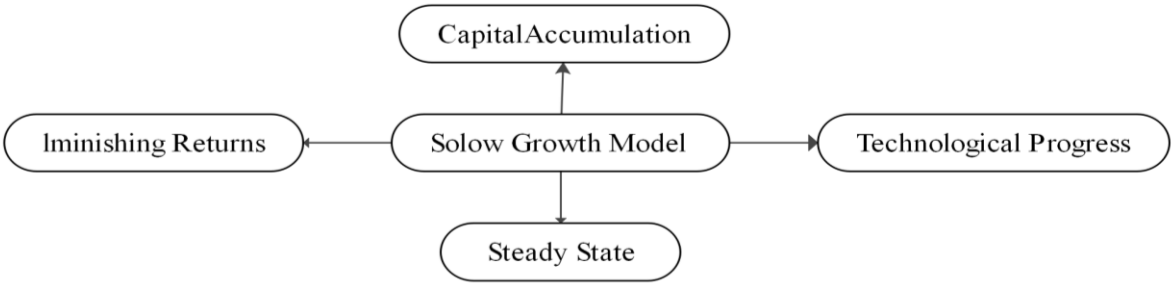

Fig. 1.2. Sketch on model of Solow-growth

Source: [Author]

In the mid-1980s, endogenous growth theory began to emphasize the critical influence of factors such as education and innovation on economic progress. This perspective not only introduced a more nuanced understanding of growth mechanisms, but also broadened the policy landscape for development strategies. Against this backdrop, by the 1990s, global institutions like the United Nations Development Programme (UNDP) gradually adopted "inclusiveness" as a core principle for future development agendas. The World Bank proposed the notion of "Pro-Poor Growth," while the United Nations launched the Sustainable Development Goals (SDGs), highlighting the importance of ensuring that all individuals are included in the process of human development.

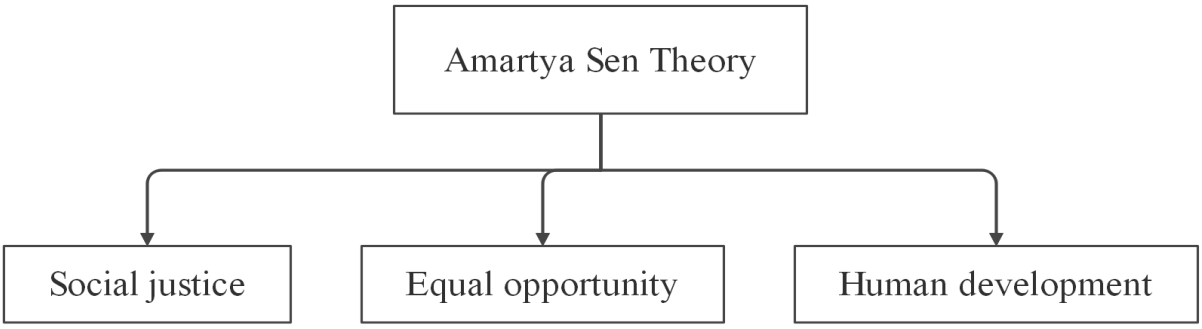

Fig.1.3. Sketch of Amartya Sen's theory on inclusive growth

Source:[Author]

Amartya Sen’s Development as Freedom and his capability approach extend the discussion of inclusive growth into a broader framework centered on human well-being.

This theory shifts the focus of economic development away from mere income increases, highlighting instead individuals' capabilities to fulfill their potential and exercise meaningful choices in life [12]. In this context, the concept of human development provides the philosophical and ethical underpinning for inclusive growth (see fig.1.3).

The concept of inclusive growth emerged as a reflection of evolving global development priorities. Since the early 2000s, numerous governments and global institutions have progressively integrated "inclusiveness" into their development agendas. To illustrate, the United Nations' Sustainable Development Goals (SDGs) highlight the pursuit of broad-based and enduring economic progress, reducing disparities, and fostering inclusive societies [8].

Human capital theory coincides with the concept of the BRI. As a key theoretical basis in modern economic growth research, human capital theory emphasizes the core role of knowledge accumulation and skill improvement in promoting sustainable economic development. In his endogenous growth theory, Paul M. Romer proposed that technological progress is not a simple endowment of external conditions, but a dynamic process gradually formed through R&D investment and human capital accumulation within the economy (Romer, 1990). The Romer model highlights that technology, as a public product with non-exclusive and knowledge spillover characteristics, depends on human capital resources specializing in innovation and R&D. This model breaks through the limitation of the traditional Solow model that technological progress is regarded as an exogenous variable, and points out that improving education level and increasing R&D investment can promote the accumulation of human capital, thereby driving technological innovation and achieving sustainable economic growth and increasing returns. It can be seen that the growth path centered on human capital emphasizes the key position of innovation and learning in improving overall production efficiency.

At the same time, Robert E. Lucas Jr. introduced the perspective of externality effects in his theoretical discussion of human capital accumulation and economic

growth, pointing out that individual human capital not only directly improves their labor productivity, but also actively promotes the overall productivity of society through knowledge diffusion and skill sharing (Lucas, 1988). The Lucas model explains the dynamic mechanism of human capital accumulation and emphasizes the important impact of the time allocation of labor between production and education and training on the growth rate of human capital. Through continuous education investment and skill improvement, the economy can maintain a stable growth trajectory, avoid the decline of long-term growth momentum, and achieve the coordinated development of human capital and material capital. At the same time, Lucas specifically pointed out that the externality characteristics of human capital require the government and society to provide sufficient public support for education and training activities to maximize their social benefits (see fig.1.4).

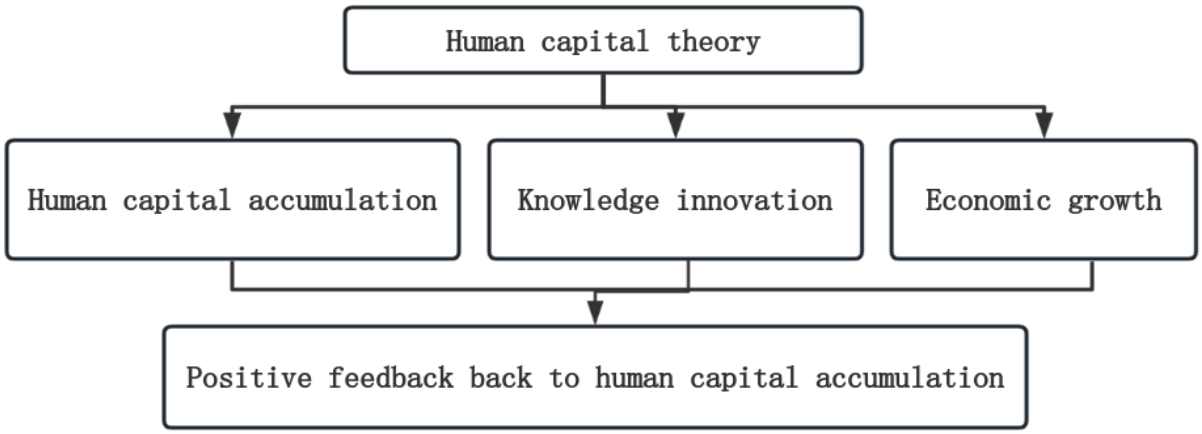

Fig.1.4. Human capital theory framework

Source:[Author]

Putting human capital theory in the perspective of the Belt and Road Initiative will help us to have a more comprehensive and in-depth understanding of the endogenous growth dynamic mechanism of the Initiative in promoting regional economic integration and sustainable development. The Belt and Road Initiative is not only an international cooperation platform covering a wide range of fields, but also a core that is not limited to traditional infrastructure construction and trade facilitation. It also emphasizes the cultivation of human capital and cross-border flow. Based on Romer and Lucas' theory on human capital and economic growth, human capital is not

just a simple superposition of labor, but also a comprehensive embodiment of knowledge, skills and innovation ability, and is the fundamental driving force for promoting technological progress and economic prosperity. Given the different development stages and diverse industrial structures of countries along the Belt and Road, improving the overall quality of human capital, especially promoting talent mobility through education and skills training, has become the key to narrowing the regional development gap and promoting win-win development.

Specifically, under the framework of the Belt and Road Initiative, large-scale educational cooperation and vocational skills training projects can be regarded as systematic investment in human capital, which not only covers the traditional higher education system, but also includes vocational education and innovation ability cultivation for the needs of the frontier industries. This is consistent with the theory in the Lucas model that promotes human capital accumulation through the reasonable allocation of labor time between production and education. By enhancing the technical skills and innovative qualities of the workforce, countries along the route can more effectively absorb international advanced technology and management experience, promote the optimization and upgrading of industrial structure, and stimulate the internal vitality of economic growth. This industrial upgrading driven by human capital is one of the foundations for the Belt and Road Initiative to achieve sustainable development goals.

At the same time, the knowledge sharing and technological cooperation mechanism promoted by the Belt and Road Initiative fully reflects the spillover effect of knowledge as a public product emphasized by Romer. By strengthening talent exchange, scientific research collaboration and the construction of innovation alliances, the cross-border diffusion of knowledge and technology has accelerated the pace of innovation and technological accumulation in countries in the region. This positive externality not only improves the overall production efficiency of the region, but also promotes the deep integration and optimization of the global value chain, so that the regional economy develops in a higher value-added and technology-intensive direction. It can be seen that the Belt and Road Initiative is not only the interconnection of

infrastructure, but also the coordinated growth process of human capital and technological capital. It is a concrete manifestation of the endogenous growth theory in international cooperation and regional development practice.

In addition, the inclusive development concept advocated by the Belt and Road Initiative is highly consistent with the goals of educational equity and skill popularization emphasized in human capital theory. Human capital theory points out that only by achieving a general improvement in the skills of the entire population can we ensure the widespread sharing of innovative achievements and promote the sustainable progress of social economy. Based on this point, the "Belt and Road" initiative actively promotes multilateral educational cooperation and talent training, strives to improve the human capital level of developing countries, effectively alleviates the problem of regional development imbalance, and promotes the maximization of social benefits of economic growth. This strategy not only reflects the theory's pursuit of the unity of fairness and efficiency, but also provides an important guarantee for the "Belt and Road" initiative to build a long-term and stable cooperation foundation.

In summary, the human capital endogenous growth theory proposed by Romer and Lucas has injected a solid theoretical foundation into the "Belt and Road" initiative. This theory reveals the inherent connection and interactive mechanism between human capital accumulation, knowledge innovation and technology diffusion, and helps us fundamentally understand the deep driving force of the "Belt and Road" to promote the coordinated development of regional economy. Guided by this theory, it not only helps to improve the scientific nature of policy design and project implementation, but also provides a systematic analytical framework for subsequent effect evaluation, thereby promoting the "Belt and Road" construction into a new stage of high-quality development.

Human capital theory aligns closely with the fundamental objectives of the Belt and Road Initiative (BRI). At its core, human capital theory emphasizes the pivotal role of knowledge accumulation, skill development, and innovation capacity in driving sustainable economic growth. Similarly, the BRI transcends traditional infrastructure

connectivity by prioritizing the enhancement of human capital through education, vocational training, and cross-border talent exchange among participating countries. This synergy underscores how investments in human capital within the BRI framework serve as a crucial mechanism to foster regional integration, reduce developmental disparities, and stimulate endogenous growth across the diverse economies involved.

Construction of a Multi-Dimensional Inclusive Development Model. By building a diverse and inclusive development pattern, the Belt and Road Initiative can better meet the development needs of different countries and promote a new situation of mutually beneficial and win-win global cooperation. It can be achieved by integrating the theories discussed above and the factors identified. This model, known as the Multidimensional Growth Index (MGI), emphasizes key indices such as the Economic Growth Composite Index (EGCI), Income Distribution Composite Index (IDCI), Social Opportunity Composite Index (SOCI), and Environmental Sustainability Composite Index (ESCI). The model provides a dynamic and comprehensive assessment tool for inclusive development, thus serving as a robust foundation for the development of policies and strategic planning.

The formula is a weighted average of the four dimensional composite indices:

$$MGI = w1 \times (EGCI) + w2 \times (IDCI) + w3 \times (SOCI) + w4 \times (ESCI) \qquad (1)$$

In particular, the quality of economic growth is assessed not only by total GDP growth but also by the growth impact on various social groups. The parameters w1, w2, w3, and w4 represent the influence of factors such as economic development, income distribution, social opportunity, and environmental sustainability, and are assigned weighted values based on their impact on the inclusive economic growth index. The sum of these coefficients equals 1 (100%).

To compute the inclusive growth index and achieve the outlined goals, it is necessary to design and calculate the composite indices for economic growth (EGCI), income distribution (IDCI), social opportunity (SOCI), and environmental sustainability (ESCI) within the model, considering multiple dimensions.

The economic growth dimension measures the rate and quality of growth in the economy, with indicators such as GDP growth rate (GGR), GDP per capita (GC), and

labour productivity (LP). GDP growth captures the overall economic expansion, while GDP per capita reflects the benefits of growth, particularly in terms of the living standards of ordinary citizens. Labour productivity assesses workforce efficiency and industrial progress, indicating the quality of economic growth. A weighted average of these factors results in the composite growth index formula:

$$EGCI = w1 \times (GG) + w2 \times (GC) + w3 \times (LP) \quad (2)$$

Among them, w1, w2, and w3 represent the weight assigned to each indicator.

Next, the Income Distribution Composite Index (IDCI) evaluates how income is distributed across various social groups, with particular attention given to disparities between urban and rural areas, regions, genders, and occupations. This indicator focuses on three key factors: the Gini coefficient, the Wealth Distribution Index (WDI), and the Relative Poverty Rate (RPR). The composite index for income distribution is calculated by taking a weighted average of these factors:

$$IDCI = w1 \times (Gini) + w2 \times (WDI) + w3 \times (RPR) \quad (3)$$

Among them, w1, w2, and w3 denote the relative importance assigned to each indicator, which may be adjusted based on specific policy goals or analytical emphasis. In the composite index, the Gini coefficient ranges from 0 to 1, with higher values indicating greater income inequality in Chengdu. To align the directionality of the indicators, the adjusted value “1 minus Gini coefficient” is used for normalization.

Furthermore, the Social Opportunity Composite Index (SOCI) assesses fairness in areas such as education, healthcare, and employment, emphasizing balanced access across different social groups. The components of this index include metrics such as the Education Opportunity Index (EdOI), the proportion of the population covered by health insurance (HICR), the Employment Opportunity Index (EmOI), and the Housing Security Index (HSI). Educational indicators cover adult literacy rates, the coverage of compulsory education, and average years of schooling. Health-related factors comprise indicators such as average life expectancy, infant mortality rate, and levels of public healthcare investment. Employment opportunities are analyzed through aspects such as urban-rural and gender-based employment disparities, as well

as the inclusiveness of the labor market. A weighted synthesis of these variables results in the composite employment opportunity index:

$$SOCI = w1 \times (EdOI) + w2 \times (HICR) + w3 \times (EmOI) + w4 \times (HSI) \quad (4)$$

Among them, w1, w2, w3, and w4 represent the respective significance of each variable, and their values can be determined based on local conditions through expert consultation, review of existing academic studies, and comparative evaluation of the relevance of each parameter across different settings.

The final component, the Environmental Sustainability Composite Index (ESCI), places emphasis on factors related to ecological resilience and low-carbon development. This paper takes into account several key metrics: carbon intensity (CEI), energy utilization efficiency (EEI), the share of renewable energy (RES), water efficiency (WUE), and air pollution levels measured by the Air Quality Index (AQI). Carbon intensity refers to emissions of carbon dioxide per unit of GDP and reflects the degree to which economic activities are aligned with environmental objectives. The energy efficiency index captures how much economic output is achieved per unit of energy consumed, serving as an indicator of resource productivity. Utilization of natural resources, such as freshwater, land, and forest cover, is indirectly reflected in related variables like WUE. The proportion of renewables in overall energy consumption—such as wind and solar power—offers insight into transitions toward greener energy structures. Water efficiency measures how effectively water resources are allocated and used, indicating progress toward sustainable water governance. Lastly, AQI provides a standard measure for ambient air quality, reflecting the extent of atmospheric pollution. These variables, once standardized and weighted, are aggregated to construct the final index for environmental sustainability:

$$ESCI = w1 \times (CEI) + w2 \times (EEI) + w3 \times (RES) + w4 \times (WUE) + w5 \times (AQI) \quad (5)$$

The w1, w2, w3, w4, w5 are weights of each indicator. Since carbon intensity and air quality are negatively correlated indicators, the method of quantifying the environmental sustainability index is similar to that of the "Gini coefficient" above.

The relevance of the BRI to global inclusive development policies [19]. In the domain of global comparative studies on inclusive development strategies, the

approach adopted by developed nations markedly contrasts with that of developing countries. This divergence stems from the former's well-established economic frameworks, comprehensive social protection systems, and advanced industrial foundations. This analysis focuses on the differences between the Belt and Road Initiative and inclusive policy frameworks in developed economies.

In crafting inclusion-oriented development measures, the United States has pursued strategies encompassing fiscal adjustments, education reform, and innovation-led employment initiatives. For instance, the enactment of the Tax Cuts and Jobs Act in 2017 aimed to invigorate business investment and consumer spending by reducing corporate taxation and modifying the progressivity of personal income tax bands, thereby supporting broader economic expansion. At the same time, to mitigate disparities in access to education, the U.S. has worked to reduce educational inequity across socioeconomic groups by expanding federal grant programs and promoting science, technology, engineering, and mathematics (STEM) education as a means of distributing high-quality educational opportunities [20].In contrast, the Belt and Road Initiative pursues inclusion through cross-border infrastructure, educational cooperation, and development financing, focusing on narrowing disparities between countries. While the U.S. model emphasizes internal structural adjustment, the BRI fosters regional integration and shared growth, highlighting different but complementary paths to inclusive development.

Germany, as a representative of the social market economy, balances labour market flexibility with social security to promote inclusive growth. Reforms such as the Hartz measures have enhanced employment flexibility while addressing structural unemployment through targeted training, employment support, and flexible retirement policies. In comparison, the Belt and Road Initiative adopts a broader international cooperation approach, focusing on infrastructure connectivity, human capital development, and policy coordination to foster inclusive development across diverse countries. While Germany's model emphasizes domestic labour market adjustments to ensure social stability, the BRI prioritizes cross-border integration and shared

economic opportunities to reduce regional disparities. Both approaches highlight the importance of balancing efficiency and equity within their respective contexts.

Japan faces unique demographic challenges, including an ageing population and shrinking workforce, and has responded by enhancing productivity and fertility through social protection reforms and tax adjustments, such as increasing the consumption tax to sustain welfare funding. Additionally, policies encouraging female and senior workforce participation and expanding childcare services aim to offset labor shortages and stimulate economic growth. In contrast, the Belt and Road Initiative focuses on fostering inclusive growth across multiple countries by promoting infrastructure connectivity, human capital development, and regional cooperation. While Japan's approach addresses demographic and social sustainability domestically, the BRI emphasizes cross-border economic integration and shared development opportunities to bridge gaps among diverse partner nations. Both strategies reflect tailored responses to promote inclusive and sustainable development within their specific contexts [21].

From the perspective of policy effects, this paper employs advanced multilevel modeling techniques to evaluate the practical outcomes of inclusive growth policies in developed countries, incorporating multidimensional indicators such as social welfare metrics, labor market dynamics, and tax systems. Using instrumental variable approaches and Panel Threshold Regression Models, we analyze the nonlinear impacts of these policies, accounting for tipping points and adjustment processes during implementation. Comparative analyses reveal that divergent national strategies for fostering inclusive growth reflect distinct priorities in balancing economic quality and social welfare provision, shaped by governance capacities, societal expectations, cultural values, and responses to global economic shifts.

In this context, the BRI offers a complementary framework for inclusive development, particularly within the realm of international economic cooperation. While developed countries tend to focus on domestic policy calibration, the BRI emphasizes cross-border collaboration in infrastructure, human capital, and policy coordination to promote shared prosperity among diverse economies [22]. The

initiative's multi-dimensional, partnership-based approach aligns with the principles of transparency, systematic coherence, and responsiveness to demographic and developmental needs identified as crucial in successful inclusive growth strategies.

Moreover, the experience of advanced economies in balancing growth and fairness provides valuable lessons for the BRI, as it navigates complex regional disparities and varied institutional contexts. The BRI's focus on inclusivity through connectivity and capacity-building complements national-level policies by fostering integration and reducing development gaps on a broader scale. Thus, incorporating insights from developed countries' inclusive growth policies can help refine the BRI's implementation framework, enhancing its effectiveness in promoting sustainable and widely shared economic progress. Future research could deepen comparative studies to further elucidate how international initiatives like the BRI and national policies interact to advance inclusive development globally.

The BRI strives to balance the inequality of global social inclusive development. The uneven global distribution of socially inclusive development represents a significant challenge that the Belt and Road Initiative (BRI) seeks to address. Across participating countries, disparities in economic development levels, social welfare systems, educational opportunities, and institutional capacities contribute to divergent growth outcomes and uneven access to the benefits of globalization. This fragmentation undermines regional stability and sustainable development, reinforcing existing inequalities both within and between nations.As global economic interconnectedness continues to accelerate, the concept of social inclusion has become increasingly central to international development agendas. Over the past few decades, the interconnectedness of economies through trade, technology, and communication has led to more opportunities for participation in the global economy, raising awareness about the importance of inclusivity across nations.

While considerable progress has been made globally in promoting social inclusion, the path toward achieving comprehensive and equitable outcomes remains uneven and fraught with persistent challenges. Many countries have adopted policies aimed at reducing exclusion and improving access to essential services such as education,

healthcare, and employment. However, the actual implementation of these measures often varies significantly due to differing institutional capacities, resource constraints, and socio-political contexts. As a result, the overall advancement toward inclusive development tends to be fragmented, with notable disparities both within and between regions.

In some areas, especially where strong governance frameworks and sustained investments exist, inclusive policies have yielded measurable improvements in social indicators and reduced marginalization. In contrast, other regions—particularly those facing political instability, structural inequality, or limited fiscal space—continue to experience slow or stagnant progress. Moreover, even within countries showing general improvement, certain vulnerable groups, such as ethnic minorities, rural populations, or persons with disabilities, may remain disproportionately excluded from the benefits of development.[14].

To assess whether policies are enhancing well-being, it is essential to look "beyond GDP" and take into account a broader spectrum of social, economic, and environmental impacts on people's lives. This also allows to understand what matters to people and what drives their behaviours, providing another channel of action to policies. The OECD is leading efforts to develop indicators that measure the well-being of individuals, families, society, future generations and the planet at a time of deep changes and transformations (see fig.1.5).

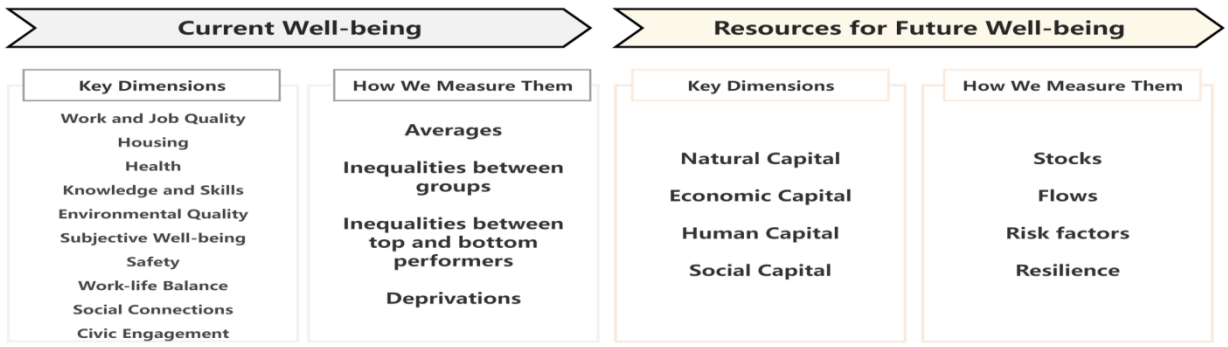

Fig.1.5. A framework for improving current and future well-being

Source:[23]

Referring to the Human Inclusive Development Indicators given by the Economic Cooperation Organization, and focusing on three dimensions—educational equity,

health and well-being, and gender and ethnic equality—the authors seek to analyze the underlying factors driving socially inclusive growth and its broad influence on economic development.

Firstly, as a key indicator of social inclusion, educational equity plays a crucial role in shaping human capital and ensuring the long-term growth of society. By comparing the distribution of educational resources and the accessibility of education, we can observe significant disparities in educational equity between developed and developing nations. A cross-sectional and longitudinal analysis of UNESCO's educational achievement data and the World Bank's per capita education investment indicators reveals that in certain developing nations, despite increased investment in education in recent years, there has been no fundamental improvement in either the quality of education or access to it, largely due to issues like the urban-rural divide, gender disparities, and social class obstacles. As a result, while progress has been made in terms of education coverage, improvements in educational equity have lagged behind, creating a hidden barrier to sustainable social growth [24].

Secondly, improving healthcare accessibility is a critical element of inclusive social development. In particular, low-income nations, due to inadequate healthcare infrastructure and fragile public health systems, face challenges in delivering comprehensive prevention, control, and treatment services to all residents, which hampers the overall effectiveness and consistency of public health efforts. Furthermore, health disparities often mirror broader societal divides, suggesting that issues such as income inequality can hinder the achievement of inclusive growth.

Thirdly, gender and racial equalization to a certain extent depends on social inclusion growth strategy implementation effectiveness. The present situation that the most important issue confronted by the global community is the gap between gender wage equalization, and employment opportunity inequality, gender political participation gap.Also, racial discrimination has persistently been profound in some states and regions that not only impedes individuals' economic engagement and social inclusion but also hamstrings societal development and advancement.

The BRI's comprehensive framework, which integrates infrastructure connectivity, policy coordination, financial cooperation, and people-to-people exchanges, is strategically designed to mitigate these disparities. By promoting cross-border investments and fostering human capital development, the initiative aims to create more balanced and inclusive growth corridors that bridge the development gaps among partner countries. Addressing the uneven distribution of social inclusion thus becomes both a fundamental objective and a practical necessity for the BRI, underpinning its vision of shared prosperity and mutually beneficial cooperation.

In this sense, the initiative not only facilitates economic integration but also seeks to harmonize social development standards, enhance institutional capacities, and expand equitable access to opportunities across diverse regions. Overcoming the uneven global distribution of socially inclusive development is therefore central to realizing the full potential of the BRI as a vehicle for inclusive and sustainable regional growth.

Ensuring multi-dimensional inclusive growth through the BRI [19]. Long-term risk mitigation for inclusive growth necessitates a multidimensional policy framework that addresses structural vulnerabilities, promotes equitable access to development opportunities, and enhances systemic resilience. In the analysis of global inclusive development strategies, it is essential to consider risks and the preparedness to manage these risks as crucial implementation factors. Several types of risks pose challenges to inclusive growth, primarily stemming from economic, political, and environmental sources. For example, economic risks include macroeconomic instability, financial market fluctuations, and uncertainty in investment returns. Political risks involve challenges such as policy discontinuity, inconsistent policy implementation, international conflicts, and trade disputes. Environmental risks encompass the rising frequency of natural disasters, ecological degradation, and the effects of climate change. Addressing these risks effectively is a significant challenge when implementing an inclusive development strategy. A thorough analysis of these risks, along with the formulation of appropriate preventive measures, is crucial for successful policy execution.

The primary strategy for risk prevention involves establishing a multi-tiered risk response framework. This includes enhancing the resilience of macroeconomic policies by creating a macro-prudential toolkit that incorporates various regulatory measures, such as monetary and fiscal policies, along with financial regulations. These tools help ensure swift responses during periods of market instability and safeguard overall economic stability. Furthermore, it is crucial to refine the financial regulatory system to detect and mitigate potential financial risks proactively. This can be achieved through the implementation of advanced monitoring and analysis technologies, including big data and artificial intelligence for risk modeling. Strengthening cross-border regulatory cooperation is also necessary to address the risks associated with global financial integration [22]. Additionally, improving policy transparency and consistency, along with establishing long-term mechanisms, will ensure steady policy formulation and implementation, reducing market volatility caused by frequent policy adjustments. On a global scale, multilateral institutions should play a vital role in reinforcing international regulations that protect vulnerable populations, thereby preventing conflicts and promoting political stability [24].

Secondly, establishing an effective risk communication system is a critical element of risk management. Communicating risk-related information enhances the capacity of various sectors to respond to risks. A comprehensive risk warning mechanism helps increase societal awareness about potential risks. This requires the creation of trustful relationships among government agencies, businesses, the media, and the public to ensure swift and accurate information dissemination during risk events.

Finally, the use of innovative financial instruments adds another dimension to risk prevention. This could involve financing environmental initiatives through green and climate bonds in the bond market, or using innovative tools like the Disaster Risk Management Financial Instrument (DRMI) by KfW, which attracts private capital for risk prevention through market-based approaches [25].

The Belt and Road Initiative (BRI) can be understood as a strategic long-term mechanism for mitigating systemic risks to inclusive growth, particularly in developing

regions. By addressing structural barriers—such as infrastructure deficits, limited market connectivity, and underdeveloped industrial capacity—the BRI contributes to reducing spatial and economic disparities. Unlike short-term aid or isolated interventions, it offers an integrated approach that combines hard infrastructure investment with softer dimensions of development, including vocational training, digital access, and institutional cooperation. This multidimensional design enhances national resilience by strengthening both economic capital and human capital.

Moreover, the initiative fosters cross-border cooperation and long-term planning, which are critical for buffering against external shocks and ensuring continuity of development efforts. In environments often characterized by volatility and fiscal constraints, BRI projects mobilize long-term financing and encourage shared governance frameworks that can help stabilize local conditions. In doing so, the initiative not only supports immediate economic advancement but also reinforces the foundations of sustained and equitable growth. Through this lens, the BRI functions as a risk-sensitive development model—one that integrates inclusivity with resilience, aiming to secure future well-being across multiple dimensions.

1.2 Theoretical concepts of the Belt and Road Initiative

The BRI within Globalization and Regional Economic Integration. The Belt and Road Initiative (BRI) is not merely a geopolitical or economic undertaking; it is a reflection of the evolving values of global civilization, rooted in the enduring idea of a shared future for humanity. Its ideological and cultural origins can be traced to the ancient Silk Road, which for centuries functioned as more than a commercial artery. That historic network laid the groundwork for sustained interactions in knowledge, belief systems, arts, and scientific advancement between Asia, Europe, and parts of Africa. It fostered an early prototype of globalization—albeit in a fragmented form—by encouraging reciprocal understanding and peaceful exchanges among distinct civilizations.

In inheriting this rich historical legacy, the BRI emerges as a contemporary response to the demands of an increasingly interdependent world. It is designed not only to promote physical connectivity through roads, railways, ports, and digital corridors, but also to facilitate deeper ties in areas such as education, cultural cooperation, public health, and environmental governance. By advancing frameworks for multilateral dialogue and institutional collaboration, the initiative highlights the importance of normative cohesion in international development. What distinguishes the BRI from conventional development programs is its embedded cultural and philosophical vision. Rather than imposing a singular development model, it encourages respect for diversity, shared learning, and inclusive policymaking, resonating with principles drawn from both Eastern wisdom and universal human values. In this sense, the BRI operates as a platform for moral and civilizational interaction, where cooperation is premised on mutual benefit rather than zero-sum competition.

Moreover, the BRI illustrates a shift in global governance thinking—from fragmented regionalism to integrated partnership, and from transactional diplomacy to value-oriented cooperation. It seeks to build communities of common destiny that transcend narrow national interests, aiming instead to cultivate stable, equitable, and peaceful development environments. As such, the initiative should be viewed not only

through the lens of economic return but as a strategic blueprint for fostering trust, reducing developmental asymmetries, and enabling global solidarity in the 21st century.

In the aftermath of the 2008 global financial crisis, the world economy entered a prolonged phase of stagnation, marked by declining growth potential and structural imbalances across both developed and emerging markets. Many countries found themselves grappling with the dual challenges of economic slowdown and the pressing need for systemic transformation. Within this global context of uncertainty and shifting economic paradigms, China put forward the Belt and Road Initiative (BRI) as a strategic platform to revitalize international cooperation. Rather than seeking unilateral gains, the initiative emphasizes shared prosperity through infrastructural integration, trade facilitation, and deeper people-to-people ties. By strengthening transregional connectivity, it aims to unlock latent growth potential and support the long-term development agendas of partner countries.

Crucially, the proposal draws on the region's prior experience of economic interdependence, especially the integration of East Asia into global value chains. China's central position in the world manufacturing network and its capacity for sustained economic expansion offer both impetus and resources to advance the BRI framework. Simultaneously, many countries situated along the proposed routes are actively seeking opportunities for industrial upgrading and infrastructure modernization, thereby generating mutual demand dynamics that align well with the goals of the initiative. In this way, the BRI builds on existing economic complementarities to create new development momentum.

Moreover, the emergence of supportive financial institutions has played a pivotal role in advancing the implementation of the initiative. The establishment of the Asian Infrastructure Investment Bank (AIIB), for instance, marked a significant step in expanding multilateral financing channels. By offering diversified funding mechanisms and aligning investment priorities with infrastructure and connectivity goals, the AIIB has reinforced regional cooperation and reduced reliance on traditional financial architectures. Its multilateral governance model further strengthens collective

decision-making and enhances the legitimacy of transnational development financing, paving the way for a more inclusive and coordinated global economic order.

In September and October 2013, Chinese President Xi Jinping visited Kazakhstan and Indonesia and formally proposed the Silk Road Economic Belt and the 21st Century Maritime Silk Road, which together constitute the Belt and Road Initiative. "21st Century Maritime Silk Road", which together constitute the "Belt and Road" initiative. The initiative mainly covers the Silk Road Economic Belt and the 21st Century Maritime Silk Road, with the former emphasizing the construction of land transport networks and the latter focusing on the prosperity of maritime trade. Core elements include policy communication, facility connectivity, trade facilitation, financial integration and people-to-people contact, forming a new model of all-round cooperation. The mutual development of Chinese economy and the economic development demands along the route provide a foundation for the initiative.The emergence of the finance system, namely, the formation of the Asian Investment Bank (ADB) has supplied financial capital for infrastructure financing and has increased the extent and level of multilateralism [27].

The Belt and Road Initiative has gone through many stages of evolution. Since 2013, the Initiative has evolved into a multilevel cooperation platform with broad coverage and rich content. Initially, the Initiative focused on infrastructure development, aiming to promote connectivity between Asia, Europe and Africa through the two pillars of the Silk Road Economic Belt and the 21st Century Maritime Silk Road. In 2015, with changes in the international environment, the initiative was further expanded to emphasis sustainable development, put forward the concept of green development, and focus on ecological protection and the rational use of resources [25].

In 2017, the Chinese government proposed a more comprehensive cooperation framework at the Boao Forum for Asia, including five key areas of policy communication, facility connectivity, trade facilitation, financial flows and people-to-people communication, which promoted deeper cooperation among governments, enterprises, financial institutions and other parties. By now, the scope of the initiative

has been expanded to include finance, culture, science and technology, forming an all-round cooperation system covering economic, political and cultural aspects.

In 2020, in the face of the challenges posed by the new global epidemic, the Initiative had shifted to the digital economy and public health cooperation, emphasizing online cooperation and information-sharing, and promoting the construction of a "digital Silk Road" to help countries strengthen their cooperation in the fight against the epidemic [28]. In addition, the Initiative was integrated with the United Nations Sustainable Development Goals, promoting the digitization of infrastructure and in-depth cooperation in various fields such as education, science and technology, and the humanities, thus highlighting the concept of putting people at the centre of development.

By 2024, more than 160 countries and 40 international organizations have participated in the Belt and Road Initiative, and more than 200 cooperation documents on the construction of the Belt and Road will have been signed, covering 83 per cent of the countries with which China has established diplomatic relations. Along with the evolution of the initiative, the implementation mechanism has also been continuously improved. From the initial thematic meetings and ministerial conferences to the subsequent International Cooperation Summit Forum, a multi-level and multi-channel communication and consultation mechanism has been formed. The BRI insists on dialogue and consultation, joint construction and sharing, win-win cooperation, and exchanges and mutual understanding, and seek the "greatest common denominator" of cooperation with countries along the route. Building the Belt and Road together is a path of peace and cooperation [29] . On the basis of respecting each other's sovereignty, dignity and territorial integrity, each other's development path and social system, and each other's core interests and major concerns, participating countries will strengthen policy communication, facility connectivity, trade facilitation, financial integration and people-to-people contact, so as to achieve the sharing of factors and resources, the complementarity of industrial advantages, and the mutual benefit and win-win situation of the economy. Between 2013 and 2023, China's trade in goods with countries along the Belt and Road will grow from $1.04 trillion to $2.72 trillion, with an average annual

growth rate of 8 per cent. In terms of investment, by the end of 2023, the cumulative two-way investment between China and the countries along the Belt and Road exceeded US$270 billion, and the cumulative investment of overseas economic and trade co-operation zones constructed by Chinese enterprises in the countries along the Belt and Road amounted to US$57.13 billion, which created 421,000 local jobs; in terms of engineering and construction, from 2013 to 2023, the cumulative amount of newly signed contracts and turnover of contracted projects contracted by China in the countries along the Belt and Road exceeded 1.3 trillion yuan respectively. In terms of engineering construction, from 2013 to 2023, the newly signed contracts and completed turnover of China's contracted projects in countries along the routes will exceed US$1.3 trillion and US$900 billion respectively, accounting for more than half of the total amount of contracted projects [8] .

In recent years, the Belt and Road Initiative (BRI) has undergone a notable transformation, gradually evolving into a broadly acknowledged framework for international cooperation that cuts across regions, income levels, and development stages. Far from being limited to a specific geopolitical sphere, the initiative has garnered widespread participation and support from a diverse array of countries and multilateral institutions. Its core emphasis on five major pillars—namely, infrastructure connectivity, policy alignment, trade facilitation, financial coordination, and cultural exchange—has served to deepen mutual trust, expand platforms for cooperation, and create new momentum for inclusive development across continents.

The BRI has not only advanced tangible projects such as transport corridors, energy networks, and communication systems, but also catalyzed soft linkages through dialogue mechanisms, educational exchange, and policy learning. As such, it reflects an increasingly multidimensional approach to globalization, one that values mutual benefit, openness, and developmental complementarity over zero-sum competition.

However, to ensure that the initiative remains adaptive and relevant in a rapidly changing international environment, further refinement is necessary. This includes strengthening multilateral dialogue mechanisms to enable equitable stakeholder participation, fostering institutional innovations that align with global governance

norms, and embedding long-term sustainability principles into the planning and execution of BRI projects. Moreover, enhancing transparency in project financing, environmental standards, and social impact assessments is critical to building international confidence and ensuring that cooperation remains inclusive and mutually accountable.

Ultimately, the continued success of the Belt and Road Initiative hinges on its ability to respond constructively to global challenges such as economic fragmentation, climate change, and widening inequality. By remaining responsive, participatory, and forward-looking, the BRI can play an increasingly vital role in supporting global economic recovery, strengthening resilience against systemic shocks, and advancing a more equitable and integrated international development order.

Core Connotations of the Belt and Road Initiative. The Belt and Road Initiative (BRI) embodies a vision of open cooperation and shared development. Through these pillars, the BRI aims to build a platform for inclusive globalization, mutual learning among civilizations, and long-term economic resilience.

Adhering to the principle of "industry and commerce, joint construction and sharing", promoting infrastructure construction and interconnection, strengthening economic policy coordination and development strategy docking, promoting coordinated and linked development, achieving common prosperity, and jointly building a community with a shared future for mankind is the core of the Belt and Road.Specifically, under the guidance of the principle of "common cause, common construction and sharing", the countries along the Belt and Road should promote policy communication, facility connectivity, smooth trade, financial integration and people-to-people exchanges, so as to jointly build a community of interests, responsibility and destiny with mutual political trust, economic integration and cultural tolerance (see table 1.1).

Table 1.1

Core elements of the Belt and Road Initiative

Core elements of the Belt and Road Initiative	
Policy Coordination	Advocating for countries to strengthen policy coordination within the framework of cooperation, formulate cooperation programmes tailored to national conditions, and create synergies in information-sharing and policy formulation among all parties.
Infrastructure Connectivity	Advocating the smooth flow of logistics through investment in cross-border transport infrastructure, reducing transport costs, enhancing trade facilitation, promoting the free flow of economic factors, strengthening interregional economic ties and covering multimodal transport by land and sea.
Unimpeded Trade	Advocate trade liberalization among countries, reduce tariff and non-tariff barriers, and promote the free flow of goods and services. Promote trade diversification, enhance the resilience and security of the supply chain and ensure the stability of the global industrial chain.
Financial Integration	Advocating the strengthening of financial cooperation, promoting the construction of regional financial systems, providing financing support for "Belt and Road" projects, and encouraging the innovative application of various types of financial instruments.
People-to-People Bond	Emphasis has been placed on cultural exchanges and educational cooperation, and the promotion of mutual understanding of civilizations, with a view to enhancing understanding and trust among peoples. Through in-depth cultural cooperation, we can promote friendly feelings among the peoples of different countries and build civil bonds among the Belt and Road countries.

Source: [31]

The most important goal of policy communication is to narrow the policy differences among countries along the route and promote synergy, efficiency and mutually beneficial cooperation, including policy docking, establishment of communication mechanisms, information sharing and research cooperation (see table 1.2). It aims to coordinate domestic and foreign development strategies, link the construction of the "Belt and Road" with the development plans of countries along the route, clarify how to carry out economic, environmental protection and trade cooperation through bilateral agreements or multilateral cooperation agreements; seek

international cooperation platforms to promote the sharing and exchange of information and research results; carry out academic cooperation and promote information exchange.

Table 1.2

Introduction to some BRI 's policy communication projects

Year	Representative of the projects	Target
April 2012	China-Central and Eastern Europe Cooperation Mechanism	Promote regional development through policy dialogue
July 2013	Framework Agreement on the China-Pakistan Economic Corridor	Provide policy guarantee for project implementation
January 2015	Cooperation Agreement on Infrastructure Construction of the African Union in Central Africa	Support for cross-border railway construction on the African continent
March 2017, April 2019, October 2023	Belt and Road International Cooperation Summit (held periodically)	To provide a platform for regular communication and exchanges among countries along the Belt and Road to enhance understanding and consensus.
June 2018	Kazakhstan's "Bright Road" new economic plan is fully aligned with the "Belt and Road"	Comprehensive cooperation in transportation, industry and agricultural exports

Source: [Author]

Policy communication forms the fundamental cornerstone for achieving synergy in infrastructure connectivity, trade facilitation, financial cooperation, and people-to-people exchanges. Without coordinated policy-level alignment, it is difficult to maintain momentum and depth in other areas of collaboration. Through proactive consensus-building efforts, the Belt and Road Initiative has significantly mitigated misperceptions and skepticism from partner nations, especially along the proposed routes. It has created a broader platform for developing countries to participate in global governance, amplifying their voices in multilateral dialogues. Promoting harmonization in laws, regulations, and policy frameworks contributes to building an enabling institutional environment for regional economic coordination. In addition, policy communication enables strategic alignment between national development plans and the objectives of the BRI. It supports countries in identifying common interests through intergovernmental consultations, multilateral fora, and specialized policy coordination mechanisms. These efforts collectively contribute to trust-building,

reduce political frictions, and lay the groundwork for more resilient and inclusive cooperation frameworks.

Facility connectivity, on the other hand, serves as a tangible and strategic pathway to achieve regional integration under the framework of the Belt and Road Initiative. By focusing on the construction and upgrading of transport, energy, and communication infrastructure, it effectively bridges geographical gaps, enhances cross-border logistics efficiency, and fosters economic interdependence among participating countries. This physical linkage not only boosts trade and investment flows but also lays the groundwork for deeper institutional coordination and people-to-people exchanges across the region. By prioritizing the development of modern infrastructure—such as railways, highways, ports, and energy corridors—the initiative seeks to remove longstanding physical and logistical barriers that have historically hindered cross-border exchange. This physical interconnection enhances the efficiency of trade, shortens transportation times, and expands access to markets, thereby generating spillover benefits in employment, industrial growth, and technological diffusion. Beyond economic gains, the improvement of infrastructure also strengthens institutional cooperation among participating countries, laying the groundwork for policy alignment and long-term stability. In this sense, facility connectivity is not merely a technical endeavor but a foundational element in fostering economic synergy and mutual development, aligning with the broader vision of inclusive and sustainable globalization promoted by the BRI(see table 1.3).

Its core purpose is to eliminate geographical constraints and strengthen regional cohesion. This dimension includes the development and enhancement of railways, expressways, ports, airports, pipelines, and telecommunications infrastructure—facilitating seamless transnational connectivity. Transport infrastructure has seen targeted investments, moreover, energy cooperation projects—including grid interconnections and oil/gas pipelines—along with advancements in digital infrastructure, such as international fiber-optic routes and telecommunications partnerships, play a key role in enhancing cross-border integration. These developments not only strengthen economic linkages but also support the mobility of

people, flow of goods, and circulation of information, paving the way for a more interconnected and future-oriented regional architecture.

Table 1.3

Introduction to some BRI 's connectivity projects

Year	Representative of the projects	Target
May 2013	Roads under the China-Pakistan Economic Corridor	Upgrade and expand the road network in Pakistan
May 2013	Gwadar Port	It provides an important outlet for central and South Asia
September 2014	Colombo Port City	It has improved shipping capacity in the Indian Ocean region and promoted connectivity along the Maritime Silk Road.
October 2014	China-Laos power interconnection project	To realize the interconnection of power networks between China and Laos
September 2016	The information superhighway of Asia and Europe	It will significantly improve the speed of information flow among countries along the Belt and Road
August 2019	5G network infrastructure	To support the development of smart cities and digital economy

Source: [Author]

Infrastructure connection, by constructing transportation, energy, and communication infrastructure, becomes an effective material premise for the "Belt and Road" initiative. The enhancement of the infrastructure directly cut down the transportation time and costs, making countries in the route more competitive in the trade. Meanwhile, it optimizes regional logistics efficiency. The enhancement of port, railroad, road networks will help break down bottlenecks in logistics to achieve more effective solutions to circulate commodities in the region. Furthermore, it advances the optimalization of global supply-chain.Energy pipeline and communication network construction could promote countries within "Belt and Road" into global supply chain in depth, helping achieve more equitable global economic development. Infrastructure connectivity can serve as the cross-border resources circulation that promote different countries in different resource endowments to complement their strengths.Conversely, it shrinks the development gaps, promoting for developing countries to enhance their economic structure, guaranteeing that they attract foreign investment, generate job creation and boost up industrialization[32].

Trade facilitation plays a crucial role in promoting trade and fostering economic cooperation between countries along a given trade route. By streamlining and enhancing the efficiency of cross-border trade, it contributes significantly to regional economic development. Through the reduction of these trade barriers, countries can create a more conducive trade environment, encouraging businesses to engage in international trade and investment. This process not only improves the overall economic climate but also helps reduce transaction costs, making it easier for countries to exchange goods and services at competitive prices. Furthermore, by optimizing trade procedures and minimizing delays, trade facilitation supports the faster movement of products, ultimately enhancing supply chain efficiency and responsiveness to market demands. The removal of barriers and the simplification of cross-border customs processes can help integrate local economies into global value chains, promoting greater interconnectivity between markets. In addition, trade facilitation encourages regional cooperation by fostering stronger economic ties between neighboring countries, contributing to long-term growth and stability in the region. Through improving trade policies and regulations in the countries, a more open, fair and transparent trade environment is developed (see table 1.4).

Table 1.4

Introduction to some BRI 's trade facilitation projects

Year	Representative of the projects	Target
2014	China-Europe freight trains	It provides convenient logistics solutions for international trade and promotes the rapid growth of trade between China and Europe.
January 2018	One-stop customs clearance system between China and Kazakhstan	The customs clearance time for goods has been reduced from 48 hours to a few hours
April 2018	China-New Free Trade Agreement	It provides an institutional guarantee for the growth of bilateral trade
November 2019	Regional Comprehensive Economic Partnership	It covers 10 ASEAN countries and other Asia-Pacific countries, promoting regional economic integration in the Asia-Pacific region.
June 2024	China and Malaysia are jointly building a "digital Silk Road"	To support Malaysian small and medium-sized enterprises in conducting international trade through e-commerce platforms.

Source: [Author]

Trade facilitation under the Belt and Road Initiative (BRI) is primarily advanced through the reduction of tariffs, streamlining of customs procedures, and the unification of technical and regulatory standards. These coordinated efforts aim to eliminate institutional and procedural trade barriers between participating countries, thereby fostering an open and efficient environment for the flow of goods, services, and capital. As these barriers diminish, trade cooperation is projected to evolve from the exchange of primarily low-end or resource-based commodities toward the trading of higher-value-added goods and services. This shift enhances not only the structural quality of trade but also its overall efficiency and resilience. This strategic alignment allows for more rational specialization and efficient distribution of labor across borders, ultimately promoting the optimization of local resource allocation and industrial upgrading. Over time, this transformation supports the development of more balanced and sustainable regional economies [33].

Financial connectivity is another fundamental pillar of the BRI and plays a pivotal role in sustaining long-term infrastructure development and cross-border economic growth (see table 1.5). By promoting financial cooperation among participating states, the initiative enhances capital mobilization capacity and diversifies funding channels. It supports the establishment and expansion of multilateral financial institutions—such as the Asian Infrastructure Investment Bank (AIIB) and the Silk Road Fund—which act as important vehicles for providing large-scale, low-cost, and long-term financing to BRI projects. These financial mechanisms are designed not only to address the significant funding gaps in infrastructure but also to create a stable and inclusive financial environment tailored to the needs of developing economies along the route.

In parallel, the BRI emphasizes the advancement of green finance as a strategic tool for ensuring environmental sustainability. By encouraging investments in clean energy, eco-friendly infrastructure, and climate-resilient technologies, financial connectivity also supports the broader goal of achieving green and low-carbon development. Additionally, cooperation in currency exchange, financial regulation, and credit systems further strengthens monetary integration and risk mitigation, laying the groundwork for a more stable and transparent financial ecosystem across the region.

Table 1.5

Introduction of some BRI 's financing projects

Year	Representative of the projects	Target
October 2013	Asian Infrastructure Investment Bank (AIIB)	Focus on infrastructure construction and provide loan support to countries along the route.
December 2014	The Silk Road Fund	Provide equity investment and debt financing for the "Belt and Road" project.
July 2015	New Development Bank (NDB)	Established by the BRICS countries, it provides financing support to developing countries and emerging economies, covering projects in many countries along the "Belt and Road".
September 2015	RMB bonds (panda bonds)	Expand financing channels to provide financing for the "Belt and Road" project.
July 2020	China Green Development Fund	We will support the promotion of clean energy, energy conservation, environmental protection and low-carbon technologies
November 2018	"Belt and Road" Green investment principles	We will encourage the international community to participate in green development

Source: [Author]

People-to-people connectivity with the goal of boosting the cultural understanding and friendship among citizens of the countries along the route by conducting people-to-people exchanges. It is an important soft power of the "Belt and road" initiative, constructing social foundations for "Belt and Road" cooperation by promoting people-to-people exchanges in the fields of culture, education, travel and other related fields.Through art, music, literature, arts and so on, to enhance the exchange of culture between countries along the route, enhance understanding and appreciation of each other, to strengthen the talent exchange and cultivate talents in professional fields in these countries, and to create the platform of international education cooperation.It also promotes outbound tourism, making foreign tourists learn and experience more on cultures in "Belt and Road" countries in more friendly policies and infrastructures[34].

The harmony of hearts and minds constitutes a critical dimension of soft power within the Belt and Road Initiative (BRI), complementing its material and institutional components. This form of connectivity seeks to strengthen mutual understanding, emotional bonds, and a sense of shared identity among participating nations through sustained cooperation in culture, education, and tourism. Initiatives such as academic

exchanges, joint cultural programs, language learning, and people-to-people interactions serve as effective channels to foster trust, reduce misperceptions, and deepen intercultural awareness. Unlike economic agreements, which may be transactional in nature, these engagements cultivate long-term affinities and social capital that can reinforce diplomatic ties and societal support for broader regional collaboration. In this context, people-to-people connectivity is not simply a supplementary element—it is foundational to building durable partnerships and ensuring that the spirit of cooperation is internalized at both the institutional and grassroots levels. Thus, the BRI's soft power strategy plays a vital role in sustaining the initiative's legitimacy, inclusiveness, and long-term cohesion (see table 1.6).

Table 1.6

Introduction of some "Belt and Road" people-to-people connectivity projects

Year	Representative of the projects	Target
October 2013	Silk Road International Arts Festival	Organize bilateral or multilateral art performances, music festivals, film festivals and other activities.
April 2017	Silk Road Scholarship	The "Belt and Road" scholarship has been provided to subsidize students from countries along the Belt and Road to study in China. By 2025, hundreds of thousands of students from countries along the Belt and Road have received Chinese government scholarships to study in China.
January 2018	China and Cambodia are working together to restore Angkor Wat	We will cooperate with countries along the Belt and Road to restore cultural heritage and carry out joint archaeological projects.
September 2018	The Republic of Africa has set up "Luban Workshops"	To provide vocational education and technical training to countries along the Belt and Road, helping them cultivate practical talents.
June 2022	China-Arab Cultural Center	A cultural exchange center has been set up to hold seminars and exhibitions to promote the exchange of diverse cultures.
2026 (provisional)	China-Africa Year of People-to-People Exchanges	Organize bilateral or multilateral art performances, music festivals, film festivals and other activities.

Source: [Author]

The concept of harmony in hearts and minds constitutes a vital dimension of soft power within the Belt and Road Initiative (BRI). By fostering cultural, educational, and tourism cooperation among participating countries, this approach strengthens emotional bonds and a shared sense of identity along the Belt and Road. Such

exchanges promote the mutual appreciation of diverse civilizations and cultural pluralism, which are essential for building a solid social foundation that underpins the initiative's long-term sustainability. The emphasis on "Heart-to-Mind Connectivity" nurtures cultural respect and facilitates interpersonal communication, thereby enhancing the global appeal and collaborative potential of the BRI. This human-centered framework contributes significantly to the vision of forging a community with a shared future for humanity, providing indispensable support grounded in cultural understanding and people-to-people ties.

The Belt and Road Initiative (BRI) aligns closely with the Sustainable Development Goals (SDGs) in terms of vision, principles, and strategic direction. The early progress and implementation of the BRI have played a significant role in advancing the achievement of the SDGs. The Belt and Road Initiative will deepen practical cooperation in various fields, including infrastructure connectivity, trade and investment, and financial support, and promote the prioritization of economic development, poverty eradication, employment expansion, livelihood improvement and environmental protection in international cooperation. This will be conducive to aligning countries with national and regional development strategies and the 2030 Agenda for Sustainable Development, joining hands to build a community of human destiny, achieving common development and benefiting the people of the world [35].

Between 2013 and 2023, China's trade in goods with countries along the Belt and Road will grow from $1.04 trillion to $2.72 trillion, with an average annual growth rate of 8 per cent. In terms of investment, by the end of 2023, the cumulative two-way investment between China and the countries along the Belt and Road exceeded US$270 billion, and the cumulative investment of overseas economic and trade co-operation zones constructed by Chinese enterprises in the countries along the Belt and Road amounted to US$57.13 billion, which created 421,000 local jobs; in terms of engineering and construction, from 2013 to 2023, the cumulative amount of newly signed contracts and turnover of contracted projects contracted by China in the countries along the Belt and Road exceeded 1.3 trillion yuan respectively. In terms of engineering construction, from 2013 to 2023, the newly signed contracts and

completed turnover of China's contracted projects in countries along the routes will exceed US$1.3 trillion and US$900 billion respectively, accounting for more than half of the total amount of contracted projects [8] .

From 2015 to 2024, annual data on China’s non-financial direct investment and overseas contracted engineering projects in countries participating in the Belt and Road Initiative (BRI) have exhibited a steady upward trend, with particularly notable growth over the past two years. Specifically, in 2023, China’s non-financial direct investment in these countries reached USD 31.8 billion, marking a significant increase compared to previous years. This figure further rose to USD 33.69 billion in 2024, reflecting a continuous and strategic commitment to regional economic cooperation through sustained capital deployment.

The consistent expansion of investment underscores the deepening trust and growing institutional maturity between China and its BRI partners, as cooperation mechanisms, policy coordination, and institutional frameworks are progressively refined. Supported by robust financial backing, infrastructure development, industrial upgrading, and economic restructuring in partner countries have been effectively promoted, laying a solid foundation for shared growth and mutual benefit. Moreover, this investment pattern exemplifies the BRI’s underlying principles of openness, inclusiveness, and win-win cooperation, contributing to sustainable economic progress and prosperity along the Belt and Road.

In summary, China’s expanding investments in BRI countries over recent years represent more than a quantitative increase; they serve as a vital engine driving broader regional integration and collaborative development. As project implementation deepens and partnerships mature, this upward trajectory is expected to continue, injecting lasting momentum into global economic recovery and advancing regional integration efforts.

Simultaneously, the total value of newly signed overseas contracted projects remained substantial, surpassing USD 227.16 billion in 2023 and increasing slightly to USD 232.48 billion in 2024. These figures underscore the prominent role of Chinese engineering enterprises in shaping the global infrastructure landscape. The scale and

continuity of these projects reflect not only China’ s competitive advantages in construction and project management, but also the increasing acceptance of Chinese standards and technologies abroad. Taken together, the steady rise in both investment and project contracts indicates that the BRI is evolving beyond its initial stage into a mature platform for international economic integration, infrastructure cooperation, and long-term development partnerships.

Table 1.7

China's investment and cooperation with countries participating in BRI over the years (Unit: US$ 100 million)

	Non-financial direct investment		Amount of newly signed contracted projects				
Year	Investment Amount	Growth	Contract Amount	Growth	Completed turnover	Growth	Number of contracts
2024	336.9	5.4%	2324.8	0.4%	1387.6	3.4%	
2023	318	22.6%	2271.6	5.7%	1320.5	4.8%	
2022	209.7	3.3%	1296.2	-3.3%	849.4	-5.3%	5514
2021	203	14.1%	1340.4	-5.2%	896.8	-1.6%	6257
2020	177.9	18.3%	1414.6	-8.7%	911.2	-7%	5611
2019	150.4	-3.8%	1548.9	23.1%	979.8	9.7%	6944
2018	156.4	8.9%	893.3	4.4%			
2017	143.6	-1.2%	1443.2	14.5%	855.3	12.6%	7217
2016	145.3	-2%	1260.3	36%	759.7	9.7%	8158
2015	148.2	18.2%	926.4	7.4%	692.6	7.6%	3987

Source: [30]

It is worth noting that although the amount of newly signed contracts and completed turnover fluctuated due to adverse factors such as the epidemic from 2020 to 2022, the overall number of contracts did not see a significant decrease, indicating

that the Belt and Road projects have a certain degree of resilience and continuity. The completed turnover in 2024 was US$138.76 billion, a year-on-year increase of 3.4%, and the number of contracts also remained high, reaching 6,257. Overall, over the past decade, the scale and quality of investment cooperation in the "Belt and Road" initiative have improved, gradually transitioning from the early pursuit of quantitative growth to an emphasis on efficiency, standardized operations and sustainable development (see table 1.7).

1.3 Geopolitics of Economic Corridors within the Theory of Global Economic Relations.

Economic Corridors as Zones of Dense Economic Linkages and Development Potential. An economic corridor, in essence, refers to a spatially defined zone within which intense economic activities and linkages are fostered through the deliberate construction of physical infrastructure, synchronization of policy frameworks, and integration of cross-border economic operations. Within a specific region, such corridors manifest as strategic areas with dense networks of industrial and commercial interactions, high development potential, and strong capacity for catalyzing regional economic transformation. These corridors are not merely transport routes; rather, they serve as multifaceted platforms integrating diverse economic sectors through planned connectivity and coordinated investment.

Economic corridors function as strategic channels that link infrastructure, industries, and markets, thereby stimulating economic growth in connected regions. These corridors foster concentrated economic activities that enhance regional integration by lowering costs and facilitating smoother movement of goods, services, capital, and labor. This dynamic framework unlocks development opportunities that individual locations often cannot realize on their own.

One important role of economic corridors is promoting the clustering of businesses and industries. When firms are located near one another along these corridors, they benefit from economies of scale, share knowledge more easily, and boost innovation. Investments in transportation infrastructure — such as roads, railways, and logistics centers—reduce travel time and expenses, allowing companies to join regional and global supply chains more effectively. The proximity created by corridors enables cooperation and synergies that are less achievable in isolated settings.

Moreover, economic corridors connect regions with varying levels of development, including less developed rural areas and economically vibrant urban centers. This spatial linkage helps reduce disparities by providing isolated regions better access to markets, technology, and investments, which in turn supports local

industries and job creation. Such connectivity is key to overcoming economic exclusion and promoting more balanced growth.

Economic corridors also encourage cross-border collaboration, which is crucial to dismantling regulatory and institutional hurdles. Coordinated policies on customs, trade, and investment within these corridors make cross-border commerce more predictable and efficient. These improvements attract investment and enhance trade, knitting together regional economies into broader international systems.

Beyond physical infrastructure, economic corridors often involve investments in social and human capital, such as skills training and environmental programs. These efforts help communities build resilience and ensure that economic progress translates into better living conditions.

Within the Belt and Road Initiative framework, economic corridors integrate infrastructure development with policy coordination and cultural exchanges. Corridors like the China-Pakistan Economic Corridor (CPEC) and the Bangladesh-China-India-Myanmar (BCIM) corridor demonstrate how combining physical connectivity with soft elements creates sustainable growth centers.

Typically, economic corridors are composed of large-scale infrastructure systems, including transportation arteries (such as highways, railways, and ports), energy transmission frameworks (like power grids, pipelines, and renewable energy facilities), and communication networks (including fiber optics and digital connectivity tools). These infrastructures serve to bridge logistical gaps, facilitate the movement of raw materials and finished products, and establish stronger industrial cooperation mechanisms and market interdependence across national boundaries.

The fundamental objective of constructing economic corridors lies in enabling seamless connections between resource bases and manufacturing hubs, linking producers directly to consumers, and fostering broader regional economic cohesion. By improving accessibility and reducing transaction costs, corridors help stimulate trade, attract investment, and promote socio-economic integration across regions with varied levels of development.

A notable illustration of this concept is China's Belt and Road Initiative (BRI), such as the China-Pakistan Economic Corridor (CPEC) and the China-Mongolia-Russia Economic Corridor. These corridors aim to enhance infrastructure interoperability, support joint economic growth, and promote policy alignment among participating nations. Through extensive transnational infrastructure development and enhanced trade cooperation, these initiatives seek to lay the groundwork for a more balanced, interconnected, and sustainable model of regional and global economic development [1].

Economic corridors are not only physical spatial connections but also a strategic layout, typically led by the government with participation from enterprises and society. In their growth, economic corridors contribute to promoting employment growth, technology transfer, and industrial upgrading, but they may also face issues related to environmental preservation and social justice, and geopolitics [2]. Therefore, economic corridors are regarded as one of the important models of modern economic development, especially under the backdrop of deepening globalization and regional cooperation, they hold strategic significance.

The economic corridor is not only the spatial link in the form of physical space but a strategic pattern led by the government, and participation of enterprises and social entities. During the promotion of economic corridor initiatives, there can not only drive employment, promote technology transfer and industrial upgrading, but also encounter problems regarding environmental conservation and social justice and geopolitics [2]. Thus, economic corridors are considered one of the modern major models in support of economic advancement, or could possess the strategic significance as the new globalization and regional cooperation.

Global economic interactions refer to a special relationship generated by the mutual existence and mutual influence among different countries in the field of economy, which involve a series of activities including trade, investment, finance and technology exchange, namely how countries construct the international economic pattern with economic cooperation and economic competition. Global economic ties is not only transactions of goods and services traded among nations, but also

encompasses the flows of the broader economic activities in a cross-country context, including but not limited to capital flows, labor mobility, and global transmissions of information technology [3]. International relations of economics is the foundation of the globalization process, which furthers the economic global integration, and raises the wealth and jobs creation levels, but it also gives rise to regional economic disparity, resource rivalry, game politics and other issues.

The theoretical structure of international economic ties mainly includes liberal perspective, realist perspective and globalization theory (see table 1.8).

Table 1.8

Comparison of main theories concerning transnational economic connections

Theoretical perspective	Focus	Leading feature	Representative views
Liberalism	Joint cooperation and shared benefits	Multilateralism and economic dependence reduce conflict	Group united by common interests and free trade
Realism	Power and competition	National centers, self-help behavior, win-lose scenario	National strategy, geopolitical economic competition
Theory of globalization	Networks and connectivity	Transnational networks, actors outside state structuress, blurred borders	The forces of globalization of infrastructure and supply chains

Source: [author]

The liberalism stresses economic cooperation and multilateral mutual benefits. liberalism contends that the crux of interstate relations can gain win-win through cooperation, and economic interdependence and multilateral mechanisms can downplay conflicts and help ensure global peace and economic prosperity. The chief point of view refers to cross-border trade and capital flows is a “community of interests”. It reduces the chance of war. The WTO, IMF, the UN are the platforms which facilitate cooperations. Their rules for economic activities and multilateralism will pursue the well-being of the world economy. According to Smith (1776), free markets and divisions of a market economy can guarantee the prosperity. David Ricardo proposed that comparative advantage could fulfill the advantages of free trade. Joseph Nye’s theory of complex interdependence argues that market, resource and

additional productive resources are higher than military power [3]. The liberal theory argues that economic corridors as tools for the synergy of trade and investment will propel regional economic integration; success of such corridors relies upon transparent rule and and partnership fostering mutual gains relation.

Realism maintains that the international relations are the platforms of struggle for power and interests, state action focused on the self-interests, and economic activities are serving the enhancement of national power. Fundamentally speaking, the state is regarded as the most significant agent in the international system, it looks to amplify its own security and interests. Due to the limited social resources, the competition between the states is inevitable. For the sake of some strategy, sanction, trade, blockade and so on are always a tool in the economic area. Representative of the classic realism and the basic idea of the value is the economist Hans Morgenthau, the representative of the offensive realism and the importance of great power contest is John Mearsheimer, and the foundation of international political economy is a pioneer Robert Gilpin's systematically study of the economics power relation [4]. From the realist point of view, economic corridors become weapons in the hands of states, and the states grasp at the control of nodes like ports and energy pipelines, thus further consolidating strategic strengths.

Globalization theory goes beyond the National Center approach and underscores the influence of transnational economic networks and entities outside state control. It affirms that transnational connections are superior to other forms of territorial associations and hence even more determinant in describing world relations: "What exists is networks and flows of goods, machines, information, and money that link country after country in globalized chains of production and consumption," Multinational firms, global organizations, and non-state agencies are both agents and actors in the global economy. The theory of globalization weakens the state sovereignty, but strengthen the global rules. The theory of network society promoted by Manuel Castells treats information stream as the mainstream of globalization. The theory of interconnection put forward by well-known economist Parag Khanna highlights the role of infrastructure and supply chain in the process of globalization [6].

In the view of globalization theory, economic corridors are the concrete representation of globalization, which link global commercial networks via infrastructure networks. Interconnection of infrastructure and supply chain is the key to promote economic progress. The research object “Belt and Road” of this article is an important representative of globalization theory.

The mutual influence of “space” and “power” has created various geopolitical settings [5]. Geographical locations exert a tremendous impact over international politics, especially upon national conduct and global interactions. Geographical conditions affect state strategy and policy making to a large extent. Locations, resources, relations among neighbouring states influence it to a large extent. The main concepts of geopolitics are ”space” and ”power”, in other words geographical position and riches decided the strategic interests of the country and those interests in fact ruled the conduct of the country in international politics.

Geopolitical theory also asserts that states make decisions not merely in the interest of economy, but geography, border, distribution of resources are equally important. For instance, the country having dominant access to the strategic straits, passages or energy resource often leads strategic position of itself in international relation. Geographical factor specifies the safety requirement and strategic goal of a state in order to prompt regional, global games of geopolitics.

Among them, Heartland Theory (Heartland Theory) is a geographical theory suggested by the British geographer Halford Mackinder in 1904. The central region of Eurasia “Heartland Theory” under the control of a country could be able to obtain world power. However, the American political geographer Nicholas Spykman raised the peripheral theory at the beginning of the 20th century and attacked Mackinder’s “Heartland theory. Spikes contend that controlling the “Periphery” rather than the “Heartland” is where the secret of global politics is.

The correlation of geopolitical considerations and economic corridors is complicated and multifold. Firstly, depending on geographic aspects, i.e. comparison of strategic position, and thus accessibility of land and maritime corridors, secondly on the comparison of access to natural resources and markets. Second, geopolitical factors

including national sovereignty and border conflict play important roles in economic development and there exist strong influence from regional organisations i.e. ASEAN and the EU across various geographies with regard to economic growth, trade facilitation and connectivity, patterns related to investment and infrastructure expansion form the key determinants of the linkage of geopolitical and economic corridors. Last, security or strategy, to some degree, shows another correspondence between economic progress and political contention.

Economic Corridors as Reflections of global economic interactions and Geopolitics [6]. It facilitate trade, investment, and connectivity across regions while simultaneously reflecting the power competition, regional integration efforts, and strategic alignments of nations in a rapidly evolving global landscape. The North-South Transport Corridor (NSTC) is one of the most strategically significant transnational connectivity projects in Eurasia in the 21st century. Alongside Iran, India and Russia as the axis, the corridor integrates shipping, rail, and road logistics networks to build a multi-modal transport channel from St. Petersburg, Russia in the north to Mumbai, India in the south, the Persian Gulf, the Caucasus and the Caspian Sea region, with a total length of about 7,200 kilometers. As a strategic link between the Indian Ocean and the Caspian Sea economic circle, NSTC not only reshapes the Eurasian logistics landscape, but also profoundly affects regional economic unification and the geopolitical game of major powers. Its significance far exceeds the scope of simple transportation infrastructure .

The core value of NSTC lies in breaking through the dependence on traditional trade paths. At present, Eurasian trade relies heavily on the Suez Canal-Mediterranean shipping route. It takes more than 45 days from India to Europe. However, NSTC can shorten the transportation time to 20-25 days and reduce the cost by 30%-40% through the land-sea combined transport mode of "Indian west coast ports (such as Mumbai)-Iranian Chabahar Port/Abbas Port-Iranian railway network-Azerbaijan-Russia". This efficiency revolution directly impacts the existing worldwide supply chain framework: India can bypass the land barrier of its old enemy Pakistan and directly connect the energy-rich areas in Central Asia (such as Kazakhstan uranium mines and

Turkmenistan natural gas) and the vast Russian market; Russia has opened up a "southern channel" to circumvent Western sanctions. After the Russian-Ukrainian conflict in 2022, Russia and India transported the first batch of 2,000 tons of timber through NSTC pilot, and plan to increase the annual cargo volume to 30 million tons; Iran, relying on its hub status, has built Chabahar Port into the "Shanghai of the Persian Gulf", attracting India's investment of US$500 million to upgrade port facilities, making it the most convenient seaport for Afghanistan and Central-Asian states (see fig.1.6).

Fig1.6. Simple Map of the NSTC

Source: [Le Monde report, November 2024]

Otherwise, for the development of NSTC, there are some challenges as follows. Number one is geopolitically risky: The US "maximum pressure" policy against Iran, which has scared away international capital and the repeated blocking of India's participation in the construction of Chabahar Port in the face of sanctions risks; the Nagorno-Karabakh conflict in Caucasus and the unsoundness of the Taliban regime in Afghanistan may jeopardize the security of the corridor. Secondly, shortcomings are evident in the "hard connection" of infrastructure [6]. The building of the Rasht-Astara railway line in Iran faced a prolonged delay of over 20 years, and although the project was finally launched in 2023, it still reflects significant challenges in both project

management and intergovernmental coordination. Moreover, the mismatch in rail gauges (1520mm vs 1435mm) between Azerbaijan and Russia leads to the necessity of cross-border transportation reloads, which results in substantial delays and inefficiencies. Thirdly, the economic viability of the route is highly questionable. The annual freight volume about the NNSTC remains less than a million tons, which is far less than its intended capacity and pales in comparison to the 15,000 trains annually run by the China-Europe rail link. Despite the issues confronted by the Suez Canal, particularly in light during the ongoing crisis in the Red Sea, its economies of scale continue to be a formidable force, making it difficult for alternative routes to compete on the same level.

The Trans-European Transport Network (TEN-T) is a comprehensive transportation strategy system built by the EU to achieve deep integration of the internal market, strengthen regional connectivity and boost international competitiveness. It breaks down the physical and institutional barriers among the member nations through the coordinated multimodal transport network of highways, rail networks, and river transport routes, aviation and shipping, and builds a "seamless, efficient and low-carbon" TEN-T artery. The network is promoted with a two-tier structure of "core network" and "integrated network": the core network focuses on connecting nine transnational corridors by 2030, giving priority to eliminating key bottlenecks, such as upgrading the German-Poland railway to improve the distribution performance of China-Europe operations trains within the EU; the integrated network is aimed at reaching all areas of Europe by 2050 to ensure that marginal areas are integrated into the unified market. Its core economic value is reflected in shortening cross-border freight time by 30%, reducing logistics costs by 15%, and directly supporting the unrestricted movement of goods and people in the EU single market. For example, the Rhine-Alps Corridor cut carbon output from inland shipping from the Port of Rotterdam to the hinterland of Germany by an annual volume of 1.2 million tons through pilot projects of hydrogen trains and electric heavy trucks, and simultaneously promoted the implementation among the objectives of the European Green initiative Agreement. At the geopolitical level, TEN-T was given strategic

defense attributes after the Russian-Ukrainian conflict, and accelerated its extension to Eastern Europe to weaken Russia's influence: Ukraine's "Solidarity Channel" upgraded the Lviv-Poland railway, and the expansion of ports in the three Baltic countries reduced dependence on Russian transit and enhanced energy and the strengthening of logistics networks.

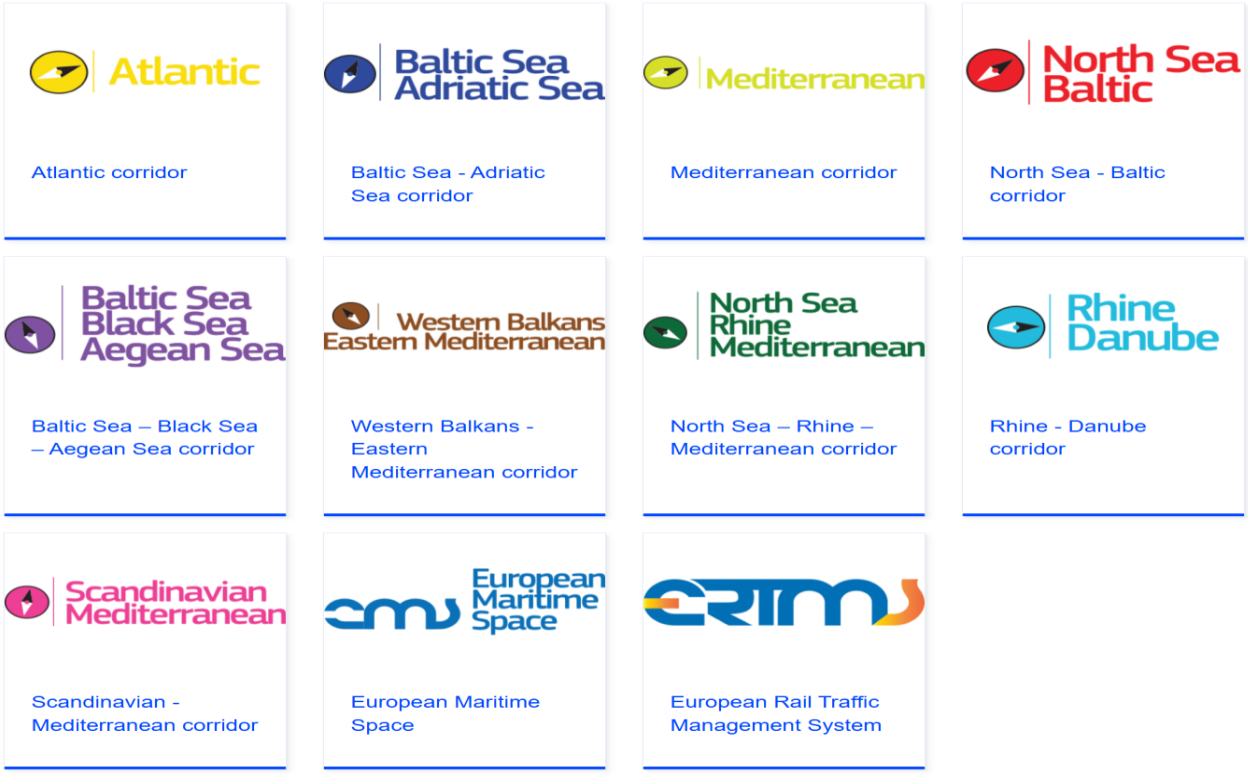

Fig1.7: Constituent parts of the TEN-T system.

Source: [TEN-T map of the European Commission official website]

Faced with multiple structural contradictions in the implementation of TEN-T, the EU has made use of its own advantages such as developed economy, advanced technology, relatively mature market, and rich experience and practices to make very targeted and innovative plans and specify successful implementation mechanisms. In particular, TEN-T seeks breakthroughs through the "European Digital Transport Corridor" plan: unifying electronic waybills, promoting 5G railway dispatching systems, and piloting self-driving trucks. The goal is to achieve full-process digital tracking by 2030 and increase cross-border freight efficiency by another 25%. (see Fig1.7). Its success or failure is not only related to the cohesion of the EU internal market, but also will shape global multi-modal transport rules. This grand vision not

only demonstrates the EU' s ambition to strengthen its "strategic autonomy" through infrastructure, but also exposes the logical dilemma of collective action under the multilateral governance system, becoming an excellent sample for observing the collective capabilities and limitations of supranational systems.

Over the years, the Trans-European Transport Network (TEN-T) has developed into an extensive multimodal infrastructure system that spans the entire European continent. It integrates highways, railway lines, inland waterways, airports, and logistics hubs into a coherent framework. The collaboration between the core and comprehensive networks enables seamless connectivity along both east−west and north−south corridors, significantly improving travel efficiency and lowering logistical expenses. In addition to reinforcing economic integration among EU nations, the network also deepens transport cooperation with neighboring non-EU countries, such as Ukraine and those in the Balkans, thus fostering balanced regional development. Furthermore, by advancing sustainable mobility solutions, including environmentally friendly transport modes, smart mobility technologies, and enhanced cross-border coordination, the TEN-T initiative actively contributes to the EU′s climate objectives under the Green Deal and its long-term carbon neutrality ambitions. In summary, the pan-European transport framework stands as a strategic foundation for bolstering economic cohesion, regional security, and sustainable progress across Europe.

The Trans-African Highway (TAH) represents a strategic infrastructure initiative spearheaded by the African Union in collaboration with the United Nations Economic Commission for Africa and other international partners. Designed to overcome the fragmented and outward-oriented transport systems inherited from the colonial era, the TAH aims to establish a continent-wide road network that facilitates internal connectivity. The initiative envisions the construction of nine major transnational corridors, collectively spanning over 50,000 kilometers, and linking key urban centers and seaports across East, West, North, Central, and Southern Africa. This ″north-south and east-west″ framework is intended to significantly improve regional

mobility and economic exchange. So, the TAH supports deeper economic integration and acts as a catalyst for the African Continental Free Trade Area (AfCFTA). Beyond its economic impact, the project contributes to infrastructure development in underserved areas, encourages local industrial growth along transport corridors, and fosters peace and intergovernmental cooperation.

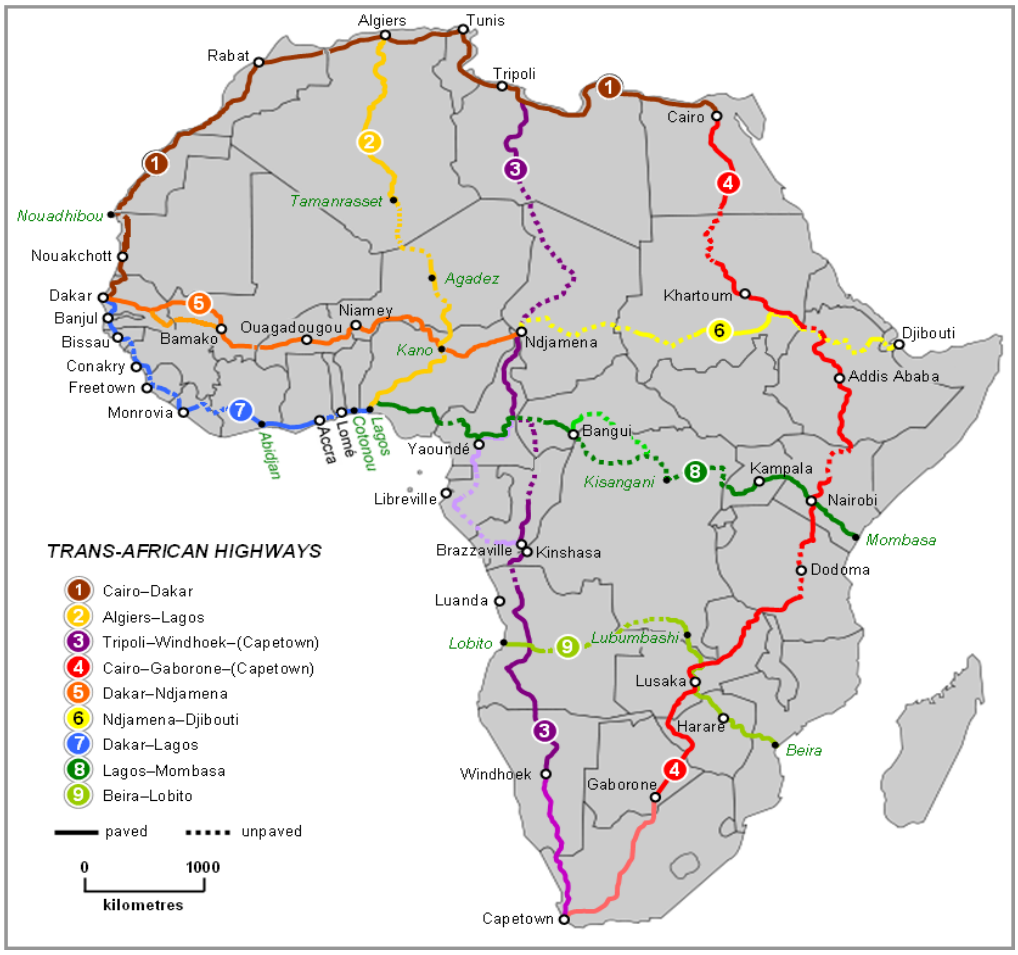

Fig1.8. Simple diagram of TAHN

Source: [The exchange.africa, June 27, 2023]

Despite ongoing challenges such as limited financing, technical constraints, and regional instability, the TAH stands as a foundational effort toward building a more unified, resilient, and sustainably developing Africa. (see fig.1.8). The project was conceived in 1971 by the United Nations Economic Commission for Africa, but, after more than half century of intermittent progress, is today the flagship project of the Africa 2063 Agenda aimed at removing the regional trade barriers. World Bank data indicate that, if the network is fully completed, Africa's annual GDP may rise by up to 2.5%, and it has the potential to create 19 million jobs. However, the project has

encountered considerable delays because of three primary structural contradictions. First, there is a considerable funding gap and technical deficit. The total construction cost of the Pan-African Highway exceeds $50 billion, accompanied by African Development Bank contributing only 15% of the funding [7]. Second, geopolitical tensions and governance fragmentation further complicate the execution of the project, transnational segments are often disrupted by territorial disputes and sovereignty transfer issues. Third, ecological and social risks present additional challenges, the Trans-African Highway has sparked controversies due to its capabilities environmental impacts.

Belt Road Initiative (BRI) is a macro-strategic cooperation, the 2013 initiative originating from China , which aims to facilitate joint efforts and shared development across the countries and regions situated along the route, through promoting policies communication, facilities interconnection, trade facilitation, financial integration and people-to-peoples exchanges(see fig. 1.9).

Fig. 1.9. The Belt and Road Economic Corridor Map

Source: [China National Mapping Geographical Information Bureau]

The initiative encompasses the Silk Road Economic Belt and the 21st Century Maritime Silk Road. To date, over 150 nations and more than 30 international bodies have taken part in the initiative, covering the 40% of World GDP and 60% population [8]. BRI pledges to strengthen infrastructure construction and open up trade and investment, deepen intercultural interactions among people, it is an open, inclusive and mutually beneficial collaboration platform.

The Belt and Road Initiative (BRI) draws inspiration from the legacy of the ancient Silk Road, which historically facilitated interaction between China and regions including Central Asia, West Asia, and Europe during dynasties such as the Han and Tang. Beyond its function as a commercial route, the Silk Road also served as a conduit for the exchange of ideas, religions, technologies, and cultural practices. Building on this historical foundation, China introduced the BRI in the 21st century as a strategic framework aimed at enhancing transcontinental connectivity.

The initiative represents both a modern adaptation of the Silk Road ethos and a response to the developmental aspirations of emerging economies and developing nations within the context of increasing globalization. By promoting cooperation across infrastructure, trade, policy, finance, and people-to-people engagement, the BRI seeks to foster inclusive development and mutual benefit among participating countries.

The comparative features of NSTC,TEN-T, Trans-African Highway and BRI on connectivity strategies reveal significant contrasts in vision, adaptability, and operational efficacy. While frameworks such as the North–South Transport Corridor (NSTC), the Trans-European Transport Network (TEN-T), and the Trans-African Highway (TAH) generally operate within regional scopes and established institutional systems, the Belt and Road Initiative (BRI) reflects a markedly different logic—one that is global in scale and more versatile in implementation.

NSTC and TEN-T are often confined by rigid regulatory alignments and intra-regional priorities, focusing primarily on optimizing transport corridors within existing political or economic unions. TAH, although broad in its geographic ambition, has

struggled with uneven development progress and limited financial sustainability. In contrast, BRI introduces a more integrated and pragmatic model, characterized by its alignment of infrastructure investment with broader development goals, including industrial cooperation, digital connectivity, and cultural exchange. Its design favors bilateral or multilateral flexibility rather than fixed institutional formats, allowing it to adapt more swiftly to partner country contexts.

Moreover, the financing structures behind these initiatives vary considerably. While TEN-T relies heavily on EU budgetary mechanisms and national co-financing, and TAH remains dependent on fragmented aid and donor funding, BRI projects are often underpinned by long-term concessional loans, public-private partnerships, and coordinated financial instruments from China-led institutions. This ensures higher project continuity and execution efficiency.

Compared with the other three, BRI′s strength lies in its comprehensive nature. It moves beyond infrastructure as an isolated goal, embedding it within broader visions of economic transformation. This holistic approach enables it to not only fill infrastructure gaps, but also to enhance institutional capacities, industrial upgrading, and cross-border integration. As such, it increasingly represents a distinctive model of global development cooperation, particularly valued in regions seeking long-term strategic partnerships and diversified growth pathways.

With the change of international political economy environment, in the future development of economic belts will not be more toward singularity and unilateralism, but towards the direction of inclusion, coordinated and diverse participation pattern. The inclusive development is expected to serve as a value concept. That is, it does not only mean accepting the participation of developing countries to a further degree, but also embodies the inclusion of economic equilibrium, equitable development and fair opportunity distribution within the area to accomplish the development logic of mutually beneficial collaboration rather than adhering to a win-lose logic.

Looking ahead, the dynamics of global economic corridor development are expected to shift from traditional models of competition toward a more collaborative

and multi-polar framework rooted in shared construction, interconnectivity, and mutual benefit. Rather than emphasizing rivalry among regional or national initiatives, the emerging trend points toward a cooperative ecosystem in which multiple stakeholders — including states, enterprises, and multilateral institutions — jointly participate in the planning, building, and management of transnational infrastructure. This transformation will manifest not only through the spatial realignment of economic corridors to achieve better logistical efficiency and resource allocation, but also through a profound reshaping of the underlying principles that guide their development.

In this new phase, economic corridors will undergo a qualitative evolution. They will no longer be understood merely as physical transport routes or conduits for the movement of goods and services. Instead, they will increasingly serve as platforms for broader objectives, such as advancing global governance reform, fostering inclusive and sustainable digital economies, and realizing shared ecological responsibilities under international climate goals. The integration of emerging technologies, data governance, and green innovation will become central components of corridor design and function. Simultaneously, governance mechanisms will shift toward more inclusive, multi-level arrangements that reflect the diversity and interdependence of participating actors. Thus, economic corridors will emerge as strategic instruments for shaping a more balanced and interconnected world order, reflecting not only economic priorities but also ethical, technological, and environmental aspirations in an era of global transformation.

Institutional Mechanism of the Belt and Road Initiative. The implementation of the BRI is underpinned by a multilayered and adaptive institutional architecture that reflects both the centralized governance traditions of China and the transnational complexity of global cooperation. At the national level, the strategic direction and interagency coordination of the BRI are governed by the Leading Group for Promoting the Belt and Road Initiative, situated within the Central Committee of the Communist Party of China and the State Council. This body exemplifies a top-level design

approach, integrating macro-strategic planning with horizontal ministerial collaboration and typically chaired by a Vice Premier.

Operational responsibilities are distributed across several specialized institutions. Among them, the Belt and Road Construction Promotion Center, operating under the National Development and Reform Commission (NDRC), serves as a core coordination unit, focusing on project vetting, intergovernmental dialogue facilitation, and policy supervision. Parallel to this, the Ministry of Foreign Affairs (MFA) maintains a dedicated Office for Belt and Road Affairs, responsible for aligning diplomatic efforts with strategic narratives and bilateral consensus-building. The Ministry of Commerce (MOFCOM), through its Department of Outward Investment and Economic Cooperation, provides institutional support for trade facilitation, investment regimes, and the establishment of overseas cooperation zones.

The financial dimension of BRI operations reveals a hybrid model involving state-led and multilateral instruments. The Ministry of Finance manages China′s engagement with financial institutions such as the AIIB and the New Development Bank, and exercises oversight over the Silk Road Fund, a major source of concessional and equity-based funding. The China International Development Cooperation Agency (CIDCA) further complements this landscape by structuring foreign aid policies and managing development assistance in line with South–South cooperation principles.

State-owned enterprises (SOEs) represent a critical operational arm in the overseas implementation of BRI projects. These enterprises, overseen by the State-owned Assets Supervision and Administration Commission (SASAC), are entrusted with executing large-scale infrastructure and energy ventures. Their activities exemplify the initiative′s reliance on a state-capital hybrid model, wherein state guidance and commercial practice intersect.

At the subnational level, provincial governments and municipalities play an increasingly autonomous role in implementing the BRI. Many have institutionalized localized coordination offices to facilitate the participation of regional firms in cross-

border cooperation. Notable examples include the establishment of logistics corridors by cities such as Chongqing and Yiwu, or regional platforms formed by provinces like Shaanxi and Guangxi targeting Central Asian and ASEAN markets, respectively.

The procedural logic of BRI cooperation involves a graduated framework composed of memoranda of understanding (MOUs), joint action plans, and formal intergovernmental agreements. Infrastructure projects typically pass through multiple phases of screening, including political alignment, financial feasibility, environmental impact assessments, and risk management. Approval authority is stratified: high-priority or strategic initiatives require NDRC or State Council clearance, while smaller-scale engagements may fall under the jurisdiction of provincial governments or relevant ministries.

Regional cooperation modalities reflect the diverse geopolitical and institutional contexts of BRI partners:

In Southeast Asia, bilateral project-based frameworks dominate, often supported by policy banks and executed via joint ventures. The China–Laos Railway and the China–Malaysia "Two Parks" model stand as emblematic cases of infrastructure-led regionalism under coordinated bilateral governance. In East Asia, cooperation follows a more strategic and multilateral pattern, particularly within corridors such as the China–Mongolia–Russia Economic Corridor. Here, intergovernmental negotiations and summit diplomacy play central roles in project design and harmonization. In Central Asia, intergovernmental commissions function as the main coordination platforms, addressing issues ranging from infrastructure planning to trade facilitation. These bodies typically involve ministries of transport, energy, and foreign affairs, ensuring policy continuity and strategic alignment.In Africa, cooperation is largely embedded in a "government + enterprise" model, whereby state-backed loans and aid frameworks support projects implemented by Chinese SOEs. Ethiopia's rail and power projects are illustrative of this mechanism.

In Europe, the BRI operates through multilayered platforms emphasizing regulatory convergence and joint financing. The China−EU Connectivity Platform facilitates alignment with the EU′s Trans-European Transport Network (TEN-T), while the China−Central and Eastern Europe Cooperation Mechanism (formerly the ″17+1″ framework) serves as a dialogue-based coordination structure. Initiatives such as the China-Europe Railway Express and the Hungary−Serbia Railway illustrate a model combining state planning, EU regulatory compliance, and market-based execution.

Taken together, the institutional framework of the BRI reflects a flexible and differentiated governance logic. It combines centralized strategic oversight with decentralized operational execution, while integrating diplomatic, financial, and commercial mechanisms across scales. This hybrid model underscores the BRI′s character not only as a geopolitical strategy but also as a structurally embedded approach to global economic governance—anchored in the principle of ″government-guided, enterprise-led, market-oriented, and mutually beneficial″ cooperation.

Conclusions to chapter 1

This chapter establishes the theoretical foundation for understanding the Belt and Road Initiative (BRI) as a global inclusive growth strategy, grounded in both historical logic and contemporary development theories. The discussion begins by exploring the conceptual alignment between the BRI and inclusive growth, emphasizing how the Initiative inherits a historical trajectory rooted in the pursuit of shared prosperity. By linking this foundation to human capital theory, the chapter underscores the BRI's role in promoting education, skill development, and capacity building across partner countries, thereby enhancing long-term development potential.

The chapter further elaborates on how the BRI seeks to balance economic efficiency with social fairness, aiming to construct a multi-dimensional inclusive development model. This model integrates economic, social, and environmental dimensions, ensuring that growth outcomes are not only measurable in terms of GDP but also equitable and sustainable. In this framework, the BRI is positioned as a proactive response to the widening global disparities in income, infrastructure, and opportunity. By investing in connectivity, people-to-people exchange, and knowledge-sharing platforms, the Initiative endeavors to mitigate the structural inequalities that limit social inclusion in many regions.

In addition, the chapter situates the BRI within the broader context of globalization and regional economic integration, highlighting its role as a mechanism for fostering cross-border cooperation and policy coordination. It analyzes the core connotations of the BRI, including its emphasis on openness, mutual benefit, and shared development. The relevance of the BRI to existing global development policies—such as the UN Sustainable Development Goals—is also discussed, reinforcing the argument that the BRI serves as both a complement and an alternative to conventional development models.

This chapter also offers a comprehensive third-party analysis of the Belt and Road Initiative's institutional architecture, highlighting its multi-tiered governance model that blends centralized strategic coordination with region-specific cooperation frameworks and adaptive implementation mechanisms.

Overall, this chapter provides a conceptual lens through which the BRI's inclusive ambitions can be understood. It builds the intellectual scaffolding necessary to evaluate how the Initiative operates in practice, setting the stage for the empirical and policy-oriented discussions that follow in subsequent chapters. By establishing a theoretical link between the BRI and inclusive growth, the chapter lays the groundwork for analyzing the Initiative not merely as a geopolitical or economic endeavor, but as a normative model for global cooperation in the 21st century.

The main scientific results were published in the following scientific articles: 29; 51;54;91;99;177;178;179;180;181.

CHAPTER 2
IMPLEMENTATION AND MECHANISMS OF THE ONE BELT ONE ROAD INITIATIVE

2.1 Analysis of China's inclusive development

Multi-Dimensional Profiling of China's Inclusive Growth. China's policy system is characterized by significant continuity, a feature that is instrumental in ensuring the stability and effectiveness of its development strategies. The country's efforts toward achieving equitable development are deeply intertwined with its national planning processes, which are carefully calibrated to address the evolving challenges of both domestic and international contexts. China's approach to fostering inclusive prosperity is not merely a short-term initiative but follows a long-term historical trajectory that has been shaped by a series of extensive debates, policy decisions, and continuous adjustments. The nation's development journey, particularly since the reform and opening-up policy initiated in 1978, reflects a series of gradual yet strategic efforts aimed at improving the welfare of its population while simultaneously promoting economic modernization and integration with the global economy.In this regard, China has established a broad-based development agenda, which it continues to optimize. A key feature of this agenda is the comprehensive "Five-in-One" framework, which strategically integrates five critical dimensions: economic, political, cultural, social, and ecological development. These pillars are designed to support one another, ensuring that China's growth trajectory is not solely focused on economic performance but is also inclusive, sustainable, and balanced across all aspects of society. (see Table 2.1). The overarching ambition of this inclusive approach is to realize affluence, democratic governance, cultural advancement, social cohesion, and ecological beauty [22].

After a prolonged phase of rapid advancement, China's economy has transitioned from a focus on speed to quality. This evolution from "high-speed growth" to "high-quality development" signifies a strategic shift that prioritizes not only expansion in output, but also places greater importance on the efficiency, sustainability, and depth

of economic performance. Central to this new developmental phase are technological breakthroughs and the modernization of industries, marking the beginning of a more inclusive and innovation-driven growth era [33].

Table.2.1

Brief Introduction to China's Inclusive Growth Policy

Year	Plan Name	Political	Economy	Cultural	Society	Ecological
2006-2010	The 14th Five-Year Plan	Promote democracy and rule of law, improve grassroots democratic system, and enhance government credibility and efficiency.	Enhance independent innovation capabilities and promote regional coordinated development.	Deepen cultural system reform to meet the spiritual and cultural needs of the people.	Propose the goal of building a socialist harmonious society, strengthen the construction of the social security system, and promote fair employment and income distribution.	For the first time, energy conservation and emission reduction will be used as a binding indicator to promote the construction of a resource-saving and environmentally friendly society and strengthen environmental protection.
2011-2015	The 14th Five-Year Plan	Expand social democracy, strengthen the rule of law, and improve government governance capabilities and public service levels.	Promote the development of strategic emerging industries,enhance the ability of economic independent development.	Accelerate cultural reform and development, and enhance cultural soft power and international influence.	Strengthen and innovate social management, improve the basic public service system, expand social security coverage, and improve people's quality of life.	Strengthen environmental protection, promote green development, propose goals for controlling greenhouse gas emissions, and actively respond to global climate change.
2016-2020	The 13th Five-Year Plan	Promote the construction of a law-based government and strengthen the fight against corruption.	Emphasis on innovation-driven development, promote high-quality economic development, and optimize the industrial structure.	Promote cultural confidence and enhance the country's cultural soft power.	Build a moderately prosperous society in all respects, implement targeted poverty alleviation, improve the level of public services such as education and medical care, and promote social fairness and justice.	Strengthen the construction of ecological civilization, promote the battle against pollution, advocate a green and low-carbon lifestyle, and improve the quality of the ecological environment.
2021-2026	The 14th Five-Year Plan	Strengthen the construction of socialist democracy and the rule of law.	Improve the modernization level of the industrial chain and supply chain.	Enhance the country's cultural soft power and promote cultural exchanges and mutual learning between China and foreign countries.	Promote common prosperity, improve the social security system, optimize population policies, improve the quality of public services, and enhance the people's sense of gain, happiness, and security.	Continue to promote the construction of ecological civilization, implement the goals of carbon peak and carbon neutrality, strengthen environmental governance and ecological protection, and promote green and low-carbon development.

Source: [Chinese Government Website]

We can gain a deeper understanding of China's inclusive development policy by examining key indicators such as the country's GDP per capita, GINI Coefficient, Human Development Index (HDI), and the incidence of poverty. These metrics offer a comprehensive view of how economic growth has been distributed across the population, as well as the broader social and economic implications of China's

development strategies， we can form a clearer picture of the successes and challenges in China’s journey towards inclusive development.

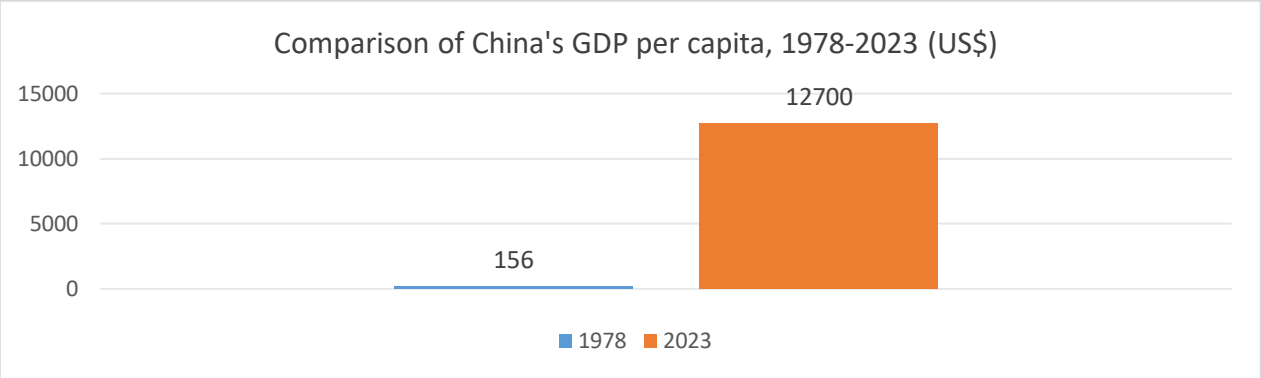

Fig. 2.1. Per capita gross domestic product of China, 1978-2023 (US$)

Source: [36].

China’s per capita gross domestic product soared from just US$156 in 1978 to approximately US$12,700 by 2023, reflecting a profound leap in national economic strength and overall living standards. Maintaining an average yearly expansion of 8.1 percent, the country underwent a remarkable transformation from a predominantly agricultural society to becoming the world’s second-largest economic powerhouse, propelled by sustained industrial growth, rapid urban development, and deep integration with the global economy (see fig.2.1).

In 45 years, the GDP per capita has leaped from a low starting point to a high-income threshold. This leap shows that China's inclusive development has achieved remarkable results. China has made great progress in multiple fields such as market-oriented reforms, industrialization, globalization, and scientific and technological innovation. China has steadily moved from a low-income country to an upper-middle-income country， China's inclusive growth is reflected in all aspects.

The Gini coefficient has decreased from 0.491 in 2008 to 0.474 in 2023, indicating a gradual improvement in China's income inequality over this period (see fig.2.2). This decline suggests that significant efforts to reduce the income gap between rural and urban populations, improve the living conditions of disadvantaged groups, and advance social fairness have shown positive outcomes. This social change is closely related to the policies of targeted poverty alleviation, rural revitalization, tax adjustment and

improvement of the social security system implemented by the Chinese government in the past decade. The poverty alleviation strategy has lifted nearly 100 million rural poor people out of poverty, and the income gap between urban and rural residents has gradually narrowed; at the same time, economic reforms and transfer payment policies have effectively adjusted the distribution pattern between high-income groups and middle- and low-income groups. In addition, with the improvement of the tertiary industry, the popularization of the digital economy and the promotion of equalization of public services, the inclusiveness of economic growth has gradually emerged.

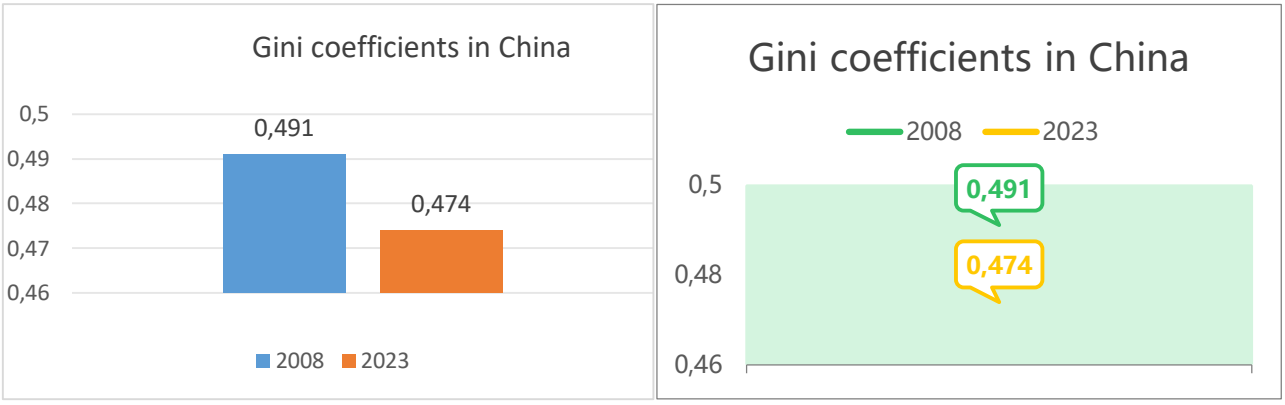

Fig. 2.2.Comparison of China's GINI Coefficient, 2008-2023

Source: [36]

Although the decline in the Gini coefficient shows that the degree of social inequality has eased, 0.46 is still higher than the international warning line (0.4), suggesting that in the future, it is still necessary to optimize the redistribution mechanism and strengthen the fair allocation of education and medical resources to further promote the realization of the goal of common prosperity.

Over the span of approximately three decades, China’s Human Development Index (HDI) has shown remarkable improvement, highlighting the country's sustained efforts toward socioeconomic advancement. In 1990, China’s HDI was recorded at a relatively low level of 0.502, reflecting the early stages of development and the challenges the country faced in areas such as health, education, and income. However, by 2022, this figure had risen sharply to 0.788, indicating significant progress across multiple dimensions of human development. This substantial increase underscores the

effectiveness of China's long-term strategies aimed at improving the living standards of its population and reducing developmental disparities. (see fig.2.3).

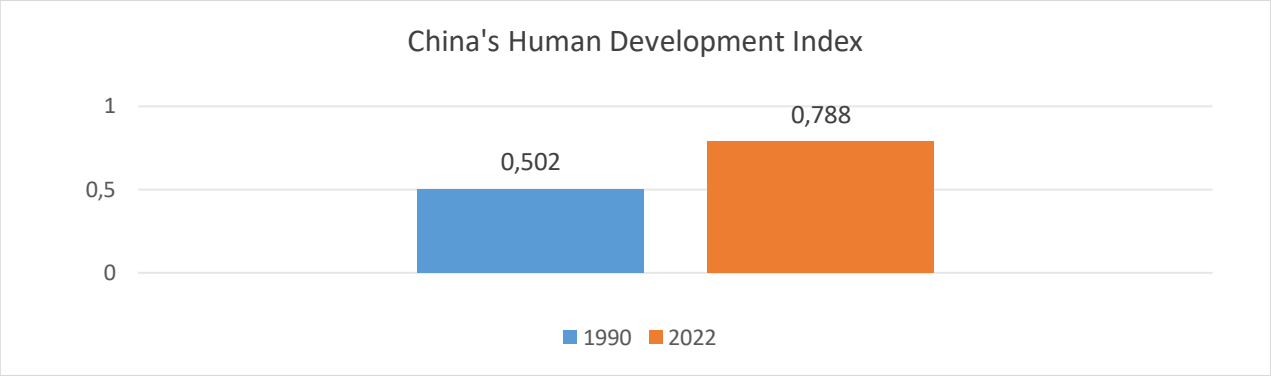

Fig. 2.3.Comparison of China's Human Development Index, 1990-2022

Source: [36]

The expansion of education coverage and the extension of human life expectancy have become primary catalysts in the steady rise of the Human Development Index (HDI), reflecting broader progress in social development. Increased access to quality education enhances individual capabilities and societal productivity, while longer life expectancy signals improved healthcare systems and living conditions. Furthermore, the continuous improvement of residents' living standards provides substantial support for sustained growth in HDI, underscoring the multidimensional nature of human development.

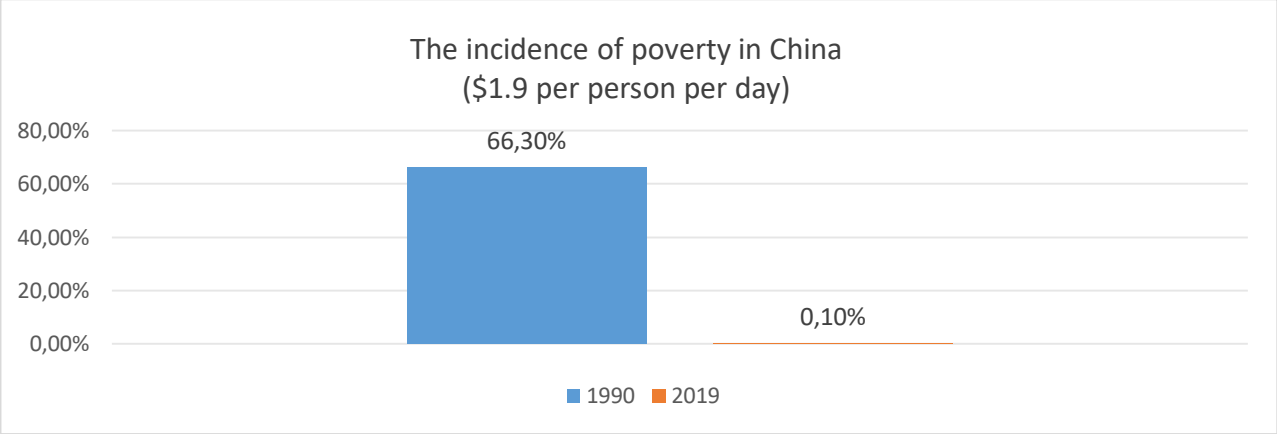

Fig. 2.4.Comparison of the incidence of poverty in China, 1990-2019

Source:[36]

According to the globally recognized poverty threshold of $1.90 per day, China's poverty rate has fallen dramatically from 66.3% in 1990 to approximately 0.1% by

2019. These statistics reflect China's substantial progress in advancing broad-based development (see fig.2.4).This leapfrogging transformation serves as a compelling manifestation of China's efforts in fostering a more inclusive development trajectory. China's dramatic reduction in poverty—characterized by a sharp and sustained decline over the past decades—is not merely a statistical success, but a concrete demonstration of policies oriented toward social inclusion. The approach combined targeted poverty alleviation measures, rural revitalization, and access to education and healthcare, enabling disadvantaged populations to participate more fully in economic and social life. In this sense, the shift is not only quantitative in nature, but also qualitative, reflecting a broader governance commitment to ensuring that growth translates into meaningful improvements in people's well-being across all regions and groups.

Another feature of China's inclusive growth policy is to promote balanced development among different regions across the country. The purpose of the Western Development Strategy is to "use the remaining economic development capacity of the eastern coastal region to raise the level of economic and social development in the western region, and strive to achieve good and rapid economic development in the western region. The rural development revitalization plan is designed to enhance the overall quality of economic progress in countryside regions by narrowing the urban–rural divide. This is achieved through upgraded infrastructure, industrial empowerment, and expanded public services. The goal is to establish a new dynamic in which eastern, central, and western regions leverage their respective advantages, support one another, and advance collectively [27].

China is actively advancing the development of new strategic sectors, such as cutting-edge technology, the digital economy, biotechnology, and artificial intelligence. In recent years, investment linked to the Belt and Road Initiative (BRI) has seen steady growth. The value-added output of high-tech sectors has expanded at an annual average rate of 11%, notably outpacing the overall industrial average. Additionally, the share of high-tech products in foreign trade exports has risen consistently, reflecting significant progress in industrial transformation and a shift towards more innovation-driven economic expansion. [24].

Poverty Eradication as a Defining Feature of China's Inclusive Development. As the most populous developing nation, China has historically grappled with widespread poverty, stemming from its weak economic base and uneven regional development. The scope, geographical spread, and severity of poverty across the country have posed challenges that are exceptionally complex and uncommon on a global scale, making poverty alleviation an extraordinarily difficult task.[37].

China established its first official poverty line in 1986, setting the threshold at an annual per capita household net income of 206 yuan (RMB), identifying approximately 125 million people as impoverished, with the primary focus on meeting basic survival needs. In 2001, with the launch of the first ten-year Rural Poverty Reduction and Development Program, the benchmark was raised to 865 yuan(RMB), corresponding to 94.23 million individuals. A decade later, in 2011, during the formulation of the second ten-year plan, the poverty threshold was further increased to 2,300 yuan(RMB), expanding the identified poor population to around 122 million [36].

The identification and exit of China's impoverished population with core indicators including whether the annual per capita disposable income of the household consistently surpasses the prevailing national poverty threshold, along with achieving stability in the "two assurances and three guarantees"—that is, stable access to food and clothing, as well as reliable provision of compulsory education, essential healthcare services, and safe housing conditions. By the close of 2020, China had successfully fulfilled its targeted poverty alleviation mission for the new era as scheduled, lifting all 98.99 million rural residents above the poverty line based on the prevailing criteria (see fig.2.5), with all 832 designated impoverished counties officially removed from the national poverty list, and all 128,000 registered poor villages delisted.

This transformation not only signifies China's historic achievement in eradicating absolute poverty, but also stands as a concrete embodiment of the inclusive growth paradigm—ensuring that economic advancement, supported by sound institutional arrangements, delivers benefits broadly across society, particularly to vulnerable populations. While the milestone of eliminating absolute poverty has been reached,

new forms of inequality and exclusion continue to pose challenges. Moving forward, it is essential to shift the development model from a focus on "efficiency first" toward one that gives equal weight to both equity and efficiency. This can be pursued through a coordinated approach that integrates rural revitalization with balanced urbanization, enhances redistributive mechanisms via tax reform, and develops more effective systems for addressing relative poverty. These steps are crucial in laying a durable foundation for realizing the broader vision of common prosperity in a more sustainable and inclusive manner.

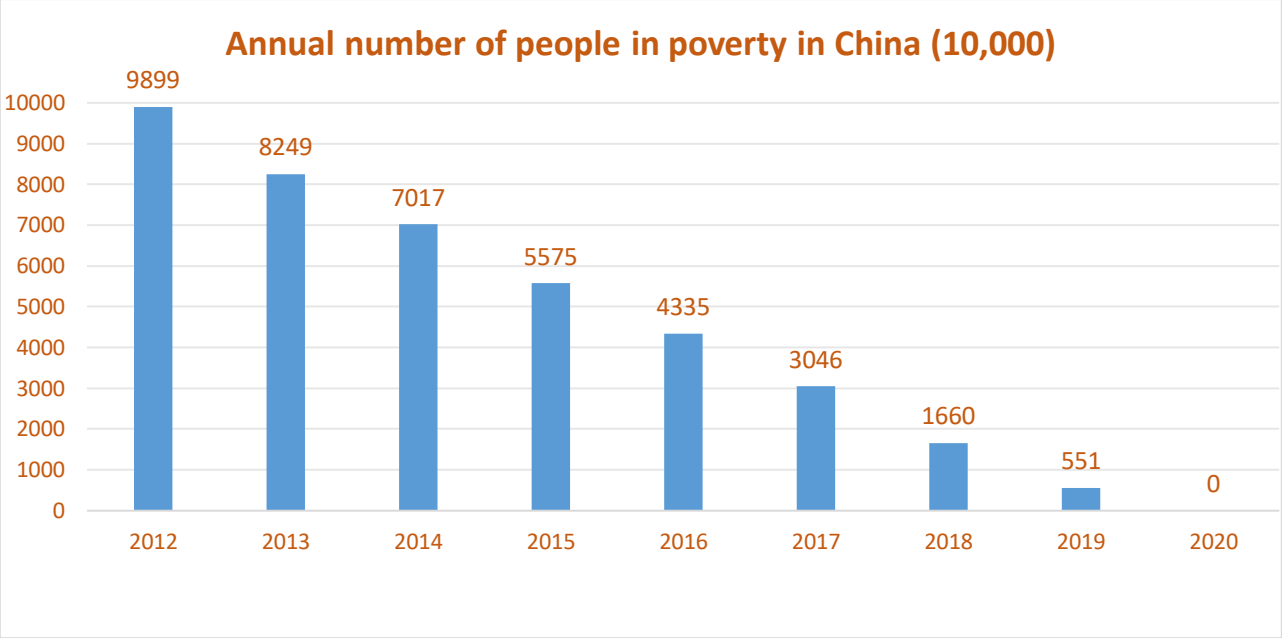

Figure.2. 5.Changes in China's rural poor, 2012-2020

Source: [39]

The income levels of individuals living in poverty have shown a sustained upward trajectory. In formerly impoverished regions, the average disposable income per rural resident increased from 6,079 yuan (RMB) in 2013 to 12,588 yuan (RMB) by 2020, reflecting a compound annual growth rate of 11.6%, which has consistently outpaced the national rural average. This rate exceeds the national rural growth by 2.3 percentage points, highlighting the accelerated income improvements in targeted areas.

Based on the World Bank's global poverty benchmark, more than 70% of the worldwide poverty reduction during this period was attributable to China's efforts. The country met the poverty eradication targets outlined in the UN 2030 Agenda for

Sustainable Development a full decade ahead of schedule, earning broad recognition from the global community. China's campaign against poverty exemplifies its targeted approach to alleviation and elimination, a strategy that stands as a key component of the nation's model of inclusive development [36].

China's Strategy for Equitable Economic Expansion under Environmental Sustainability. Throughout China's decades-long period of accelerated economic expansion, the reliance on resource-intensive and pollution-heavy development pathways has led to significant ecological consequences, notably serious air contamination, dwindling water resources, and widespread soil deterioration. These environmental challenges have disproportionately impacted economically disadvantaged populations and inhabitants of remote regions, who frequently lack sufficient means or institutional support to effectively manage environmental hazards [40].

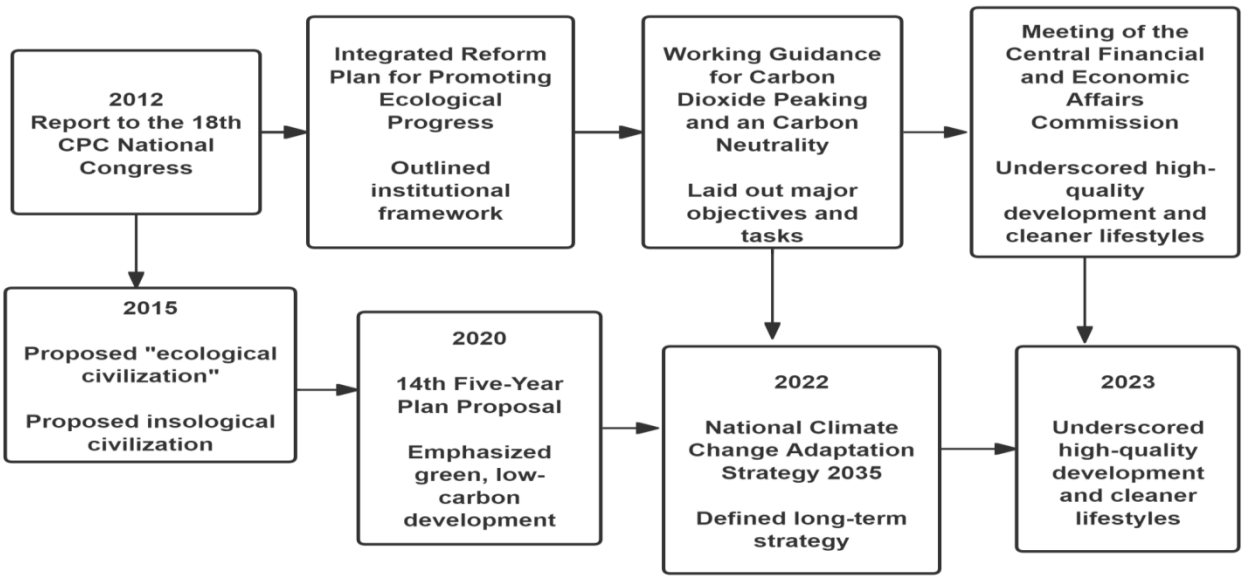

Fig.2.6.Recent Evolution China's Green Development Policies

Source:[45]

In view of this, the Chinese government first explicitly introduced the concept of "ecological civilization construction" in 2012, embedding environmental sustainability as a fundamental pillar in the nation's broader developmental strategy. By 2017, authorities reinforced the principle that "lucid waters and lush mountains are invaluable assets"(see fig.2.6).

During the 2019 UN General Debate, China committed to enhancing its nationally determined contributions in controlling carbon outputs by 2030, with the long-term objective of achieving carbon neutrality by 2060 through the implementation of more robust policy frameworks. It also announced its intention to peak carbon emissions before 2030 and work toward full neutrality by mid-century [41].

The aggregate energy usage across all sectors in China from 1978 to 2022 increased from 571,440,000 tonnes of standard coal to 541,000,000 tonnes of standard coal, a rise of nearly 10 times (see table 2.2).

China's total energy consumption rose sharply from 570 million tons of standard coal in 1978 to 5.41 billion tons in 2022, illustrating the scale and intensity of its economic expansion. During this period, the share of coal in the energy mix declined significantly—from 70.7% to 56.2%—while clean energy sources, including primary electricity and other renewables, grew from 3.4% to 17.5%.

Meanwhile, oil's proportion remained relatively stable. These structural changes in the energy sector mirror the dual dimensions of China’s inclusive growth strategy: on one hand, driving industrialization and economic performance; on the other, mitigating environmental degradation and fostering sustainable pathways through cleaner energy adoption. The notable increase in clean energy utilization, accompanied by evolving consumption patterns and a growing policy emphasis on equitable growth, has collectively contributed to a more balanced trajectory of regional development in China. These developments have not only supported the narrowing of regional disparities, but have also played a pivotal role in accelerating the country’s transition toward a low-carbon economic model. The combined effect of these efforts is shaping a new model of modernization—one that aligns with global sustainability trends while also addressing the specific needs of domestic development.

Table. 2.2

Total energy consumption and composition of China, 1978-2022

Years	Total energy consumption (tonnes of standard coal)	Share of total energy consumption (%)			
		coals	petroleum	petroleum	Primary electricity and other energy sources
1978	57144	70.7	22.7	3.2	3.4
1980	60275	72.2	20.7	3.1	4.0
1985	76682	75.8	17.1	2.2	4.9
1990	98703	76.2	16.6	2.1	5.1
1992	109170	75.7	17.5	1.9	4.9
1994	122737	75.0	17.4	1.9	5.7
1996	135192	73.5	18.7	1.8	6.1
1998	136184	70.9	20.8	1.8	6.5
2000	146964	68.5	22.0	2.2	7.3
2002	169577	68.5	21.0	2.3	8.2
2004	230281	70.2	19.9	2.3	7.6
2006	286467	72.4	17.5	2.7	7.4
2008	320611	71.5	16.7	3.4	8.4
2010	360648	69.2	17.4	4.0	9.4
2012	402138	68.5	17.0	4.8	9.7
2014	428334	65.8	17.3	5.6	11.3
2016	441492	62.2	18.7	6.1	13.0
2018	471925	59.0	18.9	7.6	14.5
2020	498314	56.9	18.8	8.4	15.9
2022	541000	56.2	17.9	8.4	17.5

Source: [43]

According to the New Energy Industry Development Trend Research Report released by the China Energy Administration, the country's electricity generation

structure is expected to become significantly greener by 2050 (see fig.2.7). These advancements reflect China's commitment to aligning its industrial policy with environmental objectives, and its growing influence in shaping the future of global energy systems. By integrating green technology into its economic model, China not only contributes to the mitigation of climate change but also sets a benchmark for other nations seeking to achieve a sustainable and resilient energy transition. As a result, China now leads the world in several core sectors of green technology, demonstrating both technological capability and industrial scale. As a practitioner of environmentally conscious development, China has emerged as a global leader in the clean energy shift, ranking at the forefront worldwide in key green technology sectors such as solar modules, wind energy equipment, new-energy vehicles, and advanced battery systems [42].

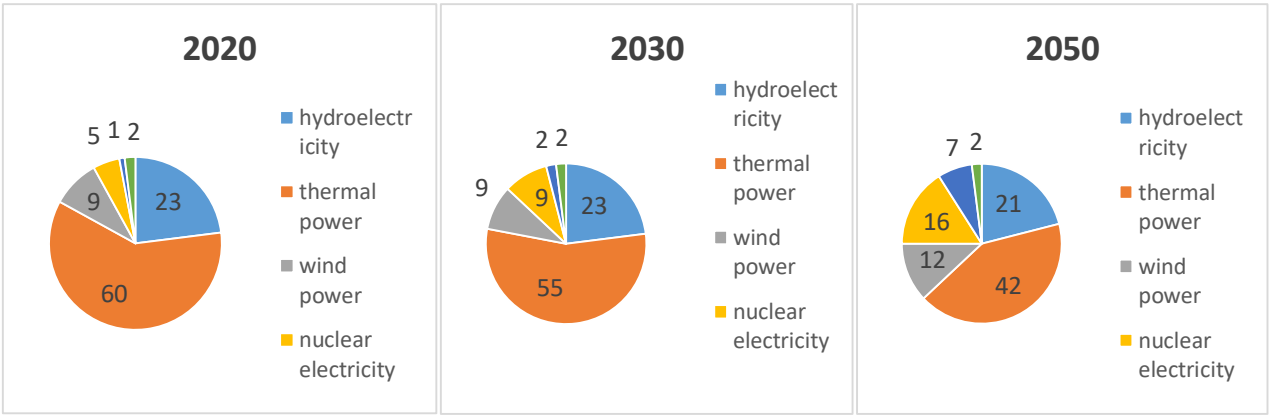

Fig. 2.7.Changes in our power generation mix, 2020-2050

Source: [36]

By 2023, China had developed the largest clean energy generation system globally, accounting for over half of the newly added global capacity in renewable power. With over 70% of global photovoltaic manufacturing output, Chinese companies have formed a vertically integrated supply chain covering everything from silicon purification to the production of high-efficiency modules. This robust capability has positioned China as a pivotal provider of cost-effective solar solutions, significantly accelerating renewable energy deployment across both emerging and industrialized economies.

Furthermore, China has emerged as a dominant force in the electric vehicle (EV) battery industry, holding around 70% of global battery production capacity. The rise of China's companies underscores China’s strategic integration of industrial policy, environmental governance, and market-oriented reforms, which together have laid a strong foundation for global green transition leadership.At present, China's understanding of development justice is condensedunder the framework of the new development paradigm of "innovation, coordination, green, openness and sharing", which is based on comprehensive human development.

In the construction of the green "Belt and Road", China has distilled its unique development insights in energy transition and fostered the "green spillover effect" by promoting best practices, that is, it has continuously promoted the gradual spread of transformation experience, institutional norms, technological innovations, green demonstration projects, etc., which carry China's concept of ecological civilization, in the co-built countries, providing a broad platform for the real implementation of the principle of international energy justice in the just transformation of clean energy. The "green spillover effect" means that China's experience in transformation, institutional norms, technological innovations, and green demonstration projects carrying the concept of ecological civilization will be promoted gradually in the countries where the project is being constructed, thus providing a broad platform for the realization of the principle of international justice for energy during the shift towards an equitable and sustainable energy system.

In October 2021, the second Belt and Road Energy Ministers' Meeting, under the theme of "Working Together for a Greener and Inclusive Energy Future", issued the Qingdao Initiative on Green Energy Co-operation on the Belt and Road, calling for co-ordinated action to support sustainable development and a just energy transition in the countries of the South [40]. In March 2022, the Chinese government issued the "Opinions on Advancing Green Development in the Joint Construction of BRI", which emphasizes that the green development pattern of the joint construction of BRI will basically be formed by 2030, and that co-operation among the co-constructing countries will be solidly pushed forward in the areas of green infrastructure, green

energy, green transport, green finance, green science and technology, and green standards, among others (see fig.2.8).

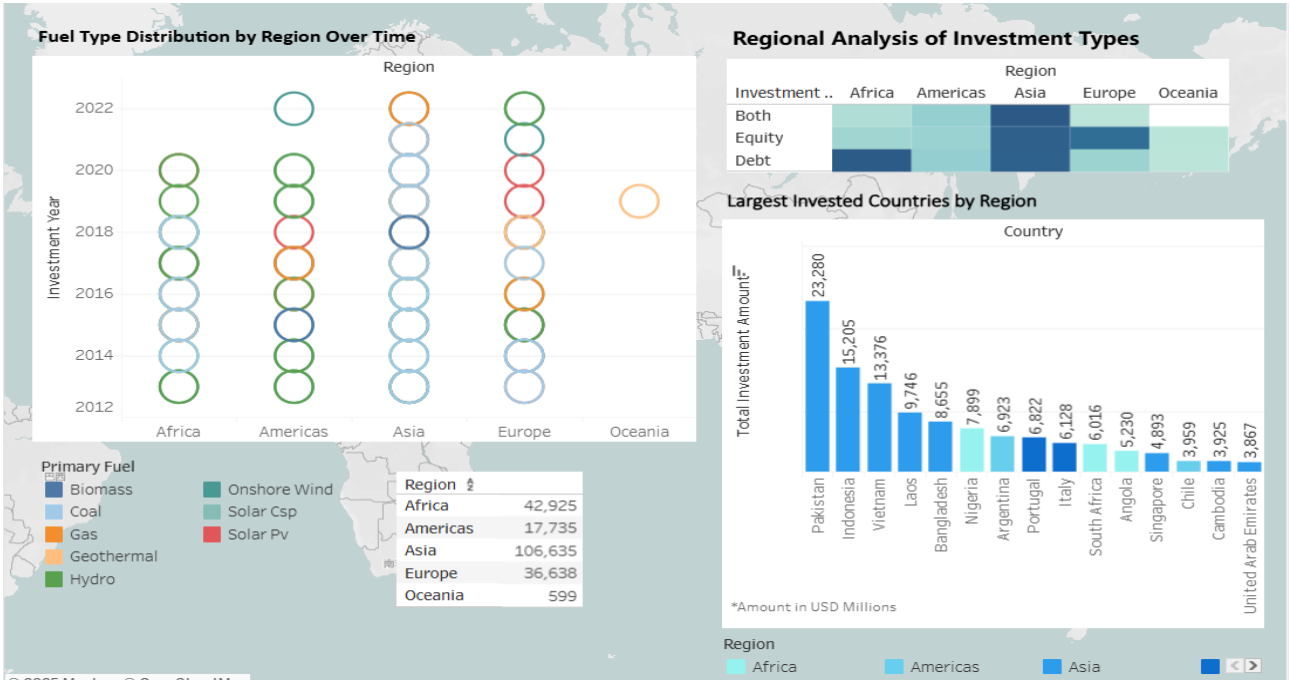

Fig.2.8.China's green investment in the Belt and Road Initiative increased significantly from 2013 to 2023

Source: [7]

The "New Normal" and the Evolution of China's Inclusive Growth. On the background of deepening reform and widening opening up, China's internal problems have more complexity and multi-dimensionality. The internal problem analysis bears the most crucial signification, which determines the feasibility and practicality of inclusive growth strategy.

In terms of population change, an accelerated trend of population aging has become a fact that can not be evade in our society. The National Bureau of Statistics estimates that by 2050, the fraction of the population that exceeds 60 years of age will account for \$39.6\%\$ of China's population. Population aging not only confronts the current pension system with great difficulties, but also directly affects the labor supply and demand, eventually impacting long-term growth capacity of the economy.Under such a background, the researches on how to extend the work force cycle by policy guidance and increase the quality and ratio of old people's employment by technological progress and education and training has become major problem of

realization of inclusive growth.It is at the same time, through perfecting fertility policy and rationalizing the demographic structure, we can take proactive measures to cope with potential negative pressure of the population decreasing trend, and give demographic support for China's long-term development [14].

Environmental pollution and resource scarcity have become bottlenecks constraining China's sustainable development. Data show that the proportion of days in which China's urban air quality standards are met is only 78.3 per cent. The large amount of pollutant emissions generated during industrialization and urbanization, as well as the massive consumption of natural resources, have triggered a series of ecological problems and adversely affected the health of the population and economic development [29]. In the formulation of inclusive growth strategies, it is important to include environmental factors in important considerations and to realize economic transformation through innovation-driven and green development. For example, exploring the carbon trading market, promoting the application of clean energy and improving the efficiency of resource utilization can not only ease the pressure on resources, but also contribute to the construction of a green and low-carbon economic growth model.

The disharmony between urbanization and ruralization is one of the special social structural problems of China and a bottleneck that needs to be solved for the construction of the inclusiveness of growth. Even though the Chinese current urbanization ratio has close to 60% , there exists huge disparity in economic development, livelihood level and public welfare provision between urban and rural region and farmers' mobility is constrained by institution.To resolve this difficulty, we must further reform household registration system, construct more just land use right transfer mechanism, and promote equalization of infrastructure and basic public services between urban and rural areas. Besides, advocate the metropolitan integration type's new type of urbanization so as to agglomerate economics benefits and alleviate the contradiction between urban and rural structures [20].

Faced with multiple internal challenges, China must adopt a systematic response. The deepening of reform and opening up, the optimization of macroeconomic policies,

the implementation of precision poverty alleviation and a science, technology and innovation-driven strategy could provide strong support for addressing those challenges. On this basis, building a social security system that covers the entire population, establishing a fair and efficient education system, and developing a comprehensive health protection network are essential measures. Together, they create a stable and equitable social foundation that supports inclusive growth by reducing disparities, enhancing human capital, and ensuring equal opportunities for all members of society.

2.2 Inclusive Development in BRI's Participating Countries

By the end of 2024, the BRI Initiative (BRI) had extended its presence across nearly every continent, firmly establishing itself as a truly global development framework. In total, 41 countries in Asia, 52 countries in Africa, 27 countries in Europe, 13 countries in North America, 10 countries in South America, and 12 countries in Oceania had officially joined the BRI. In addition to these nation-states, approximately 30 regional authorities and international social organizations also became involved in the initiative through various cooperation agreements and partnership frameworks (see fig.2.9).

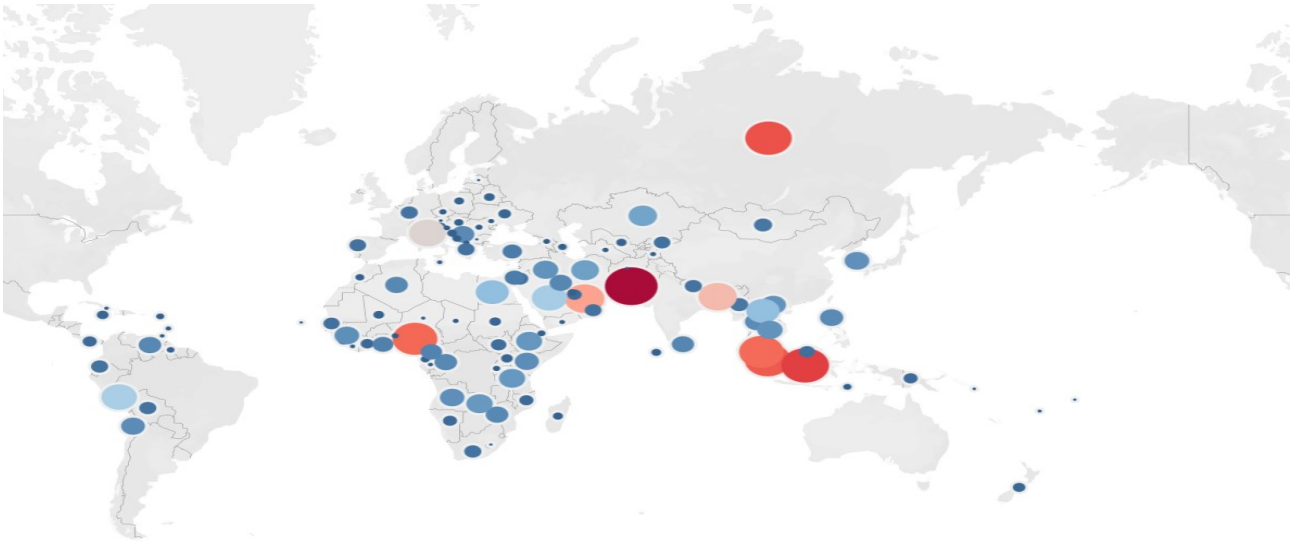

Fig.2.9.A brief diagram of China's investment differences in different BRI participating countries,2023.

Source: [7]

The geographic scope and scale of participation reflect not only the growing influence of the BRI but also its inclusive nature. These participating countries and regions represent a wide spectrum of economic development stages—from low-income developing nations to emerging markets and advanced economies. As such, the BRI has emerged as a strategic platform for fostering regional integration and sustainable global growth [32].

Trade and HDI Regression in BRI Samples .This study attempts to fill that gap by quantitatively exploring the relationship between international trade and the Human Development Index (HDI) across a diverse set of BRI-participating countries. The core

question addressed is: Does increasing trade openness and engagement with the BRI promote better human development ? To ensure diversity and analytical robustness, six countries have been selected as BRI samples, representing different continents, development stages, and BRI participation types:

Table.2.3

Comparison of sample countries under the BRI

Samples	Location	HDI Category (2023)	Role in BRI
Kazakhstan	Central Asia	High human development	Core BRI land corridor
Ethiopia	East Africa	Low human development	Key in Horn of Africa
Angola	Southern Africa	Medium human development	Strategic maritime node
Pakistan	South Asia	Low human development	CPEC flagship partner
Ukraine	Eastern Europe	High human development	BRI transit country (pre-conflict)
Hungary	Central Europe	Very high human development	EU member, BRI logistics hub

Source: [Author]

These countries serve as a microcosm of the diversity embedded within the Belt and Road Initiative (BRI), enabling the study to reflect variations in trade structures, institutional environments, and development pathways. By including economies from different regions and stages of development, the analysis captures a more representative picture of the BRI's multifaceted impact. The assumption underpinning this research is that human development, as indicated by the Human Development Index (HDI), is not isolated from international economic engagement, particularly with China through BRI-related activities.

This study applies a simple linear regression model to each selected country, treating HDI as the dependent variable and total trade with China as the independent variable. The working hypothesis is that higher levels of trade openness and integration within BRI trade flows—especially in terms of exports, imports, and possibly foreign direct investment—are positively associated with human development outcomes.

While this model does not account for all possible influencing factors, it provides a foundational understanding of the directional relationship between economic cooperation under the BRI and HDI performance across varied national contexts (see fig.2.10).

Sample	Total Trade with China (2016–2023 Bn USD)	HDI (2016–2023)
Kazakhstan	1309766.8	0.533
	1794313.4	0.534
	198813.7	0.535
	2200277.0538	0.537
	2150823.478	0.536
	2524982	0.537
	3109028	0.54
	4104309	0.54

Fig.2.10.Kazakhstan-China trade volume and HDI summary table

Source:[UNDP and China's Ministry of Commerce]

Through the regression analysis of Kazakhstan-China trade volume and HDI fro m 2016 to 2023, we can get the scatter plot and fitted line graph(see fig.2.11).

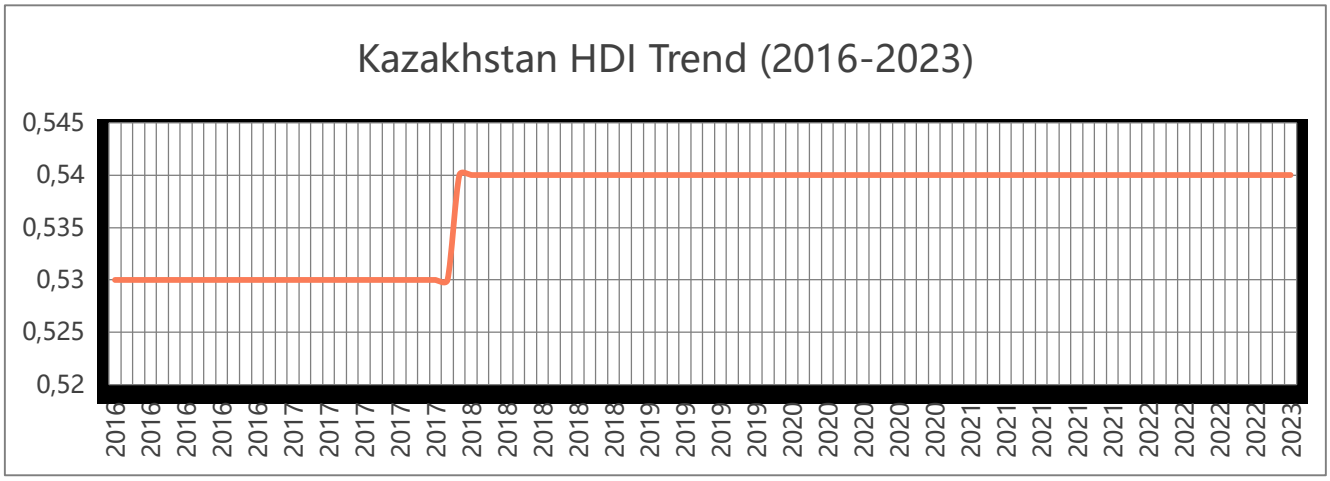

Fig.2.11.Kazakhstan HDI Trend scatter plot and fitted line graph

Source:[Author]

Through the regression analysis of Kazakhstan – China trade volume and Human Development Index (HDI) data from 2016 to 2023, a corresponding regression plot h as been generated (see Fig. 2.3), visually illustrating the relationship between the two variables over the observed period. Based on the linear modeling of the available data, the resulting regression equation has been calculated as follows:

Regression Equation: y = 0.0014X － 2.348.

This formula reflects the estimated linear trend between trade volume (X, in billi ons of USD) and HDI (y), which serves as the dependent variable in the model (see fi g.2.12).

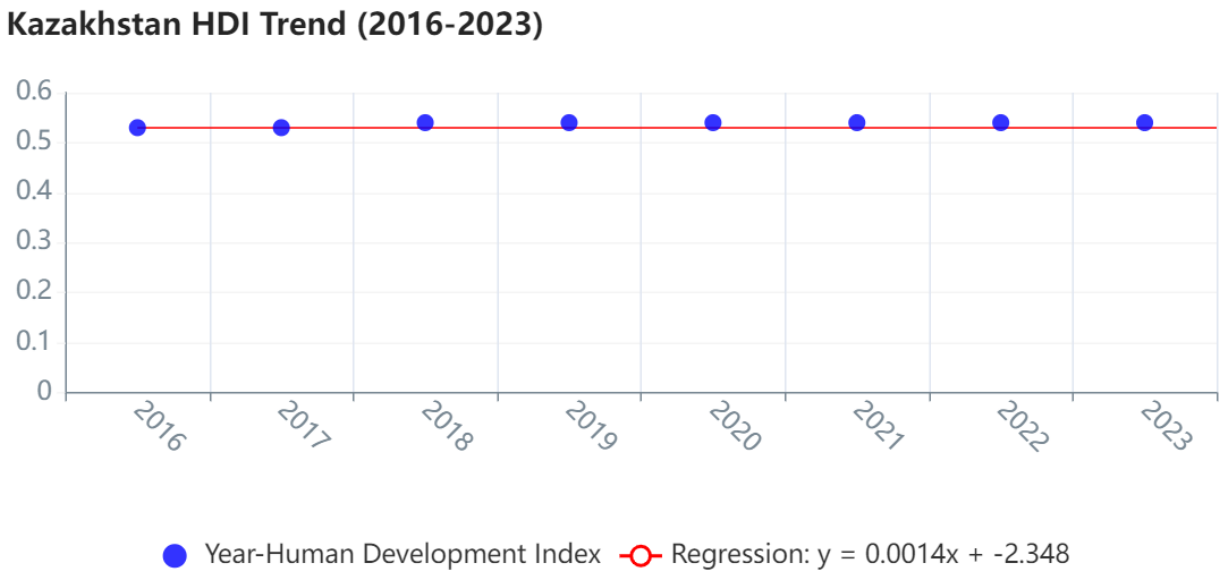

Fig.2.12.Kazakhstan HDI Trend Regression plot

Source:[Author]

In the case of Kazakhstan, a simple linear regression was conducted to evaluate t he relationship between the total trade volume with China and the Human Developme nt Index (HDI) from 2016 to 2023. The regression results indicate a positive correlati on between trade and HDI, with a slope coefficient of β=0.001036, suggesting that fo r each additional billion USD in trade with China, Kazakhstan's HDI increased by ap proximately +0.001036. The R-squared value of R^2=0.868 demonstrates that approxi mately 1.3% of the variation in HDI can be explained by trade volume. However, the p-value of 0.0006 implies that the relationship is statistically significant at the conven tional levels. This result may reflect the extent to which economic cooperation with C hina has supported Kazakhstan's development indicators.

Based on the regression analysis conducted for Kazakhstan, this paper applies the same methodological approach to the remaining five sample countries—Ethiopia, Angola, Pakistan, Ukraine, and Hungary. Using consistent variables, namely trade volume with China and Human Development Index (HDI) from 2016 to 2023,

regression analyses are performed individually for each country. The results are collectively illustrated in the comparative regression plot (see fig. 2.13), providing a visual overview of the trends and variations across different national contexts along the Belt and Road Initiative (BRI) corridor.

	Total Trade with China (2016–2023 Bn USD)					HDI (2016 – 2023)				
Year	**Ethiopia**	**Angola**	**Pakistan**	**Ukraine**	**Hungary**	**Ethiopia**	**Angola**	**Pakistan**	**Ukraine**	**Hungary**
2016	363411	1564677	1914706	671102	888940	0.465	0.581	0.56	0.743	0.836
2017	302214	2295616	2008401	738028	1012657	0.472	0.581	0.562	0.747	0.838
2018	287617	2807965	1910540	966353	1088229	0.479	0.581	0.564	0.75	0.84
2019	266745	2589313	1797305	119085	1021788	0.485	0.581	0.567	0.779	0.845
2020	257209	1650588	1748254	148797	1168662	0.489	0.581	0.557	0.779	0.845
2021	265678	2351885	2782488	19178897	1571198	0.489	0.581	0.544	0.779	0.846
2022	265785	2723738	2626680	64391	1550255	0.492	0.586	0.54	0.734	0.846
2023	302432	2305662	2074792	681163	1452468	0.497	0.586	0.54	0.734	0.846

Fig.2.13.Samples along the BRI trade volume and HDI summary table

Source:[UNDP and China's Ministry of Commerce]

During 2016–2023, Ethiopia's total trade volume with China showed considerable fluctuations, while its Human Development Index (HDI) experienced a steady upward trend. A linear regression analysis reveals a moderate inverse relationship between trade volume and HDI ($R^2 = 0.51$, $p = 0.046$). Although the negative coefficient is statistically significant, its small magnitude ($\beta = -2.21e\text{-}7$) suggests that increased trade does not necessarily translate into short-term human development gains. Structural factors may mediate this complex linkage in Ethiopia's context.

In Angola,The linear regression model of the total import and export volume between Angola and China (2016-2023) for the Human Development Index (HDI) has a poor fit ($R^2 = 0.089$), and the explanatory power of the independent variable on the dependent variable is not statistically significant ($p = 0.459$). The regression equation is: HDI=0.581+2.15×10−10× total import and export volume.

The data show that Angola's HDI remained stable (0.581) between 2016 and 2021, and only rose slightly to 0.586 in 2022-2023, while the total import and export volume fluctuated significantly during the same period (US$15.65 billion to US$28.08 billion).

Although the model shows that the coefficient of total import and export volume is positive, its magnitude is extremely small (2.15e-10). Further analysis of the residual plot revealed that the residuals were concentrated within the range of ±0.002, but were limited by the sample size (n=8) and the low variability of the HDI. In the next step, Angola should take advantage of the advancement of the Belt and Road Initiative in Angola and pay more attention to its medical and education industries.

Pakistan's total import and export volume (2016-2023) on the Human Development Index (HDI) has a certain explanation under the linear regression model of. The data shows that Pakistan's HDI gradually increased from 0.56 to 0.567 between 2016 and 2019, but showed a downward trend after 2020 (0.54 in 2023), and the total import and export volume fluctuated significantly during the same period (the lowest was 17.48 billion and the highest was 27.82 billion US dollars). The regression equation was affected by the epidemic in 2019 and fluctuated greatly. Before 2019, the two showed a significant positive correlation, but since 2020, it showed that the correlation between the two was weak and the direction was inconsistent with expectations. Further observation found that the decline in HDI coexisted with the short-term growth of the total import and export volume after 2020. In general, the total trade volume between Pakistan and China has a certain impact on its human development index, and the two sides can continue to make further progress under the framework of the Belt and Road Initiative in the future.

The linear regression model of Ukraine's total import and export volume (2016-2023) for the Human Development Index (HDI) has a weak explanatory power (R^2 = 0.271), and the impact of the independent variable on the dependent variable is not statistically significant (p = 0.139). The data show that Ukraine's HDI gradually increased from 0.743 to 0.779 between 2016 and 2021, which is partially consistent with the growth trend of total import and export volume (US$6.71 billion to US$19.18 billion) during the same period, but after 2022, total import and export volume plummeted (US$7.64 billion to US$6.81 billion), accompanied by a drop in HDI to 0.734. The regression equation is:

Although the coefficient is positive, its actual effect is weak (1.67e-7), and the model fails to fully explain the variability of HDI. It is worth noting that the Russia-Ukraine conflict in 2022 may have a structural interference on trade and HDI, resulting in abnormal data fluctuations. For Ukraine, the Belt and Road Initiative can make up for its weak infrastructure.

In Hungry, The linear regression model of the total import and export volume between Hungary and China (2016-2023) and the Human Development Index (HDI) shows a certain positive correlation ($R^2 = 0.647$). The data shows that Hungary's HDI has steadily increased from 0.836 in 2016 to 0.846 in 2021 and stabilized. During the same period, the total import and export volume increased from about 8.89 billion to 15.71 billion US dollars and then fell slightly.

The coefficient direction is positive and the model has strong explanatory power (R^2=0.647), and there is a strong correlation between the two. It is worth noting that HDI has stabilized after 2020, while the total import and export volume has increased in the same period, which may reflect the diminishing marginal effect of HDI when it approaches a high level of development. In general, Hungary's trade behavior with China shows a positive signal of positive correlation with its human development index.

Energy Trade and Transport Development in Central Asia. Central Asia possesses abundant reserves of oil, natural gas, and a relatively comprehensive array of mineral resources, making the region strategically significant for international energy producers and global commodity markets. These natural endowments offer strong potential for regional economic development and integration into international supply chains. However, the effective exploitation and export of such resources—particularly oil and natural gas—are highly dependent on the availability of efficient transportation infrastructure. In this context, the construction, operation, and cross-border coordination of pipeline systems play a critical role in ensuring the timely and secure delivery of energy products to external markets.

Despite this potential, the overall transportation systems of Central Asian countries remain underdeveloped. In terms of scale and modernization, both road and railway networks are generally limited, with much of the infrastructure dating back

several decades. Many transport routes are in urgent need of renovation or reconstruction to meet current logistical and economic demands. These limitations significantly constrain the capacity of Central Asian economies to expand their export base or participate more fully in regional economic corridors. The current state of transport infrastructure in the region (see fig 2.14).

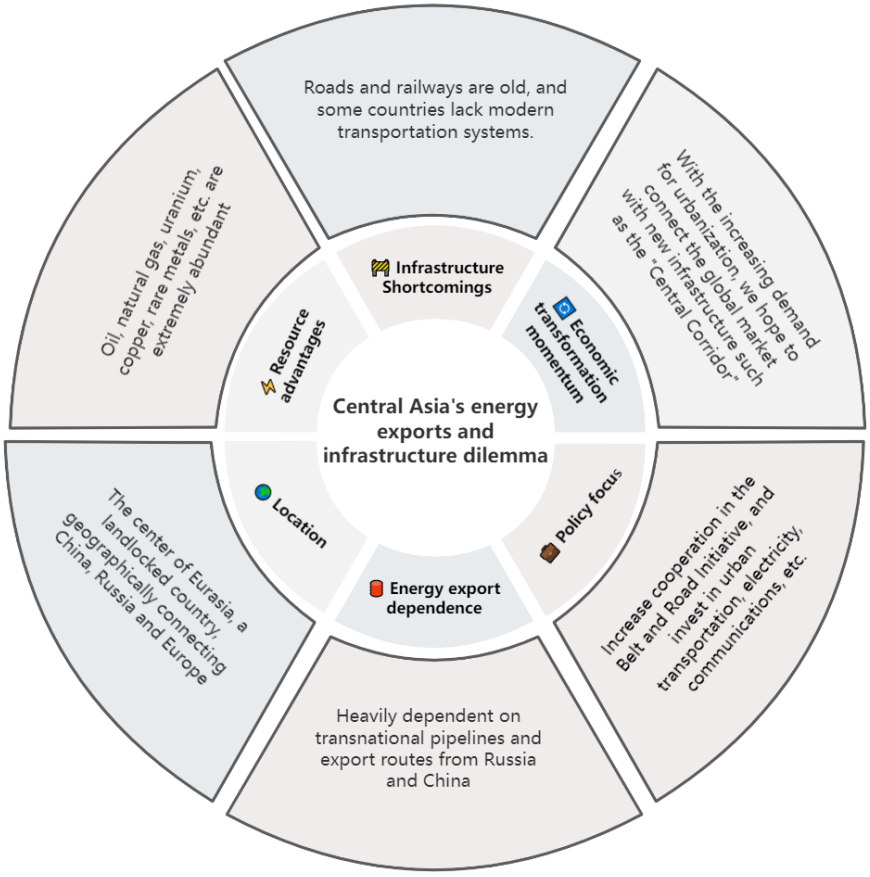

Fig.2.14.Central Asia's energy exports and infrastructure dilemma

Source:[46]

Being mid-continental state, Central Asia is strategically positioned at the middle of the Eurasian continent as it can be a primary key for Eurasian Economic Corridor. It can be shown that a number of landlocked areas cannot access international markets through efficient logistics networks, e.g., Uzbekistan has no contemporary railway system, making expensive and slower cargo transportation.As economic development and urbanization is progressing, new urban infrastructures demand in Kazakhstan and Uzbekistan are arising urgently such as power supply systems, urban transportation, communication networks.

These countries intend to strengthen energy export channels from investment and technical perspective by virtue of “BRI” policy. Until now, China-Kazakhstan oil pipeline, Central Asia Gas Pipeline have been good example of China and central Asian countries joint cooperation in the energy. In recent years, “BRI” policy brought considerable amount of financial funds in Central Asian region and increased works on railway, road, airfield construction.According to the statistics, Khorgas East Gate dry port in Kazakhstan is an important node of cargo transportation of European freight transportation of China. Uzbekistan promoted the efficiency of international logistics by its national railways infrastructure development, which were interrelated with its surrounding states and Tashkent.

Regional Economic Integration and Trade Facilitation in Southeast Asia. Southeast Asian countries occupy an important location in the “BRI”, especially Thailand and Vietnam. They have advantages with their geograph location, economic development potential, and relatively close trade relations with China, which make them more pay attention to the development of regional economic integration and trade facilitation under the framework of the initiative [34].

Southeast Asian region, is a vital transit location of the “Maritime Silk Road” connecting Eurasia and the Pacific Ocean, which is one of the central areas of “BRI” initiatives. Thailand, and Vietnam are important countries in Indochinese Peninsula, and the countries of the Indochina Peninsula, and one of the important gateway in Southeast Asian region to link China with the market of South Asia, Southeast Asia. ASEAN members are strong correlation among economics, and the economic increase rank is more outstanding worldwide.Vietnam and Thailand are the most active countries of foreign trade in ASEAN, having the advantages in attracting foreign capital, exporting manufacturing products and regional logistics.

While progress has been done for infrastructure building in Southeast Asia, the countries are actually desperately in need of their infrastructure inter-connectivity. Most of the Southeast Asian countries’ economies are export-driven and especially are vulnerable in case of unstable cross-border logistics and trade routes.Thailand has invested heavily in its domestic transport system (including high-speed railways and

major highways) as part of the BRI Initiative [33]. Vietnam, enhancing port and airport infrastructure to enhance its participation in the global supply chain through “BRI” initiative.Thailand and Vietnam expect to enhance bilateral and multilateral trade through smoother customs procedure and lower tariffs.

Through the "Belt and Road" framework, ASEAN countries have strengthened cooperation with China and neighboring countries in economic policies, financial systems and tariff agreements to promote regional economic integration.

The Belt and Road Initiative (BRI) has played a transformative role in strengthening infrastructure connectivity and deepening economic integration between China and ASEAN countries. A prominent example is the China-Thailand High-Speed Railway project, which links Kunming in China with Bangkok in Thailand. Beyond serving as a symbol of bilateral cooperation, this railway project significantly contributes to the modernization of Thailand’s domestic transportation network, enhancing internal mobility and reducing logistical bottlenecks. At the same time, the railway fosters stronger cross-border trade and investment relations not only with China but also with other ASEAN member states, positioning Thailand as a pivotal node in the transregional economic corridor. Similarly, Vietnam has benefited from BRI-related infrastructure financing, which has been directed toward upgrading critical maritime infrastructure, including Haiphong Port in the north and Ho Chi Minh City Port in the south. These improvements have strengthened Vietnam’s logistics capacity and its strategic positioning as a transportation and shipping hub in Southeast Asia. The modernization of port facilities has also attracted greater volumes of trade and enabled smoother regional supply chain integration. [32].

The signing of the "Regional Comprehensive Economic Partnership" (RCEP) provides institutional guarantees for Southeast Asian countries to deepen regional economic integration through the "BRI".

The China-ASEAN trade index from 2010 to 2022, which is based on the trade data between China and ASEAN (see fig.2.15). Taking 2010 as the benchmark (index 100), the trade index has been rising year by year, reaching 164.9% in 2022, indicating that the scale of trade has increased by 64.9% in 12 years, which directly reflects the

trend of deepening trade cooperation between China and ASEAN, and reflects the increasingly close economic and trade relations between the two sides, especially under the promotion of the "BRI" initiative and regional economic integration, trade exchanges have been significantly enhanced.

Figure 2.15. China-ASEAN trade index

Source: [47]

Thailand has put forward the “Eastern Economic Corridor” (EEC) development scheme matching the “BRI” strategy to promote the construction of high-speed railway, deepsea port and industrial park, of which large-scale Chinese capital is involved, especially in new energy and intelligent manufacturing industries, assisting the industrial structure upgrade in Thailand.Financial support to Vietnam has come with investments and support of improved infrastructure under the “BRI” initiative to export-based economic development.

Challenges in Africa’s Infrastructure Development. Africa’s infrastructure development remains marked by significant disparities, both in quality and spatial distribution. Core transport, energy, and communication networks are often concentrated in a few urban hubs, leaving vast rural and cross-border areas underserved. This uneven layout not only constrains regional integration and economic mobility but also reinforces existing development gaps. Inadequate planning, limited financing, and institutional weaknesses contribute to these persistent imbalances. As a result, the continent faces difficulties in achieving inclusive and sustainable infrastructure

connectivity, which is essential for unlocking its economic potential and improving living conditions across all regions.(see fig.2.16). Ports, airports, resort cities and other resources are mainly concentrated in the eastern, southern and western coastal areas, while the central and inland countries have sparse facilities and weak transportation links. Although the road coverage is wide, the railway and pipeline systems are in a broken state, affecting regional integration and logistics efficiency. The railway gauges of African countries vary greatly, including a variety of specifications such as 600 mm to 1435 mm. At the same time, the coverage of railway lines is limited. This imbalance in infrastructure development not only limits the release of economic potential of African countries, but also increases regional development gaps. Therefore, strengthening unified standards, promoting interconnection, and expanding foreign investment such as Chinese capital have become the key to Africa's sustainable development [33].

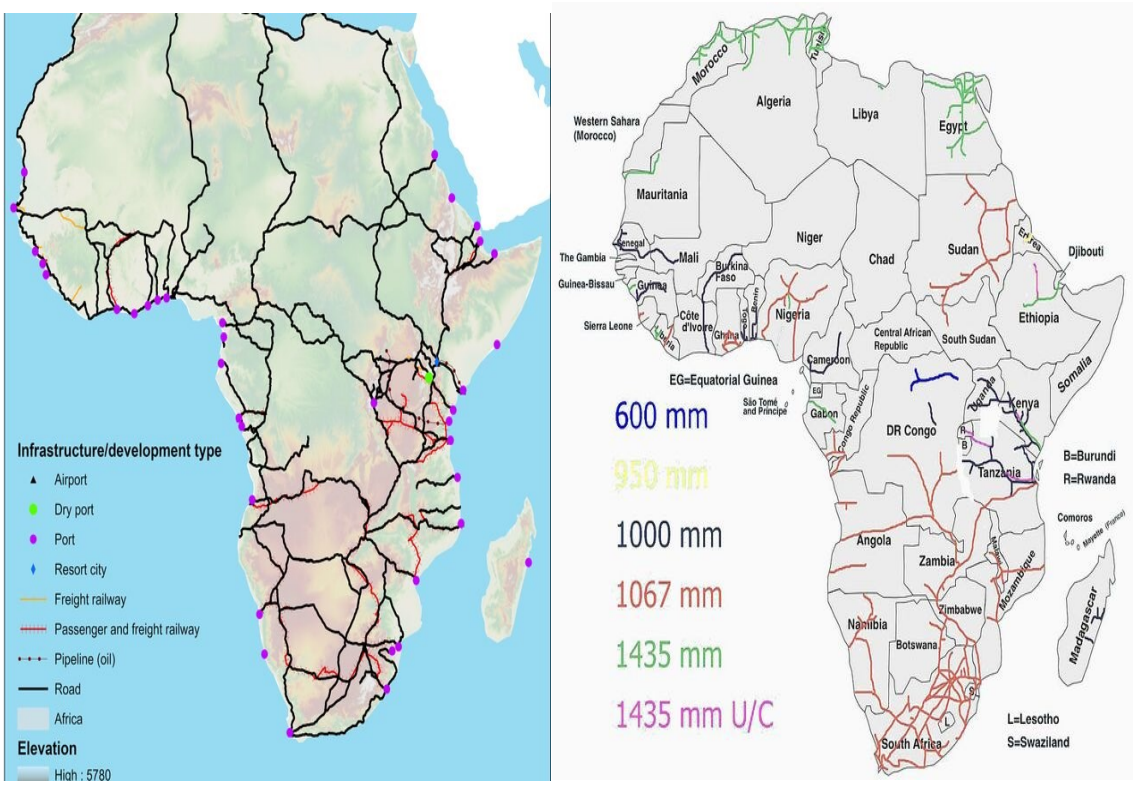

Fig.2.16.Distribution map of railway lines and track width differences in Africa

Source: [48]

The Mombasa-Nairobi Railway in Kenya is one of the main demonstration projects of “BRI” program in Africa sponsored and built by China, which started

construction in December 2014 and put into operation in May 2017. It runs between Kenya largest port and the capital, greatly increases the transportation efficiency of freight transport and paves the way for economic cooperation in East Africa.In the construction process, more than 90% of the workforce were locals, and many skilled workers enhanced professional skills by participating in the project. Besides, the Addis Ababa-Djibouti Railway project in Ethiopia which started construction in 2012 and opened to traffic in October 2016 is the first electrified railway on Africa continent, offering Ethiopia, an inland country, an easy access route to international markets.Second, BRI infrastructure development increases the efficiency in cargo flow while facilitates regional trade integration. Constructing railway, highways and port, “BRI” links the African countries with the international market.

By constructing railway, highway, ports and so on, “BRI” joins African countries with international market. By improving cross-border infrastructure, in addition to increasing goods flow efficiency, “BRI” also realizes trade between intra-regional countries. Chinese enterprises focus on technical training when building railway in Africa for promoting the cultivation of local engineering and technical talents.During the BRI, African countries have vigorously carried out green energy and infrastructure construction, such as wind power and geothermal power generation construction projects in Kenya. Technical assistance of China to African countries is not just infrastructure construction, but also agglomeration industries, manufacturing industries and other sectors, enabling African countries industrial diversification. The construction of Chinese enterprises’ industrial park in Ethiopia has enhanced local development of light industry and export-oriented manufacturing, and they have also received supporting from “BRI” in communication technology like mobile communications network and internet infrastructure constructed by the Chinese enterprises.These technical cooperation greatly enhanced the informatization levels of African countries and facilitated development of digital economy.

Optimizing transport infrastructures like railways and highway infrastructure have lowered logistics costs and strengthened regions’ competitiveness. Updating energy infrastructures meet the power requirements of industrialization and

urbanization, stimulating the internal economic driving force. High-quality infrastructure construction can optimize the living life for people, such as the railway and highway promoting people travel time between urban and rural areas.The growth of technical training and job opportunities has increased the living standards and skill level of the local residents. “BRI” doesn’t just offer financial and technical assistance to African nations but also enhance the mutual trust between China and African nations in the cultural exchanges and multilateral cooperation [36]. This win-win mode lays out the basic premise for mutual cooperation in the future.The African countries made great contributions and development in infrastructure and technology in the “BRI”initiative, and the African countries will be the new driving force of the world economic growth in the future.

Prudent Engagement of European Countries in the BRI Initiative under Globalization. As one of the most mature economies in the world and the world economy, it has huge and high-consumption markets, and ports and logistics systems are key nodes of world trade, connecting “BRI” and Europe to enter the mainstream of the world trade network.The Silk Road has tied China and Europe in the past, and the “Bel t and Road” today reprecated this big idea of East-West connectivity via two primary routes: land and sea. Europe i s one of the most developed economies i the world, an d China i wants to increase its economic and trade ties with Europe through “Belt a n d Road”, and increase its market share.Also, the EU holds major comparative benefits in high-end manufacturing and green economy, and China aims to build its self-developing ability by cooperation. Whereas the EU values sustainable development and expects to get greentech and funding support via cooperating with BRI.

Nevertheless, numerous European states, especially in Southern and Central and Eastern Europe, had weaker economic recovery after the global financial shock, while require foreign capital infusion to spur their economic growth, particularly the outdated infrastructures in Central and Eastern European countries await modernization in urgent needs.The coastal Mediterranean countries are expected to improve the efficiency of the port system and logics system of their countries in order to obtain the

status of the hub between the Asian market and European market through “BRI” project.

Connecting railway networks between China and Europe in China-Europe Railway Express (CERE) project, the railway of such project provides logistics convenience service in between China and Europe, including Germany, Poland, Spain, etc..China-invested Hungary to Serbia Railway is a typical infrastructure project under BRI Initiative in Europe, a railway intended to improve transportation capacity of South East Europe [49]. Eastern European countries have demonstrated diversity in cooperation on the Belt and Road Initiative.

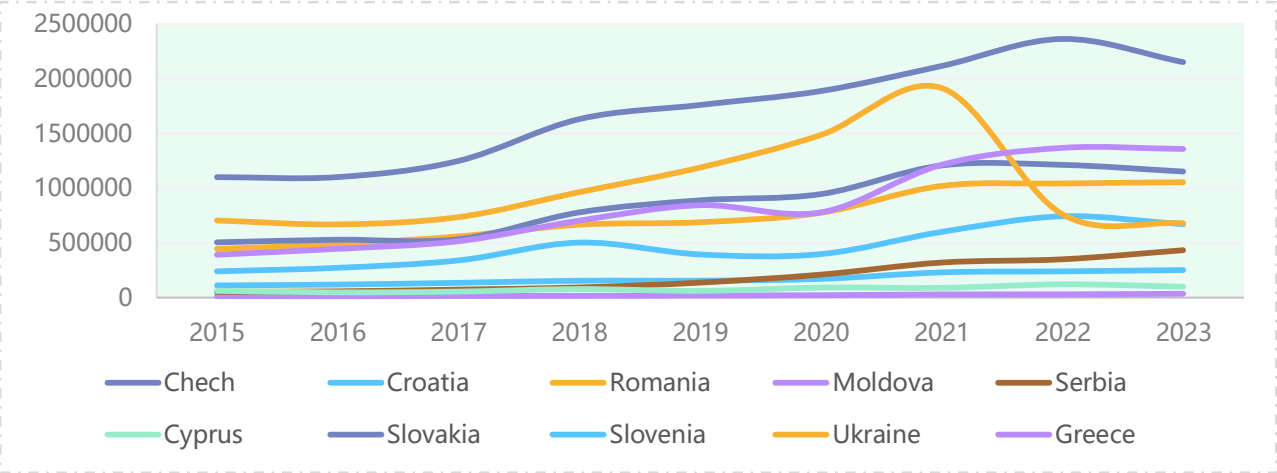

Figure.2. 17.Comparison of total import and export volume between Eastern European countries and China over the years (US dollars)

Source: [30]

The annual trade volume between China and selected Eastern European countries from 2015 to 2023， significant disparities, with the Czech Republic and Romania exhibiting the highest levels of trade. Notably, Romania's trade surged sharply until 2021, followed by a marked decline. Moldova, Slovakia, and Greece experienced steady growth, while Ukraine's figures fluctuated. This trend reflects evolving bilateral economic dynamics and the impact of regional geopolitical events（see fig.2.17）.

The longitudinal evolution of total bilateral trade volume—comprising both imports and exports—between China and Eastern European countries, measured in US dollars over an extended temporal frame, reflects a generally sustained upward trajectory. Furthermore, the relative stability in China’s export-import ratio vis-à-vis

these countries suggests a degree of mutual interdependence, particularly in sectors characterized by technological complementarity and commodity specialization.

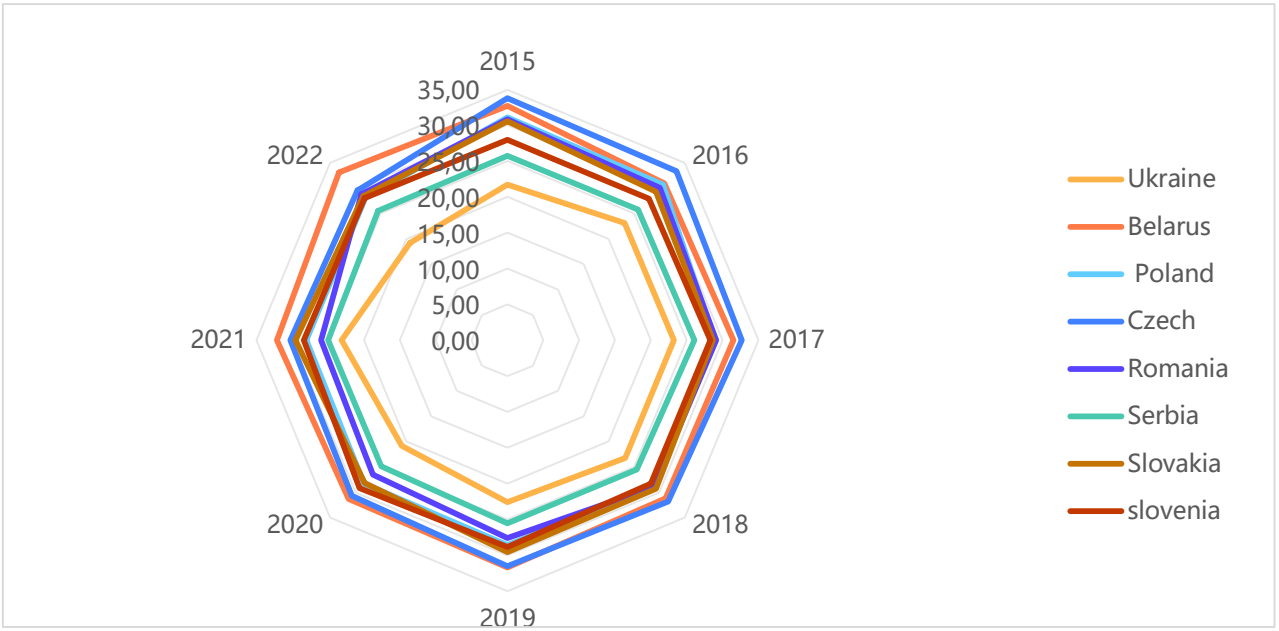

Fig. 2.18. Industrial value added as a percentage of GDP in Eastern European countries participating in the Belt and Road Initiative (%)

Source: [7]

Data suggest that industrial structures across Eastern European countries exhibit notable divergence (see fig.2.18). In Central European states such as Poland and the Czech Republic, the industrial sector accounts for over a quarter of GDP, underpinned by a robust manufacturing tradition in sectors like automotive and machinery. In contrast, countries like Ukraine and Romania generally register lower industrial shares, often below 20%, reflecting delayed economic restructuring and slower progress in industrial modernization. Interestingly, economies such as Slovenia, despite a smaller industrial proportion, rely on high-tech and value-added manufacturing, indicating a transition toward knowledge-based and service-driven models. Within the Belt and Road framework, cooperation in industrial capacity and infrastructure development has created momentum for industrial expansion in countries like Belarus and Serbia. Projects such as the China-Belarus Industrial Park have contributed to strengthening local production ecosystems. Overall, these variations highlight not only the developmental disparities and resource conditions among countries, but also the enabling role of the BRI in advancing regional industrial chain integration and

facilitating cross-border technology diffusion, offering multiple pathways for sustainable industrial upgrading.

Because of the Belt and Road initiative, China-Ukraine external trade cooperation has been increasingly improving, which is concretely manifested in a constant increase in trade volume and an increase of trade structure. The whole import and export trade volume between China and Ukraine ranged from 7.07 billion US dollars to 19.17 billion US dollars since 2015.At the same time, China's exports to Ukraine and imports from Ukraine have all increased by about three times, with Ukraine having surpluses in trade with China from 2015,2020,2021 and 2022 and having a high surpluses from China from 2016 to 2019. The China-Ukrainian trade surplus rose and fell but kept an upward trend, suggesting that the strength of Ukraine's export capacity to the Chinese market is continually increasing.Despite the rising trend of the China-Ukrainian trade surplus, the annual ups and downs may indicate some uncertainties in the two countries bilateral trade relationship, including, for example, the global economy and regional political risks.

In order to analyze more clearly the composition and changing trends of China-Ukrainian trade, we divide the data into two periods and compare them respectively, that is, 2015- 2019 and 2020-2022.Between 2015 and 2019, the total amount of China-Ukrainian import and export trade increased from $7.07 billion to $9.69 billion, the annual average growth rate was about 7%, and during this period, China's exports to Ukraine increased from $3.51billion to $7.39 billion, the annual average growth rate was close to 8%. China-Ukrainian trade continued to expand relatively steadily after entering 2020, the total value of import and export trade continued to increase from $14.87 to $19.17 billion in 2021. Import volumes were reduced in 2022 , but the growth rate was still quite considerable. At the same time, during this phase, while machinery and electrical equipment are still the leading products that are exported from China to Ukraine, export volumes of textiles also risen (see table 2.4). In the imports, the import volumes of chemical products significantly rise, reflecting an increasing year-by-year demand of Ukraine for high-quality chemical products [32].Further, based on the

relative export and import of China and Ukraine, it can be obtained that Ukraine's export rate to China in recent years has always been maintained at about 50% .

Table. 2.4

Trade volume between China and Ukraine over the years (US $10,000)

Year	Total export-import volume	Exports to China	Imports from China	Trade surplus	Exports	Ukraine mainly exports Chinese goods	Ukraine mainly imports Chinese goods
2015	707151.1	355579.8	351571.3	4008.5	50.2%	Mechanical equipment and electrical appliances Mechanical equipment, textiles	Agricultural products, metal ore, chemical products
2016	671102.4	249079.5	422022.9	-172943.4	37.1%		
2017	738028.7	233964.2	504064.5	-270100.3	31.7%		
2018	966353.2	264503	701850.2	-437347.2	37.7%		
2019	1190858.4	450900.9	739957.4	-289056.5	37.8%		
2020	1487976.2	800175.2	687801	112374.2	53.7%		
2021	1917889	977446	940443	37003	50.9%		
2022	764391	434923	329468	105455	56.9%		

Source: [30]

In summary, with the driving effect of the "One Belt and One Road" construction, the China-Ukraine foreign trade cooperation not only has a considerable development in the level of trade scale,but also has complementary and diversified nature in the structure of trade.In this way, it has provided a good basis for further deepen the China-Ukraine economic and trade cooperation and push the common development of the two countries.

Russia has convergence with the BRI Initiative in the sectors of energy exports, infrastructure construction, transportation and logistics, etc. For instance, China-Russia crude oil pipeline, China-Russia natural gas pipeline energy cooperation projects are key links of the BRI Initiative energy corridor construction.Furthermore, China-Europe Express passes by Russia which has promoted the China-Russia-Europe trade as well as deepens the connection of Eurasian Continental Bridge. Chinese enterprises have participated extensively in the fields of agriculture, mining resources and transport

infrastructure building of Russian Far East which is the prototype for Belt & Road Initiative in Russia.

Nevertheless, cooperation also carries some structural risk. Russia, still uneasy about the swiftness of BRI Initiative realization in CAS, is scared by the extending China's influence into its near abroad and geo political sway.Meanwhile, hit by long-term Western embargo, its external source of finances is cramped and it does need to enhance economic cooperation with China urgently, yet this itself has also enhanced its concerns over economic dependence.

Diverse Challenges, Strategies, and Cooperation Modes among BRI Countries. The countries participating in the Belt and Road Initiative (BRI) exhibit significant diversity in terms of economic development levels, institutional capacity, geopolitical environments, and cultural contexts. This heterogeneity gives rise to varied challenges in implementing connectivity projects, such as infrastructure financing gaps, governance inconsistencies, and socio-political risks. In response, BRI cooperation has evolved to embrace differentiated strategies tailored to local conditions—ranging from state-led investment models to public-private partnerships and multilateral frameworks. Moreover, pragmatic cooperation modes have emerged, including bilateral agreements, subregional platforms, and policy coordination through multilateral institutions such as the AIIB and SCO.

These adaptive mechanisms aim to enhance project viability, promote mutual trust, and balance national interests with shared development goals. Specifically, the challenges faced by various countries and regions mainly include government risks, economic constraints, security threats, cultural differences, imperfect legal systems, backward infrastructure, resource dependence, institutional conflicts, geopolitical complexity and trade barriers. For example, Kazakhstan faces geopolitical tensions and recommends strengthening multilateral diplomatic cooperation to stabilize the situation; the Philippine economy is constrained by fiscal deficits and foreign debts and needs to improve investment risk management.

From the perspective of inspiration, the key to cooperation lies in adopting targeted strategies for the specific needs of different countries and regions.This

cooperation method adapted to local conditions reflects the flexibility and diversity of the BRI Initiative and provides effective experience and paths for promoting globalization.More importantly, such differentiated cooperation strategies demonstrate the Initiative's deep understanding of the heterogeneity of national development stages, institutional arrangements, and societal values.

In countries that are constrained by significant development bottlenecks, particularly due to weak or underdeveloped infrastructure systems, China has strategically focused its engagement on addressing these foundational gaps. Priority has been given to the construction and enhancement of key physical infrastructure, such as roads, railways, ports, and national power grids. These initiatives are designed to lay the groundwork necessary for unleashing the potential of economic growth, enabling greater mobility, trade, and industrial activity. In parallel, attention has also been extended to the development of supporting soft infrastructure, including telecommunications networks, customs modernization, and technical training programs. These complementary efforts are essential for ensuring that physical connectivity translates into actual economic dividends. Moreover, by fostering local participation and encouraging joint ventures, such projects contribute to capacity-building and institutional learning, which are critical for long-term self-reliance and sustainable development in partner countries.

In contrast, for countries that already possess relatively well-established economic systems but face challenges such as social fragmentation, institutional fragility, or uncertainties in legal and regulatory frameworks, China's approach has been notably different. In these contexts, the focus of cooperation shifts toward fostering greater mutual understanding through legal and governance exchanges, enhancing rule-of-law capacity, and promoting cultural and people-to-people dialogue. Institutional coordination and policy alignment in areas such as administrative standards, dispute resolution mechanisms, and transparency norms become central to China's engagement strategy (see table 2.5).

Table. 2.5

Comparison and suggestions on differences regions of BRI

Country / region	Challenge category	Specific challenges	Coping strategy	Inspiration
South Asia	Security threat	Terrorism, terrorism and extremism	Establish information sharing mechanism and strengthen international cooperation	Maintain a good safety environment
Central and Eastern European countries	cultural difference	Lack of cultural identity and the lack of public support for cooperation	Promote people-to-people exchanges and enhance mutual understanding and identity	People-to-people and cultural exchanges are a bridge for deepening cooperation
ASEAN	The legal system is not sound	Law and regulations are backward, and the judiciary is not independent	Promote legal cooperation and promote coordination in regional legal systems	Legal cooperation is the cornerstone of ensuring the smooth progress of investment and cooperation
African country	The infrastructure is backward	Infrastructure lags behind affects economic development	Implementation of infrastructure connectivity projects、providing technical financial support	Infrastructure is the stage for economic activities and needs strong support for construction
Central Asia	resource dependence	Excessive reliance on a single resource export, a single economic structure	Promote diversified resource development and promote balanced development of local economies	Resource cooperation should cooperate with economic restructuring and industrial upgrading
EU countries	System collision	The EU' s unified policy conflicts with BRI cooperation mechanism	Strengthen policy dialogue and seek the connectivity of policies and institutions	Institutional compatibility and policy coordination are the key to achieve mutual benefit and win-win results
Middle East	Geopolitical complexity	Political unrest, religious conflict	Give full play to China's constructive role in international affairs and promote regional stability	Stability in the Middle East is of great significance and requires greater efforts to build peace
Latin America	trade barrier	The Trans-Pacific Partnership and other agreements could create trade barriers to Chinese companies	Promote free trade agreements and regional economic integration, and reduce trade restrictions	Trade liberalization is the key to deepening economic cooperation

Source: [Author]

These efforts are often supported by bilateral or multilateral forums, training programs for civil servants, and cooperative research on governance innovations. In addition, initiatives such as judicial exchanges and policy dialogues on regulatory

reform help build mutual trust and reduce institutional uncertainty for future investment and collaboration. By emphasizing knowledge transfer and institutional compatibility, such engagement contributes not only to smoother project implementation but also to broader systemic resilience and policy coherence in host countries. This soft-power-oriented approach complements China's material investments and deepens the sustainability of its international partnerships.

Differences in political systems, development levels, regulatory environments, and cultural contexts among participating countries inevitably pose substantial challenges to international cooperation under the Belt and Road Initiative (BRI). These disparities often lead to difficulties in aligning policies, standards, and expectations, making effective coordination a complex task. Nevertheless, the BRI distinguishes itself through its flexible, context-sensitive cooperation framework, which allows it to adapt to local conditions and national priorities. This high degree of adaptability has played a crucial role in fostering a more inclusive, stable, and resilient international cooperation environment. This strategic differentiation not only ensures that short-term infrastructure and economic development objectives are met but also lays the groundwork for deeper institutional cooperation. Over time, this approach contributes to building mutual trust, promoting transparency, and establishing shared norms of conduct, thereby fostering long-term cooperation mechanisms that are both durable and mutually beneficial.

2.3 Estimations of Challenges and Risks for BRI Implementation

Significant Global Resource Imbalances. The imbalance of global resource allocation is significant.The unbalanced distribution of global resources has become increasingly prominent, posing a series of challenges and difficulties to the economic development and social progress of all countries. This imbalance includes production capacity, oil, coal, quality and quantity of labor force, level of science and technology, fresh water resources, sustainable development level, stable social environment, infrastructure, education degree of popularization, wage income and social welfare and so on.

This imbalance is increasingly obvious, the developed countries occupy the vast majority of the resources, often have more natural resources, human resources, financial assets and high-tech products, or development and near the ability of the resources is significantly stronger than that of developing countries, in stark contrast, developing countries face significant challenges that hinder their ability to fully leverage their potential. They are frequently confronted with a severe shortage of critical resources, such as energy, raw materials, and skilled labor. Limited financial capital further exacerbates these issues, as these countries often struggle to secure the investment needed for large-scale development projects and economic growth.[32].

According to UN trade and development data in 2022, the distribution of resources, including All food items, Agricultural raw materials, Fuel, Manufacturing goods, Ores, metals, precise stones, and non monetary gold, is extremely uneven, economies in Northern and Central America, Europe and Southern, Eastern and South-Eastern Asia exported mainly manufactured goods. Economies primarily exporting fuels were located along the northern coast of South America, in Middle and Northern Africa and Western and Central Asia.In Africa, primary goods accounted for 79 per cent of merchandise exports in 2022. Fuels made up 42 per cent. Developing Asia and Oceania relied much less on primary goods exports (28 per cent) than developing economies in Africa and the Americas (54 per cent). Developing Asia and Oceania recorded the lowest proportion of food exports (5 per cent), far behind developing America (25 per cent) and developing Africa (11 per cent) (see fig.2.19).

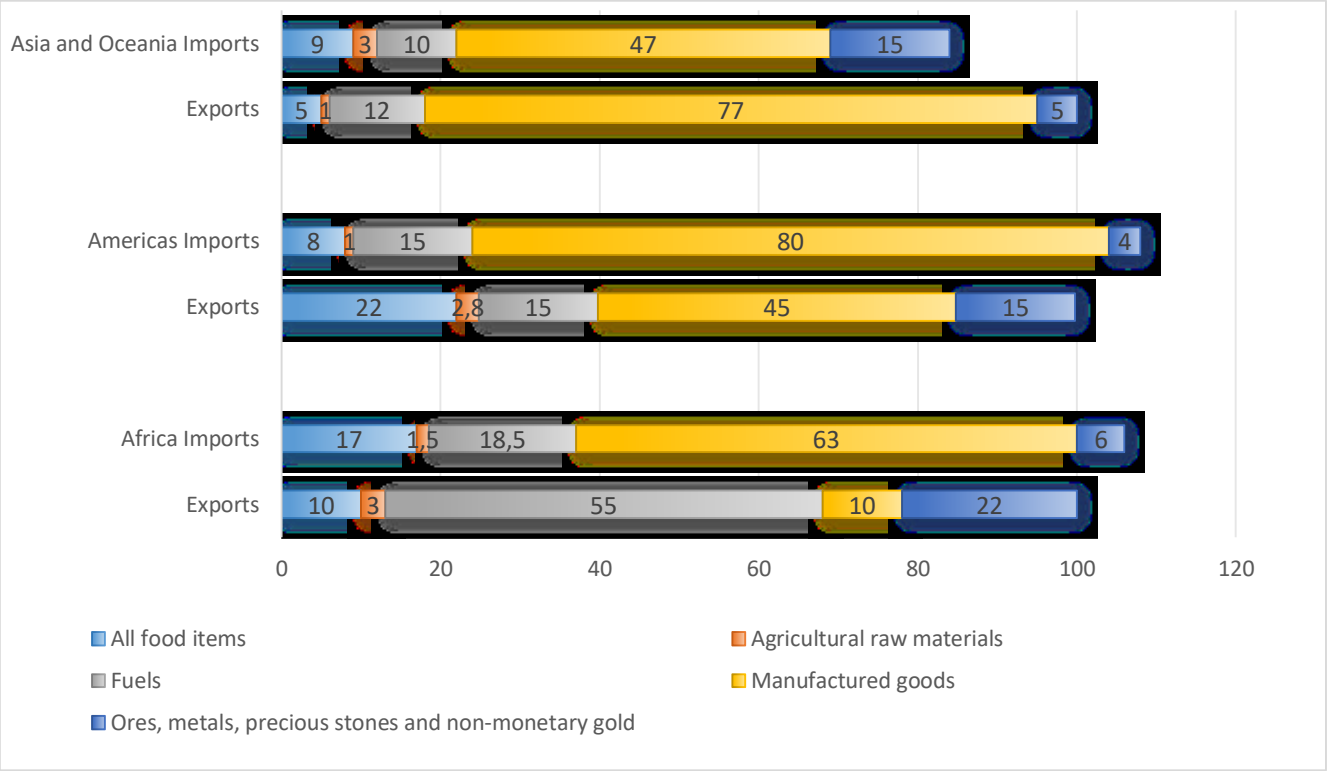

Fig.2.19.External trade structure of developing economies in 2022 (percentage of exports)

Source: [52]

Globalization allows resources to flow around the world, but that flow is not always fair. Developed countries tend to be more dominant in trade negotiations and are able to favorable trade rules. The unbalanced distribution of resources has led to global economic and social instability, further exacerbating the gap between the rich and the poor, and also bringing about a series of social problems. Due to the uneven distribution of resources, some countries even fell into the competition for resources, further aggravating the possibility of global war and conflict. Therefore, the problem of unbalanced global allocation of resources needs to be solved urgently[40].

The imbalanced global resource allocation is the serious problem around the world. Under the background of intensified international cooperation and the proposed implementation of corresponding policies, the Belt and Road strategy has played a positive role in promoting and supporting balanced allocation and rational use of global resources and global economic and social development(see fig.2.20).

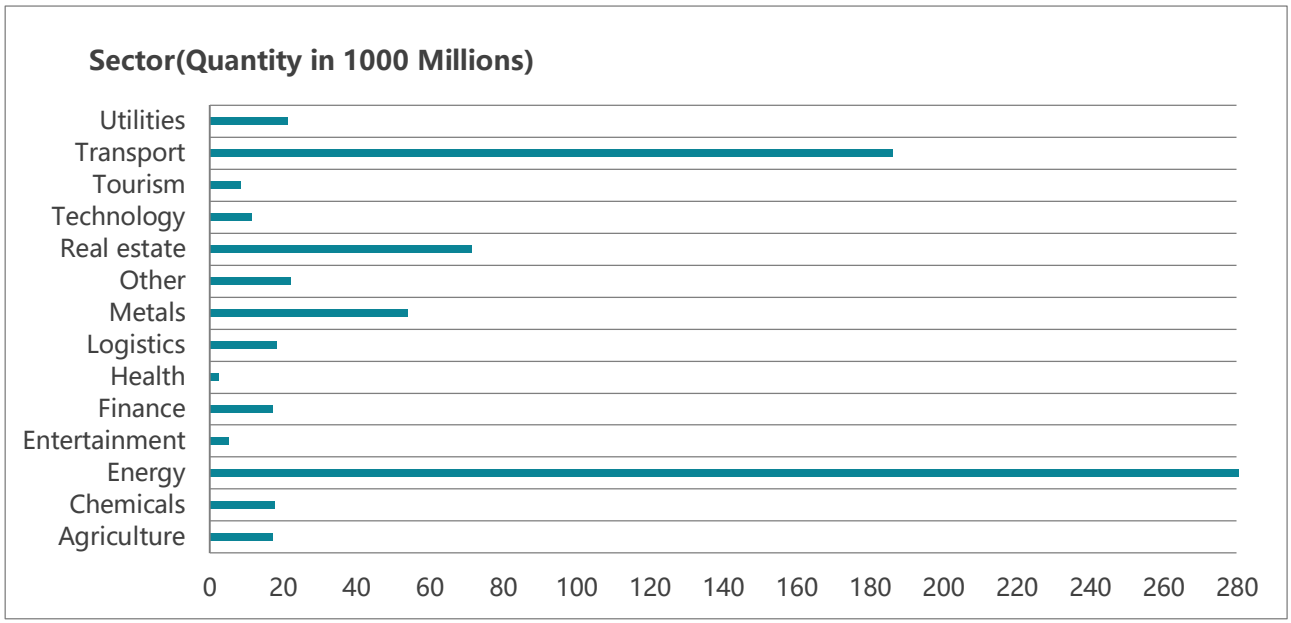

Fig.2.20.China's investment categories and statistics in BRI,2023

Source: [52]

Hedging Strategies Adopted by Different Economies. As the influence of the Belt and Road Initiative continues to expand, more and more countries and economies have begun to adopt hedging strategies, trying to weaken the dominant position of the Belt and Road Initiative, and even forming a situation of direct competition and containment in some regions,These concerns come from the huge influence of the Belt and Road Initiative advocated by China. In recent years, prominent global powers—including the European Union, Japan, the United States, Germany, as well as countries like India, Russia, Australia, and South Korea—have successively introduced strategic responses intended to offset the expanding geopolitical and economic reach of the Belt and Road Initiative. In some cases, this has led to the emergence of a competitive and even adversarial dynamic in certain regions, where countries are striving to counterbalance the growing influence of China's BRI through their own strategic initiatives.For instance, the United States has sought to promote the "Build Back Better World" (B3W) initiative, which aims to provide an alternative to China's infrastructure projects in developing countries. Similarly, Japan and India have explored regional partnerships to enhance infrastructure development in Asia while ensuring that the projects do not become excessively dependent on China.(see fig.2.21).

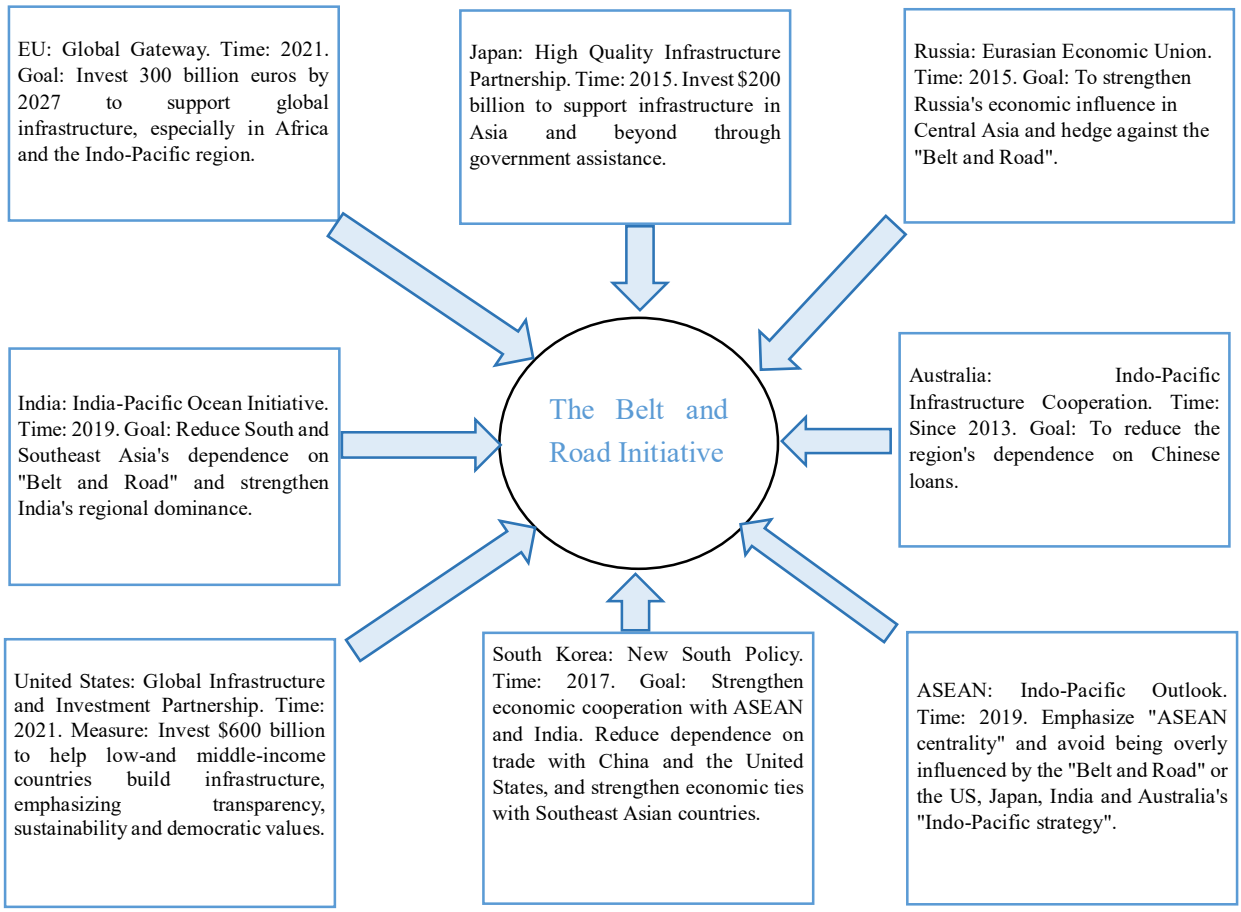

Fig: 2.21. Hedging strategies of major economies against the Belt and Road initiative.

Source: [Author]

The United States-led Partnership for Global Infrastructure and Investment (PGII) aims to channel approximately $600 billion over the coming years into infrastructure development across emerging economies, with a focus on promoting high-quality, transparent, and environmentally sustainable projects—framed as an alternative to concerns over what some label as a “debt burden.” At the same time, the European Union has launched its “Global Gateway” initiative, which plans to allocate €300 billion toward key areas such as digital connectivity, energy networks, transportation, and related sectors. These initiatives have effectively introduced strategic competition to the Belt and Road Initiative, especially in terms of investment scale and global outreach (see fig. 2.22) . Ultimately, these hedging strategies reflect the broader concern that the Belt and Road Initiative, through its large-scale investments and

comprehensive approach to infrastructure development, could alter the global balance of power,

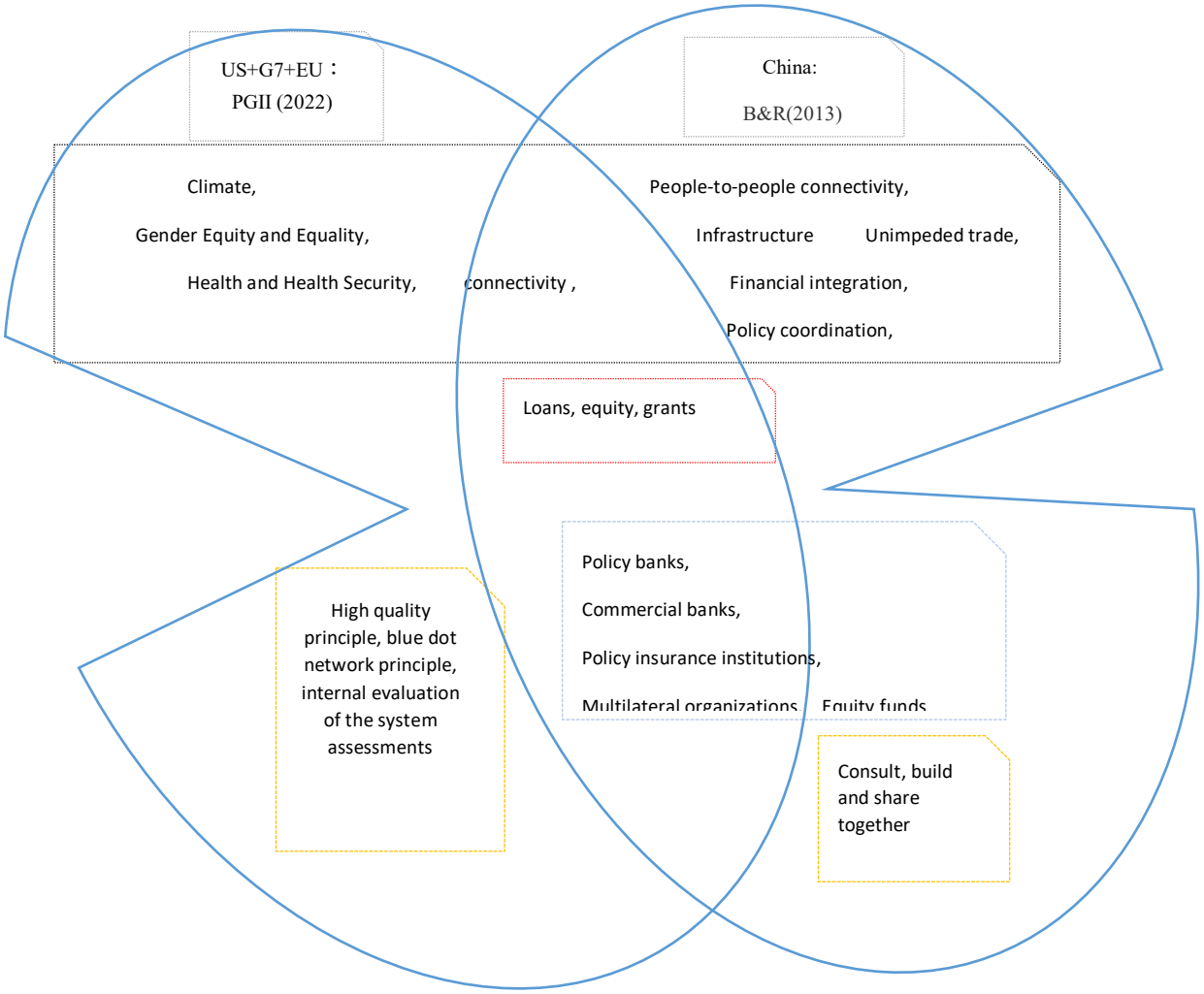

Fig.2.22. Comparison of the similarities and differences between BRI and PGII.

Source: [Author]

In the realm of infrastructure development, countries such as the United States, the European Union, Japan, and India have actively pursued parallel investments to counterbalance the growing footprint of the Belt and Road Initiative. For instance, India has supported the construction of Iran′s Chabahar Port, envisioning it as a pivotal trade route connecting Central and South Asia while intentionally circumventing the Gwadar Port, a key node of the China-Pakistan Economic Corridor (CPEC). Additionally, the submarine fiber optic cable project in the Solomon Islands, jointly undertaken by the United States, Japan, and Australia. Meanwhile, the EU′s

investments in railway and highway systems across the Balkans have acted as a counterforce, hindering the region′s deeper engagement with China. These competing initiatives have posed tangible challenges to certain Belt and Road infrastructure partnerships, with some projects being delayed, modified, or even cancelled due to shifting political landscapes and financial realignments.

The Global Gateway initiative also actively seeks to integrate nations into its supply chain framework, aiming to develop alternative manufacturing bases and logistical hubs across these regions (see table 2.6). This ambitious initiative is focused on establishing alternative manufacturing bases and logistical hubs in key regions, with the objective of diversifying and strengthening global supply chains. By investing in infrastructure projects across different continents, the Global Gateway is designed to create a more resilient and interconnected global economic system, where regions can enhance their capacity for production, trade, and technological innovation.The European Union, which is the driving force behind Global Gateway, aims to foster sustainable and inclusive growth by facilitating the flow of goods, services, and investments between developing countries and the more developed economies of Europe,the Global Gateway also aims to improve regional connectivity, bolster technological infrastructure, and foster closer economic partnerships.

Table. 2.6

Global projects of the EU's "Global Gateway" strategy

Category Region	Indo-Pacific	Africa	Latin America	Balkans	Total
Climate & Energy Projects	13	19	20	7	59
Digital projects	1	4	2	1	8
Transportation projects	1	15	0	3	19
Educational research	0	2	0	0	2
Health projects	0	0	6	0	6
Total	15	40	28	11	94

Source: [7]

Backlash Against Globalization. In recent years, the global trend toward integration has encountered increasing resistance, resulting in significant disruptions to the traditional model of international resource allocation. This reversal is influenced by a combination of economic stagnation and shifting geopolitical dynamics. On the economic front, the deceleration of global growth has suppressed demand for key resources, thereby altering the scale and direction of global flows. Politically, rising instability and the resurgence of protectionist policies have restricted market openness, particularly in the strategic sectors related to energy and raw materials. At the same time, advances in technology—such as digital platforms, automation, and AI-driven logistics—have introduced alternative mechanisms for distributing resources, challenging the relevance of older allocation systems. Taken together, these factors have complicated the functioning of international markets and posed fundamental challenges to the efficiency and fairness of cross-border resource distribution.

The global economic shock triggered by COVID-19 stemmed primarily from the extraordinary public health interventions imposed by national governments, including large-scale travel restrictions and transportation shutdowns aimed at containing the virus's spread (see fig. 2.19). These containment strategies severely disrupted both the supply and demand sides of the economy. On the supply side, production capacity was significantly constrained due to factory closures and logistic bottlenecks, while on the demand side, consumption weakened and service industries contracted due to mobility restrictions and uncertainty.

Simultaneously, financial market volatility, widespread pessimism about economic prospects, and rising investor anxiety undermined investment confidence, further curbing capital flows and business expansion. The combined effect of these factors—namely the simultaneous suppression of supply chains and consumer markets—resulted in a global GDP contraction of 3.1% in 2020 compared to the previous year, marking the most serious economic downturn since the Great Depression of 1929. As reflected in the quarterly GDP growth rates of major economies during this period [28], China, despite rapid containment efforts, experienced a 6.8%

year-on-year GDP decline in the first quarter, its first recorded quarterly contraction since official data publication began in 1992.

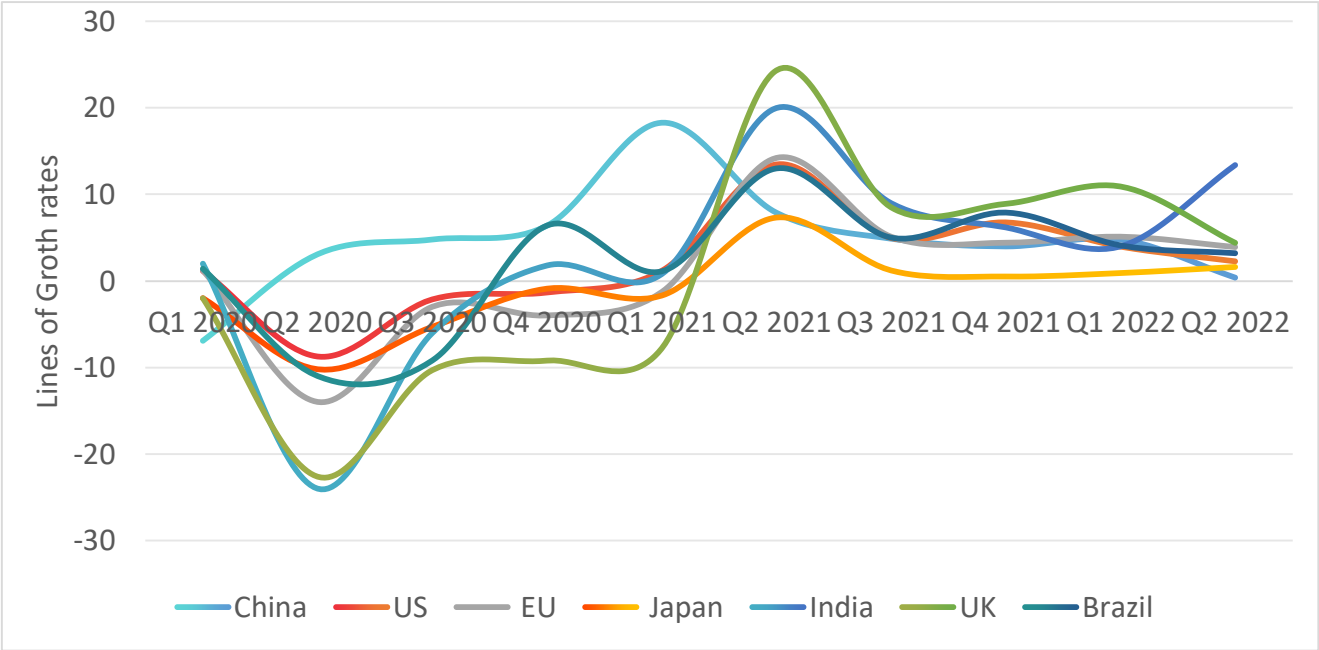

Fig. 2.23. Comparative Analysis of GDP Fluctuations in Leading Economies During the COVID-19 Outbreak

Source:[52]

The recent reversal in globalization trends has introduced significant complexities to the configuration of international resources. Influenced by sluggish global economic performance, heightened geopolitical frictions, and rapid advancements in science and technology, the established patterns of cross-border resource distribution are undergoing profound structural shifts and reorganization. These changes suggest an emerging paradigm in global resource governance marked by increased fragmentation and evolving modes of cooperation.

Comprehensive Geopolitical and Sociocultural Risks. Ongoing global geopolitical instability has emerged as a critical factor undermining the efficiency of international resource distribution. Numerous states are grappling with internal political volatility, which is frequently compounded by armed conflict, acts of terrorism, and other forms of unrest. These circumstances not only disrupt economic activities but also result in significant resource misallocation and depletion, thereby constraining sustainable development prospects in affected regions.

The Black Sea plays a pivotal role as a logistical and trade nexus connecting Eastern Europe, Central Asia, and parts of Africa. Key coastal ports in Ukraine and Russia serve as major gateways for exporting essential commodities, including agricultural products such as grain and energy resources like coal. The onset of the Russia–Ukraine conflict has severely disrupted global trade routes, with particularly pronounced effects on the freight dynamics of small to medium-sized bulk vessels. In response to the heightened security risks following the outbreak of hostilities, maritime security firm Dryad Global issued advisories urging commercial entities to suspend navigation and port operations within the exclusive economic zones (EEZs) of Ukraine and Russia. In contrast, maritime activities in the EEZs of Turkey, Bulgaria, and Romania remained unaffected initially. However, the overall security environment in the region has significantly increased the unpredictability of maritime passage through the Black Sea [49].

At the same time, strategic rivalry among major global actors has led to inefficient use and excessive consumption of resources. A prominent example is the escalating trade and technology frictions between China and the United States, which have not only undermined mutual economic benefits but also resulted in considerable resource misallocation. Broadly speaking, geopolitical instability has emerged as a critical factor contributing to the decline in global resource allocation efficiency. Addressing this issue requires fostering stable international relations and minimizing geopolitical tensions. In this regard, the Belt and Road Initiative provides a constructive framework for promoting cooperation and enhancing resource coordination at the global level.

As the Belt and Road Initiative (BRI) extends across the vast expanse of the Eurasian continent, it inevitably intersects with intricate geopolitical dynamics and elicits cautious responses from various regional powers. Engaging with over 60 countries across Eurasia, the initiative has drawn skepticism and strategic concerns from both within and beyond the region [35]. Central Asia, for instance, holds a pivotal role in the BRI framework, yet it simultaneously lies within Russia’s traditional sphere of influence. Consequently, China’s expanding economic footprint in the area has triggered apprehensions in Moscow regarding potential shifts in regional balance.

Likewise, India, a major actor in South Asia, has expressed persistent reservations toward the BRI and, in some cases, openly resisted its implementation, viewing it through the lens of strategic competition and national sovereignty.

Moreover, the Belt and Road Initiative traverses regions marked by frequent geopolitical tensions and prolonged instability, many of which serve as arenas for major power rivalry and are prone to regime turnover and sociopolitical unrest. Based on partial data, nearly 60% of BRI-participating countries have undergone significant political transitions or experienced episodes of civil disturbance over the past decade, casting serious doubt on the long-term consistency and reliability of cooperation under the initiative [20]. In Central Asia, for instance, countries such as Kazakhstan and Kyrgyzstan have witnessed repeated changes in leadership. Simultaneously, enduring conflicts like those in Ukraine, Syria, and Yemen continue to undermine regional order and security. These circumstances imply that agreements reached with current administrations may be overturned or renegotiated under future governments, heightening investment risks. Additionally, the persistent threat of terrorism in several BRI regions, compounded by intensified strategic competition among global powers, further fuels instability and offers fertile ground for extremist movements, thereby posing substantial barriers to the steady execution of BRI projects.

The implementation of the Belt and Road Initiative is confronted with significant challenges arising from the pronounced diversity among participating countries in terms of political systems, economic development levels, social structures, and cultural traditions. These disparities have given rise to various barriers that hinder effective collaboration. In several instances, long-standing disputes over territory and natural resources continue to strain bilateral ties, while the limited effectiveness of regional governance frameworks further exacerbates coordination difficulties. A pertinent example lies in the ongoing tensions between China and certain Southeast Asian nations concerning sovereignty claims in the South China Sea. Although economic and trade exchanges have seen substantial progress, the unresolved maritime dispute continues to act as a destabilizing factor in bilateral relations—resembling a perpetual latent threat. Therefore, a central challenge for the BRI lies in how to diplomatically address these

deep-rooted conflicts, foster mutual trust among stakeholders, and create a more stable and cooperative regional environment conducive to long-term development.

The implementation of the Belt and Road Initiative is accompanied by multifaceted geopolitical and security concerns, including strategic rivalry, instability in regional security structures, and persistent inter-state conflicts. As the initiative intersects with numerous regions of strategic importance and traverses areas with historically entrenched political sensitivities, it inevitably becomes entangled in the geopolitical calculations of various powers. Navigating this landscape requires not only careful diplomatic engagement but also a robust framework for conflict prevention. A central task is to promote shared benefits while fully respecting the sovereignty and developmental priorities of all participating nations. Mitigating potential geopolitical frictions and establishing a cooperative security environment are essential for sustaining momentum in Belt and Road cooperation.

Economic Investment Risks and Financial Challenges. The Belt and Road Initiative is subject to a range of financial and economic challenges, including limited investment returns, elevated debt pressures, and exposure to global economic fluctuations. Stable access to foreign exchange is essential to support major financing mechanisms. While progress has been made in mobilizing financial resources for the initiative, ensuring long-term funding stability remains a complex task. Stable access to foreign exchange is a critical factor in supporting the core financing mechanisms of the Belt and Road Initiative (BRI). The availability of foreign exchange enables seamless international transactions, facilitating investments, trade, and debt servicing between participating countries. Although significant progress has been made in mobilizing financial resources for the BRI, securing long-term funding stability remains a challenging issue. This is especially true given the complexities of international financial markets, where fluctuations in exchange rates, political uncertainties, and varying economic conditions can impact the reliability and cost-effectiveness of funding. Moreover, many countries involved in the initiative face structural vulnerabilities such as limited access to global capital markets, high borrowing costs, or limited financial capacity. As a result, the BRI's financing mechanism often involves

a mix of loans, investments, and guarantees, which can create fiscal pressure on host countries, particularly in cases where the economic return on infrastructure projects does not meet expectations.

In particular, the elevated cost of capital in certain regions leads to relatively expensive international investments under the initiative, placing considerable strain on the fiscal capacity of host countries and increasing the financial risks associated with project implementation. Data on the current account balance of various countries to GDP in 2022 show that not only the United States and the United Kingdom, but also some developing countries in particular have large deficits, and the global current account imbalance is obvious (see fig.2.24).

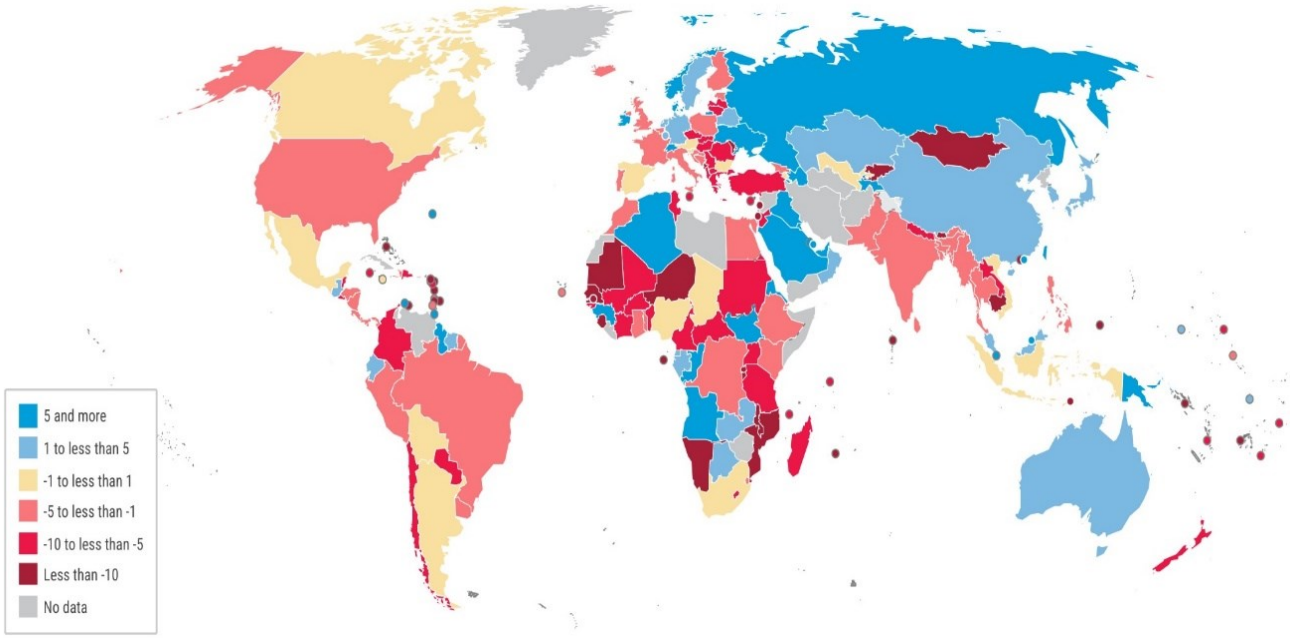

Fig.2.24.Current Account to GDP Proportion in 2022 (%)

Source: [52]

In 2022, numerous countries across the Americas, Africa, as well as South and Southeast Asia experienced current account deficits, with their outward payments surpassing the income generated from international transactions. In contrast, the majority of nations situated in Western, Central, and Eastern Asia posted current account surpluses. This disparity has intensified the investment risk perception and contributed to diminishing investor confidence, particularly in infrastructure development projects within less economically advanced regions.

Chinese investments along certain segments of the Belt and Road Initiative in Central Asia have encountered setbacks. In several politically unstable countries of South and Southeast Asia, reported losses have been particularly severe, with regional turbulence and security challenges often cited as contributing factors. Moreover, because a large share of China's overseas investments is channeled through government-led entities and state-owned enterprises, these projects often involve less flexible, market-driven risk management and less thorough cost–benefit analysis.[36]. BRI faces the challenges of complex and volatile economic cycles and market fluctuations. In China, RMB depreciation and capital outflow pressures are forcing China to tighten capital controls, making it more difficult for financial institutions and companies to obtain funds from China. Financial regulation and risk prevention are relatively difficult.

Pressure for sustainable growth. The Belt and Road Initiative (BRI), while promoting regional connectivity and economic growth, inevitably encounters significant environmental and sustainable development challenges. As industrialization and urbanization processes accelerate in many participating countries, a series of environmental problems have emerged, posing complex risks to local ecosystems and public health. Among the most critical issues are environmental pollution, freshwater scarcity, biodiversity loss, soil degradation, and rising greenhouse gas emissions. Industrial expansion and infrastructure development, although contributing to economic modernization, often exert considerable pressure on natural resources and ecological systems [32].In particular, large-scale construction activities such as highways, railways, ports, and energy facilities tend to disrupt land use patterns, cause deforestation, and lead to the fragmentation of natural habitats, thereby threatening the survival of local species and undermining ecological balance.

Moreover, a considerable number of countries along the Belt and Road corridor lack adequate environmental infrastructure and modernized systems for environmental monitoring and governance. Many face limitations in terms of environmental management capacity, regulatory frameworks, and enforcement mechanisms. Environmental risk prevention and control mechanisms in some of these countries

remain rudimentary, making it difficult to effectively address environmental emergencies or to implement sustainable development measures alongside economic projects. In situations where environmental impact assessment systems are either underdeveloped or poorly enforced, large-scale projects may proceed without thorough evaluation of their long-term ecological consequences, increasing the likelihood of irreversible environmental damage.

The development of energy resources, particularly in the form of coal, oil, and natural gas projects, constitutes another major source of ecological strain within the BRI framework. While these energy projects are crucial for meeting the growing energy demands of participating countries, they often come with substantial environmental costs. Coal, in particular, is one of the most carbon-intensive energy sources, contributing to greenhouse gas emissions and exacerbating climate change. Oil and natural gas projects also lead to environmental degradation through habitat destruction, water contamination, and air pollution. Furthermore, the large-scale extraction and transportation of these energy resources can lead to the depletion of local ecosystems and biodiversity. The environmental impact is further compounded by insufficient regulations and monitoring in some BRI partner countries, where enforcement of environmental standards may be weak. This raises concerns about the long-term sustainability of the BRI, particularly in terms of its environmental footprint. To mitigate these ecological risks, there is an increasing push for more sustainable energy solutions, such as renewable energy projects, alongside stricter adherence to environmental standards and the adoption of cleaner technologies. Integrating these measures within the BRI would help align economic development with environmental preservation, fostering a more sustainable and responsible growth trajectory.While these projects can contribute to local energy security and economic activity, they often result in air and water pollution, excessive land use, and emissions that exacerbate climate change. Countries with fragile ecosystems, such as those in Central Asia and Southeast Asia, are especially vulnerable to the adverse effects of resource extraction and infrastructure construction. Additionally, transboundary environmental risks have emerged, particularly in areas where rivers, forests, and air basins span multiple

countries. The lack of a coordinated environmental governance mechanism across borders complicates efforts to mitigate these risks and maintain ecological integrity [41].

In addition, the Belt and Road Initiative relies on the cross-border supply chain system to promote regional economic integration and trade development, but the fragility of the supply chain has become an important risk to sustainable growth.

Transnational supply chains involve multiple countries and regions, with unstable political situations, uncertain policies, and significant differences in infrastructure, which makes the supply chain prone to interruptions at key links, affecting the overall project progress and trade flow, and increasing the risk of economic fluctuations. Global events such as trade protectionism, international conflicts, and epidemics have impacted the supply chain, leading to logistics disruptions and tight supply, further exacerbating the uncertainty and pressure of economic growth in countries along the route.

In the face of the above risks, the supply chain system needs to transform from a single reliance on low-cost, high-efficiency models to a more flexible and diversified structure, and adjust the supply chain design and management methods to improve the ability to hedge risks and ensure the sustainable development goals of the Belt and Road.

Conclusions to chapter 2

This chapter delves into the practical aspects of how the Belt and Road Initiative (BRI) is put into action and the mechanisms that drive its operations. The analysis begins with China's own inclusive development model, which underpins much of the Initiative's domestic foundation. Here, poverty reduction emerges as a cornerstone, reflecting a persistent national priority within China's broader growth agenda. Moreover, the integration of environmental sustainability into this growth framework illustrates an evolving awareness of balancing economic progress with ecological responsibility. The discussion also captures China's transition into what is often called the "new normal," a period marked by slower yet more sustainable and balanced economic expansion. This shift requires rethinking development strategies to ensure that economic gains do not come at the cost of social equity or environmental degradation.

Moving beyond China's borders, the chapter explores how different BRI participant countries engage with and adapt the initiative to their specific circumstances. In Central Asia, for instance, energy trade and the development of transport infrastructure form the backbone of regional cooperation, facilitating connections between resource-rich areas and international markets. Southeast Asia's experience centers on efforts to deepen regional economic integration and streamline trade processes, aiming to reduce logistical bottlenecks and promote smoother cross-border exchanges. Africa faces its own set of challenges, particularly regarding infrastructure shortages and financial constraints, but it also represents a region of great potential where BRI projects could help overcome long-standing developmental hurdles. The approach taken by European nations is notably cautious, reflecting the complexity of political and economic interests amid shifting global dynamics. To complement these qualitative insights, the chapter incorporates regression analysis of six representative countries—Kazakhstan, Ethiopia, Angola, Pakistan, Ukraine, and Hungary—examining the relationship between their trade volume with China and Human Development Index (HDI) performance from 2016 to 2023. The results suggest varying degrees of positive correlation, reinforcing the argument that economic engagement

under the BRI can have measurable developmental impacts, while also revealing country-specific structural limitations.

The final portion of the chapter provides a critical assessment of the risks and obstacles that the BRI encounters during implementation. One prominent issue is the uneven distribution of global resources, which complicates efforts to achieve inclusive outcomes. The chapter also discusses how some countries adopt hedging strategies to navigate competing global influences, balancing relationships with China and other major powers. The resurgence of geopolitical tensions and cultural frictions adds further layers of complexity to cooperation efforts. Additionally, economic risks, including potential investment instability and financial fragility, pose significant challenges to the sustainability of BRI projects. Environmental concerns are increasingly prominent, as large-scale infrastructure development often interacts with sensitive ecosystems, necessitating careful management to avoid adverse impacts. These intertwined challenges highlight the need for comprehensive, forward-looking strategies that prioritize transparency, inclusiveness, and sustainability.

By weaving together China's domestic policies, regional case studies, quantitative regression findings, and an analysis of risks, this chapter paints a detailed picture of the Belt and Road Initiative's operational realities. It emphasizes that while the BRI presents significant opportunities for promoting inclusive development and connectivity, realizing its full potential depends on navigating complex, context-specific conditions and managing a broad spectrum of challenges effectively.The main scientific results were published in the following scientific articles:29; 51;54;91;99;177;178;179;180;181.

CHAPTER 3
STRATEGIC IMPACT AND FUTURE DIRECTION OF THE BELT AND ROAD INITIATIVE

3.1 Strategic Implications of the BRI for Global Governance

Improve the institutional system for inclusive growth. The Belt and road Initiative (BRI), as a globally leading development framework led by China, has long transcended the levels of infrastructure construction an d trade cooperation. It not only involves large-scale capital flows and construction projects but also triggers institutional competition and discourse power struggles in global governance. Through the establishment of the Asian Infrastructure Investment Bank (AIIB) and the Silk Road Fund, China has promoted a relatively independent "Southern discourse" system aimed at improving global development concepts [35].

Since the BRI was proposed, its influence has rapidly expanded, particularly becoming a mainstream development discourse in the Global South.In contrast, BRI emphasizes "development first," "infrastructure first," and "connectivity," respecting sovereignty and stressing cooperative approaches tailored to local conditions.

The Belt and Road Initiative (BRI) champions the principles of enhancing national sovereignty, fostering regional cooperation, and prioritizing development. In contrast to the Washington Consensus, which emphasizes institutional reforms, the BRI, aligned with the Beijing Consensus, places a stronger focus on practical outcomes and tangible results. The Beijing Consensus advocates for a collaborative approach between states, recognizing the diverse development needs of countries and encouraging flexibility in policy implementation.

This model stresses the importance of rapid economic growth as a means to achieve broader development goals, allowing nations to prioritize their own development paths without being constrained by rigid institutional frameworks. By promoting infrastructure development, trade facilitation, and cultural exchange, the BRI aims to create a more inclusive global economy, empowering participating nations to advance on their own terms, with a focus on mutual benefits and sustainable progress.

This pragmatic approach provides developing countries with new development options .The Washington Consensus emphasizes achieving economic efficiency and growth through market liberalization and structural adjustment. Its implementation relies on conditional assistance from international financial institutions and is usually accompanied by strong interference in national sovereignty. In contrast, the Beijing Consensus advocates the leading role of the state in development, emphasizes pragmatic cooperation and gradual reform, focuses on infrastructure construction and mutually beneficial investment, respects the sovereignty of all countries, and promotes a cooperative model of consultation, joint construction and sharing. These two consensuses represent the fundamental differences between the West and China in development models and international cooperation concepts (see Table 3.1).

Table 3.1

Comparison of the Washington Consensus and the Beijing Consensus

Items	Washington Consensus	Beijing Consensus
Proposer	British economist John Williamson	American scholar Joshua Cooper Ramo
Core concepts	Market liberalization, privatization, structural adjustment	State-led development, pragmatic cooperation, gradual reform
Implementation methods	Conditional aid, IMF/World Bank program	Infrastructure priority, mutually beneficial investment
Attitude towards national sovereignty	Strong interventionism	Joint consultation, joint construction and sharing
Main representatives	United States	China

Source: [Author]

The AIIB and the Silk Road Fund serve as the core financial support for the BRI. The governance structure of the AIIB emphasizes consensus-building and flexibility, distinguishing it from the mandatory rules of traditional multilateral financial institutions, providing a more equitable financing platform with fewer political strings attached. Despite criticism of the AIIB, particularly regarding transparency and accountability mechanisms, the AIIB demonstrates China's capability to advance multilateral cooperation. The Silk Road Fund focuses on the long-term infrastructure

needs of countries along the "Belt and Road," emphasizing the strategic value and economic connectivity of projects rather than political reforms. This "development-first" investment model is well-received, meeting the needs of Southern countries while also enhancing awareness of sovereign equality, becoming an important tool for promoting the "Southern discourse." The governance model and conditionality principles of the Asian Infrastructure Investment Bank (AIIB) are somewhat different from those of traditional institutions such as the International Monetary Fund and the World Bank.(see table 3.2).

Table 3.2

AIIB vs World Bank/IMF governance comparison chart

Items	AIIB	World Bank / IMF
Decision-making	Mechanism Consensus, few additional conditions	Voting by equity ratio, additional political conditions
Dominant country	China is the largest shareholder, but the resolution requires participation of multiple countries	Led by the United States and Western countries
Use of funds	Infrastructure investment is prioritized	Development-oriented Structural adjustment, aid is the main
Financing additional conditions	Very few political additional conditions	Emphasis on institutional reform and market liberalization
External evaluation	Transparency needs to be improved, rapid expansion	Stable operation, but many criticisms

Source: [Author]

The Belt and Road Initiative (BRI) has made notable progress in promoting infrastructure development and economic cooperation across participating countries. However, it is valued for its environmental, social and governance (ESG) standards in terms of governance practices and project transparency.. In contrast, BRI projects are often scrutinized for the absence of a standardized and transparent ESG evaluation framework. A case in point is the Hambantota Port project in Sri Lanka, which commentators have cited as evidence of a so-called "debt trap." However, closer examination suggests that many of the difficulties surrounding the project resulted from

weak financial management and decision-making at the local governmental level rather than the terms of Chinese financing itself.

Critics believe that the Belt and Road initiative, in the absence of transparency and accountability mechanisms, could weaken international governance standards, especially in environmental protection, project supervision and open bidding.

Actually, the BRI project not only redefined the global economic landscape but also has a change in the ideas of global governance. The BRI is creating a "Southern discourse" system with a focus on development and the principles of pragmatic collaboration, as well as sovereignty and equality through the use of platforms such as the AIIB and the Silk Road Fund. This program provides new development opportunities and options for nations in the Global South, even in spite of disagreements about governance standards and transparency. As BRI deepens in the future, it might be a major factor in the global governance structure and have a profound effect on the political and economic environment.

Proposals to integrate the BRI more closely with multilateral governance frameworks have gained increasing attention. Its achievements lie not only in fostering bilateral partnerships and respecting the principle of national sovereignty, but also in progressively engaging with global multilateral governance mechanisms. Through collaboration with entities such as the United Nations, the World Bank, and the G20, China has sought to position the BRI within the broader architecture of global governance. This approach reflects an effort to contribute to a more diversified and inclusive model of international development, while advancing institutional innovation on a global scale [34].

The Belt and Road Initiative is closely aligned with the United Nations' 2030 Agenda for Sustainable Development, and its scope of cooperation has been continuously expanding across multiple critical areas, including infrastructure construction, education, clean energy development, and sustainable economic integration. The BRI′s scope of cooperation has continually expanded, focusing on key areas such as infrastructure development, which is essential for enhancing regional

connectivity and fostering trade. Additionally, the initiative emphasizes the importance of education, aiming to improve skills and knowledge across participating countries, thereby supporting long-term socio-economic development. Clean energy development is another significant aspect of the BRI, with projects designed to foster sustainable energy solutions, reduce carbon emissions, and address climate change concerns. Furthermore, the BRI promotes sustainable economic integration by enhancing cross-border trade and investment, thus creating a more interconnected and resilient global economy. This holistic approach supports the achievement of the UN′s Sustainable Development Goals (SDGs) by prioritizing inclusivity, environmental sustainability, and equitable development.(see fig.3.1). These projects not only effectively improve material connectivity and regional integration, but also integrate social inclusiveness and environmental responsibility into the planning and implementation stages, shifting from pure economic benefits to more balanced consideration of ecological impacts, local employment, capacity building and long-term resilience.China and the United Nations Development Programme (UNDP) jointly advance multiple infrastructure projects, emphasizing a balance between environmental and social benefits.

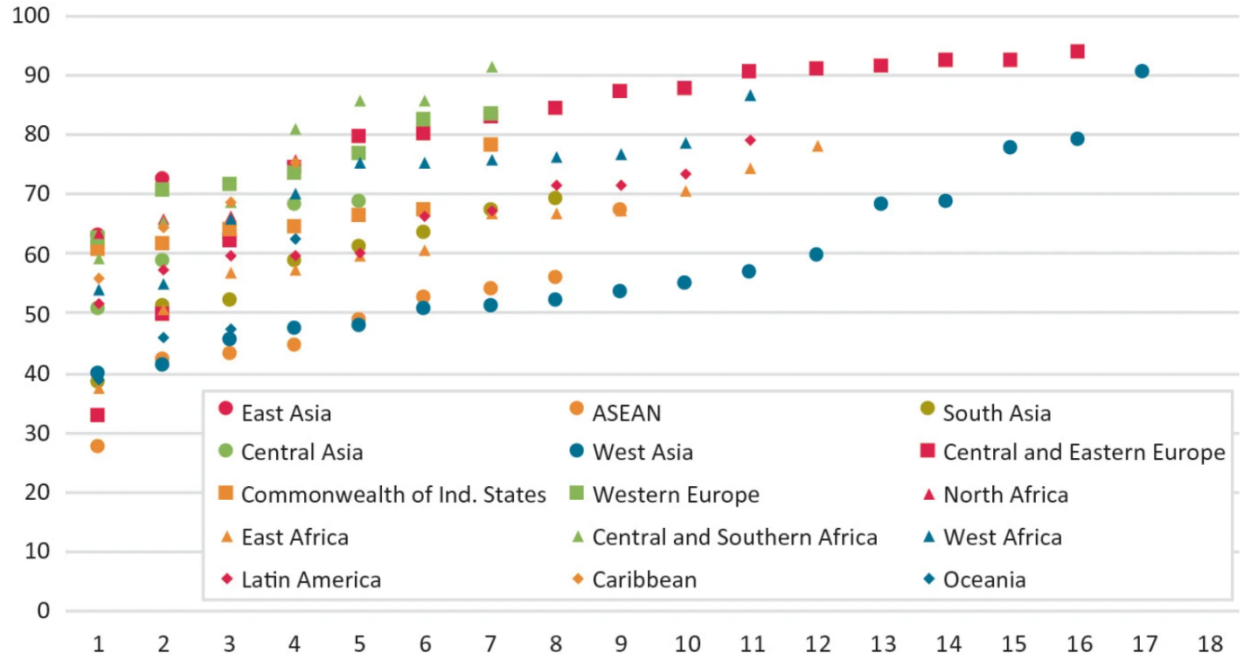

Fig.3.1.Countries along BRI all focus on land ecological practices

Source: [Green BRI and 2030 Agenda for Sustainable Development]

In the area of education, the Belt and Road Initiative has placed particular emphasis on vocational education and skills training in participating countries. These efforts aim to enhance human resource development and promote greater educational equity. Through scholarships, joint educational programs, and skills development initiatives, the BRI has contributed to improving both access to and the quality of education in several partner countries. Many of these initiatives align closely with the United Nations' Sustainable Development Goal of ensuring inclusive and equitable quality education.

At the same time, China has invested heavily in clean energy projects, including solar and wind power, as part of its commitment to green development under the BRI framework. However, for such projects to meaningfully contribute to a country's renewable energy transition, the active participation and policy support of local governments are essential. In this context, the United Nations can play a constructive role by offering regulatory guidance and coordination to ensure these initiatives adhere to international sustainable development standards.

As a leading global development finance institution, the World Bank has expanded its collaboration with BRI projects in areas such as project financing, policy consultation, and environmental governance. Recognizing the urgent need to address the global infrastructure investment gap, the World Bank has identified significant potential in BRI projects, focusing its cooperation on promoting sustainable investment, managing debt risks, and maintaining fiscal stability in developing economies[57].

In terms of environmental and social governance, the different views between China and traditional governance have occasionally brought challenges. However, ongoing engagement has contributed to raising the transparency of BRI projects and aligning them more closely with international governance practices. This process has helped improve the global perception of the initiative and demonstrated responsiveness to concerns regarding environmental and social management.

Furthermore, as a central forum for global economic governance, the G20 has increasingly incorporated discussions on the Belt and Road Initiative within its agenda. China has actively used this platform to advance trade and investment, promote green

development, and encourage international climate cooperation. By engaging with the G20, China seeks to strengthen coordination with major economies and contribute to the diversification of global governance frameworks, offering new ideas for sustainable economic recovery and development.

The BRI actively collaborates with the Association of Southeast Asian Nations (ASEAN) and the African Union (AU), becoming a significant driving force for regional integration. ASEAN countries have achieved remarkable results in infrastructure development, trade facilitation, and connectivity through "Belt and Road," promoting economic integration and cooperation within the region. African countries benefit from large-scale investments in transportation, energy, and communications under "Belt and Road," enhancing regional connectivity and boosting economic growth and social prosperity. This growing partnership has also enabled African countries to engage more actively in global governance frameworks, amplifying their collective voice on international platforms and promoting a more balanced and inclusive world order.

In all terms, the Belt and Road Initiative (BRI) has actively participated in and contributed to global governance by aligning its framework and objectives with major international institutions such as the United Nations (UN), the World Bank, and the G20. This alignment has not only enhanced its legitimacy on the global stage but also allowed it to integrate into existing governance structures, thereby promoting shared development goals. The program emphasizes cooperation in key areas including green energy transition, educational advancement, and large-scale infrastructure construction, reflecting its broad developmental vision. Over time, the BRI has gained significant international relevance as a strategic mechanism for supporting global sustainable development efforts across continents[58].

At the regional level, the initiative works closely with multilateral organizations such as the African Union and the Association of Southeast Asian Nations (ASEAN), injecting new vitality into regional economic integration and cooperation. These partnerships help bridge development gaps and foster inclusive growth, reinforcing a more open, balanced, and multipolar global governance system. In addition to

immediate economic gains—such as increased investment flows and job creation—the BRI has also generated long-term social benefits by enhancing regional connectivity, reducing inequality, and strengthening institutional capacity. These outcomes contribute to a more resilient and sustainable international order (see fig. 3.2).

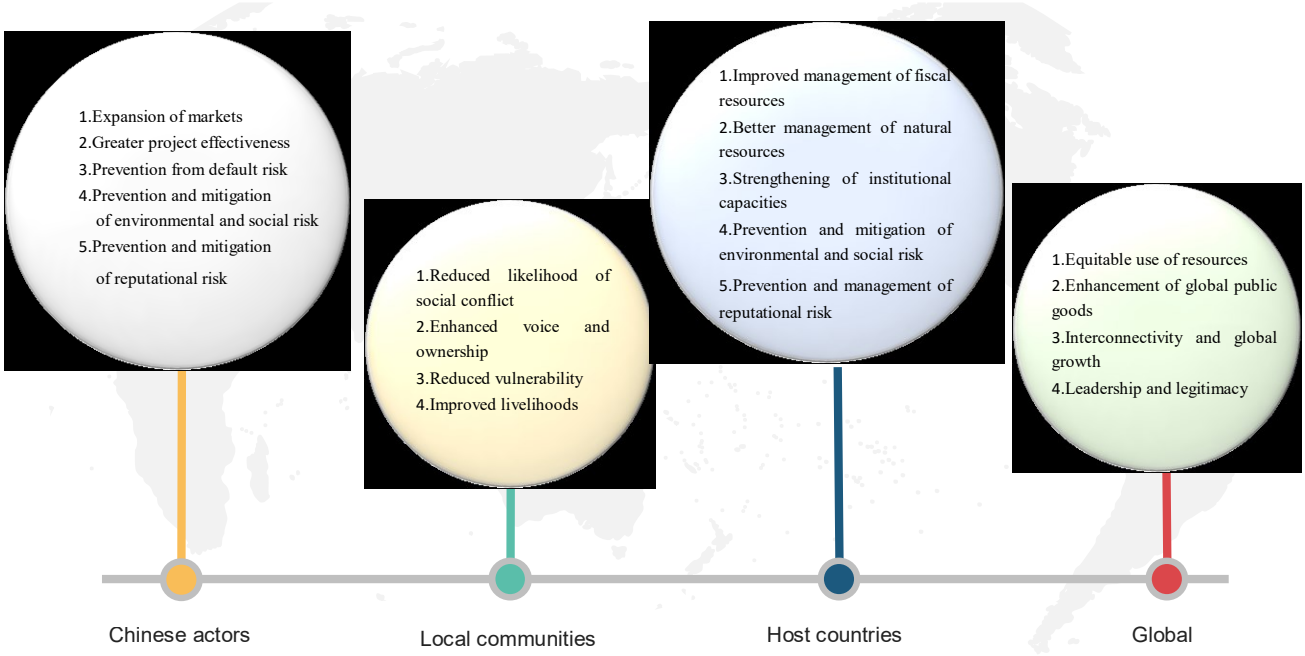

Fig.3.2.Benefits of standardizing the SDGs in the BRI

Source: [53]

Expansion of Regional Governance Influence through the BRI. Global challenges such as climate change, public health emergencies, and cross-border security issues are difficult for any single nation to address independently. In this context, regional governance frameworks have emerged as crucial platforms for coordinating multinational efforts, sharing resources, and facilitating information exchange. By fostering policy alignment, harmonizing standards, and enhancing infrastructure connectivity, regional governance lowers transaction costs, supports deeper economic integration, bolsters resilience against risks, and promotes inclusive and sustainable development. Amid rising geopolitical tensions, these mechanisms offer vital channels for dialogue and cooperation among countries, helping to reduce conflicts, build mutual trust, and preserve regional stability. Moreover, regional governance not only strengthens the institutional capacities of participating states but also enables influential

nations to advance regional norms and rules that align with their strategic interests and values, thereby shaping the regional governance landscape.

The significance of regional governance in the contemporary international landscape has been well established. The Belt and Road Initiative (BRI) serves as a pivotal catalyst in fostering and advancing regional governance structures. Within various BRI regions—including Southeast Asia, Central Asia, Eastern Europe, and Africa—there is a discernible trend toward the enhancement of regional governance mechanisms, manifested in diverse degrees and modalities. This phenomenon underscores the increasing acknowledgment among participating states of the imperative to pursue coordinated policy frameworks, institutional collaboration, and integrative governance approaches. Such efforts are aimed at effectively addressing shared transnational challenges while optimizing the developmental potential embedded within the Belt and Road corridors.

The Belt and Road Initiative (BRI) has emerged not only as an infrastructure and economic connectivity framework but also as a platform for expanding regional governance influence. Through its wide geographical coverage and emphasis on policy coordination, the BRI facilitates the diffusion of governance norms and cooperative mechanisms that transcend traditional bilateral relations. This expansion is not imposed, but rather evolves through iterative engagement, capacity-building efforts, and the establishment of shared interests among participating countries.

By promoting multilateral dialogue platforms, joint planning mechanisms, and institutionalized communication channels, the BRI contributes to the gradual shaping of regional governance frameworks. These include collaborative practices in areas such as customs harmonization, environmental standards, investment dispute resolution, and digital governance. As a result, the BRI fosters not only material connectivity but also regulatory and normative alignment across diverse jurisdictions.

Moreover, the initiative strengthens China’s role as a norm entrepreneur in the evolving architecture of global governance, especially in regions where traditional multilateral institutions have limited reach or influence. This norm-setting capacity is often exercised through the co-creation of soft law instruments, memoranda of

understanding, and flexible agreements tailored to local contexts. Over time, such practices contribute to a more cohesive and adaptive model of regional governance, one that emphasizes mutual respect, developmental complementarities, and inclusive rule-making.

Central Asia is a key node in the land route of the "Belt and Road," connecting China with Russia, Europe, and the Middle East as a transportation, energy, and security hub. For a long time, this region has been relatively marginalized in global politics. However, with the advancement of the BRI initiative, China has significantly invested in railways, highways, natural gas pipelines, and industrial parks in countries such as Kazakhstan, Uzbekistan, and Turkmenistan, gradually transforming Central Asia from a "passive geopolitical space" into a "regional cooperation center." These investments not only accelerate the industrialization and modernization processes of Central Asian countries but also promote collaborative efforts among countries within the region in infrastructure, energy, and trade, thereby enhancing China's role as an important "external driver" in Central Asian governance.

The Middle East is a significant source of China's energy imports and one of the most geographically conflict-prone regions globally. The BRI promotes stable partnerships between China and Gulf states, Iran, Turkey, and other countries through economic cooperation and connectivity projects. For example, China has strengthened production capacity cooperation with Saudi Arabia under the "Vision 2030" framework and signed a comprehensive 25-year cooperation agreement with Iran, promoting economic diversification in Middle Eastern countries through infrastructure investment and digital economy collaboration. This approach of "economic priority and stable cooperation" offers a development governance model distinct from traditional security politics in the Middle East, enhancing China's strategic influence in regional governance.

With the growing strategic importance of Africa, the Horn of Africa — positioned at the crossroads of the Middle East, Africa, and the Indian Ocean — has gained increasing geopolitical significance. In response, China has invested in ports, industrial parks, and railways in countries such as Djibouti and Ethiopia, aiming to enhance regional connectivity and improve local infrastructure. Beyond economic engagement,

China has also expanded its presence into the security sphere. Notably, Djibouti hosts China's first overseas military support base, reflecting a broader trend within the Belt and Road Initiative of integrating development projects with security cooperation in certain regions. This evolving approach suggests the gradual formation of a "development–stability nexus" linkage mechanism under the BRI framework.

The Economic Corridor promotes regional cooperation and governance synergy. The governance practices of the BRI at the regional level are mainly reflected in the construction of economic corridors, which are not only channels for logistics and trade but also "model demonstration zones" for institutional coordination, policy alignment, and industrial collaboration. A prime example is the China-Pakistan Economic Corridor (CPEC), one of the flagship projects of "Belt and Road," connecting Xinjiang, China, with Gwadar Port, Pakistan, spanning over 3,000 kilometers.

The CPEC project covers energy, transportation, information and communication, as well as industrial park development. It has not only significantly alleviated Pakistan's power shortage but also enhanced the country's transportation capacity and level of industrialization. More importantly, through coordination mechanisms between the Chinese and Pakistani governments, joint project evaluation teams, and oversight mechanisms, CPEC has, to some extent, established a "exemplary framework" for regional governance, achieving high levels of collaboration between China and Pakistan in areas such as infrastructure, security protection, and financial policies. Chinese companies have partnered with the Pakistani government to establish "preferential economic areas", promoting local employment and industrial chain integration, gradually shifting from "blood transfusion-style assistance" to "self-sustaining cooperation". In East Africa, while promoting infrastructure projects such as ports and railways, China has also strengthened cooperation with African countries in military training, naval escort and intelligence exchange.

The Chinese government has actively sought to enhance the Belt and Road Initiative by strengthening its alignment with regional organizations such as the African Union (AU), the Association of Southeast Asian Nations (ASEAN), and the Gulf Cooperation Council (GCC). Through collaborative planning, strategic coordination,

and policy interoperability, China has facilitated the restructuring of regional governance frameworks and the joint construction of regional discourse systems. By encouraging local participation and emphasizing partnership, the BRI framework has increased the policy autonomy and recognition of participating regional actors within their respective governance systems.

The regional expansion dimension of the BRI in global governance is becoming increasingly clear. By establishing new "zonal hubs" such as Central Asia, the Middle East, and the Horn of Africa, China not only exports infrastructure and capital but also injects new rules and cooperation mechanisms into regional governance structures. The construction of economic corridors, represented by the China-Pakistan Economic Corridor, has promoted policy coordination and institutional innovation in the region, providing an institutional guarantee for regional stability. More importantly, with the strengthening trend of "development–stability nexus" linkage, the BRI is gradually becoming a significant force in reshaping regional order. This development-centered, cooperation-based model of regional governance not only complements the existing international order but may also become a new option with broad appeal in the global governance system in the future.

In addition, the BRI's emphasis on infrastructure-led connectivity has catalyzed the formation of cross-border regulatory frameworks and planning norms, encouraging neighboring countries to engage in long-term vision-building rather than short-term transactional cooperation. By aligning national development strategies with regional integration goals, the initiative creates a common policy space that encourages trust and collective action. This shift from fragmented bilateralism to coordinated regionalism reflects a broader trend toward constructing an inclusive governance architecture that values pragmatism, developmental synergy, and political non-interference—attributes that distinguish the BRI from traditional Western-led institutional frameworks.

Motivational Impact of the BRI on Global South Governance Models. One of the most profound governance impacts of the Belt and Road Initiative (BRI) lies in its capacity to enhance the voice and agency of Global South countries in international affairs. By facilitating infrastructure development, economic integration, social

connectivity, and cultural exchange, the BRI strengthens the developmental capacities of participating states and enables them to play a more proactive role in shaping global governance agendas.The initiative contributes to a gradual restructuring of the global order—shifting it from a predominantly Western-led, hierarchical framework toward a more multilateral, inclusive configuration. As Global South countries gain material capabilities and institutional confidence through BRI cooperation, they are increasingly able to assert their interests, participate meaningfully in global rule-making, and engage in dialogue on more equal footing.

In this regard, the BRI not only offers resources for national development but also serves as a platform for normative transformation—amplifying alternative voices and promoting pluralism in global governance.

The BRI as an important platform for China to promote global development cooperation, has long transcended infrastructure construction and trade connectivity. It is more profoundly reflected in its exemplary and motivating role in shaping the governance concepts and institutional models of countries in the Global South. Through the BRI framework, China not only provides financial and technological support but also exports a pragmatic, results-oriented development philosophy that emphasizes state leadership and policy coordination. This institutional practice plays a crucial role in "institutional learning" (institutional learning) within South-South cooperation.

The Belt and Road Initiative (BRI) has exerted a discernible motivational impact on the governance trajectories of Global South countries by offering an alternative paradigm of development-oriented cooperation. Unlike traditional development frameworks that often link assistance to prescriptive policy reforms or conditionalities, the BRI emphasizes infrastructure connectivity, pragmatic partnerships, and state-led growth strategies. This approach resonates strongly with many developing countries that seek to assert policy autonomy while pursuing modernization goals.

Through its inclusive and non-coercive model, the BRI encourages recipient states to experiment with governance mechanisms that prioritize long-term investment planning, inter-agency coordination, and regional integration. In doing so, it contributes to a subtle recalibration of governance norms, particularly in areas such as public-

private collaboration, development finance, and institutional capacity-building. Moreover, the visibility and perceived effectiveness of BRI projects often serve as a reference point for Global South governments in designing their own policy instruments and regulatory reforms.

The motivational effect is further reinforced by the symbolic value of South-South cooperation embodied in the BRI. By demonstrating that large-scale infrastructure and transnational cooperation can be led by a non-Western actor, the initiative challenges prevailing narratives of dependency and hierarchy in international development discourse. This has the potential to stimulate endogenous governance innovation and diversify the models of global engagement adopted by emerging economies.

China's development model offers an alternative logic: the state plays a central role as a driver, emphasizing medium-to long-term planning, policy continuity, and infrastructure development first, while ensuring economic growth through stable governance capabilities.

China's economic achievements over the past four decades are particularly enlightening for countries in the Global South. China has maintained political stability while vigorously promoting reform and opening up, focusing precisely on infrastructure, manufacturing, and export-oriented industrial policies, thereby achieving large-scale poverty reduction and industrialization. The success of the BRI model has provided many countries with a Chinese approach. The BRI offers a platform that transforms this institutional model from an abstract concept into substantial policy experience and governance techniques through concrete cooperative practices. Unlike traditional aid models characterized by top-down technological input, the BRI advocates the principle of "mutual dialogue, collaborative engagement, and shared outcomes" emphasizing equal relationships between partners and long-term strategic synergy.

The logic of cooperation advocated by BRI exhibits a pronounced "pragmatism" in South-South cooperation. This model does not presuppose the export of values or impose demands for political reform; instead, it focuses on solving specific problems and achieving practical benefits. China emphasizes a project-centered approach, supported by industry, and oriented towards outcomes, which aligns with the global

South's emphasis on development outcomes, national sovereignty, and political stability. This non-politicized form of cooperation has made many countries more inclined to adopt Chinese solutions in their international choices.

For this reason, an increasing number of developing countries are proactively drawing on China's model when formulating their national development strategies. On one hand, this institutional learning is reflected in policy areas such as strengthening medium-and long-term strategic planning, enhancing the country's infrastructure coordination capabilities, and promoting industrial policies and investment attraction systems. On the other hand, it also manifests in governance concepts, such as emphasizing execution, political stability, and policy coordination—key elements of China's governance experience.

Despite the growing institutional incentives of BRI in South-South cooperation, its promotion and institutional learning process also face certain challenges. For instance, some countries, due to insufficient governance capabilities and weak institutional foundations, find it difficult to effectively absorb Chinese experience in the short term.

However, in practice, the BRI has gradually established a closed-loop mechanism of "collaborative development and institutional capacity building". It not only provides financing and technical support but also promotes the enhancement of self-governance capabilities in developing countries. For countries in the Global South, the BRI is not just a channel for resource acquisition; it is also an important platform for institutional exploration and capacity building on their own development paths.

Overall, the BRI initiative, as a platform for China's global governance philosophy, is stimulating high attention and institutional imitation of the "government-led + results-oriented" development path through South-South cooperation mechanisms. This process of institutional learning not only expands China's influence in the Global South but also gradually shifts the global development model from a singular Western narrative to a new pattern of coexistence and diversity. The governance philosophy of "development first, pragmatism foremost," promoted by the BRI, is becoming an important reference for institutional transformation and national capacity building in countries of the Global South.

3.2 Ways of future development trajectory of the BRI

Strengthening Multilateral Mechanisms and Governance Alignment. As the Belt and Road Initiative advances, the number of countries and regions involved is growing, increasing the complexity of transnational cooperation. Although the initiative has made significant progress in promoting global economic integration and infrastructure development, it still faces numerous challenges in terms of multilateral cooperation mechanisms and governance transparency. In particular, the lack of uniform standards and insufficient project governance transparency have become key issues affecting the long-term sustainable development of the BRI.

These problems have impacted the acceptance of the BRI on a global scale, especially in the eyes of Western countries and international financial institutions, where the lack of governance standards and transparency is one of the main reasons for their reservations. Therefore, addressing the issues of non-uniform standards and insufficient governance transparency, and improving international cooperation and project governance levels, has become a critical issue for the sustainable development of the BRI [29]. By working closely with international institutions and host country governments, the BRI can gradually establish a more robust governance framework that supports higher project quality, reduces implementation risks, and promotes inclusive development. Strengthening project governance and transparency will not only improve operational efficiency but also foster trust, legitimacy, and broader international support for the BRI's long-term objectives.

The primary objective of this governance approach is to enhance coordination and cooperation with existing international multilateral mechanisms. By fostering effective partnerships with organizations such as the United Nations, the Organization for Economic Cooperation and Development (OECD), and the World Bank, the Belt and Road Initiative can improve its operational standards and project management practices. This collaborative strategy would not only help promote the standardization of BRI projects but also strengthen global trust and enhance the initiative's international influence within the broader framework of global development.Such cooperation enables the sharing of best practices in areas like transparency, sustainability, risk

management, and community engagement, which are essential for the long-term success and legitimacy of BRI projects. Moreover, aligning with international norms and development priorities can facilitate smoother cross-border collaboration and enhance the initiative's credibility among global stakeholders. This collaborative model not only helps promote the institutionalization and standardization of BRI-related ventures but also contributes to building a more inclusive, rules-based international development system. By embedding itself more firmly within the architecture of global governance, the BRI strengthens mutual trust, reduces geopolitical misgivings, and reinforces its positioning as a constructive force in promoting shared growth, equitable cooperation, and global sustainable development.

The United Nations, as the world's most influential international organization, advocates and promotes global sustainable development goals (SDGs). The BRI can work with the UN to establish a common framework for action in areas such as infrastructure construction, education, and environmental protection. By collaborating with institutions like the United Nations Development Programme (UNDP), it ensures that BRI projects adhere to globally recognized social, environmental, and governance standards. For example, during project implementation, the principles of environmental protection, resource conservation, and social equity promoted by the UN can be integrated into the standard system ofBRIprojects, ensuring their sustainability and long-term benefits [35].

The World Bank, as one of the most influential and comprehensive international financial institutions, has consistently played a central role in promoting global infrastructure development and supporting economic progress in developing countries. Its long-standing commitment to financing large-scale public works and offering technical assistance has made it a key player in shaping international development norms and governance practices. By fostering collaboration between the Belt and Road Initiative and the World Bank, there is significant potential to elevate the quality and credibility of BRI projects. Specifically, such cooperation can introduce more rigorous standards in financial oversight, debt sustainability analysis, and project risk assessment, aligning them with international best practices (see fig.3.3).

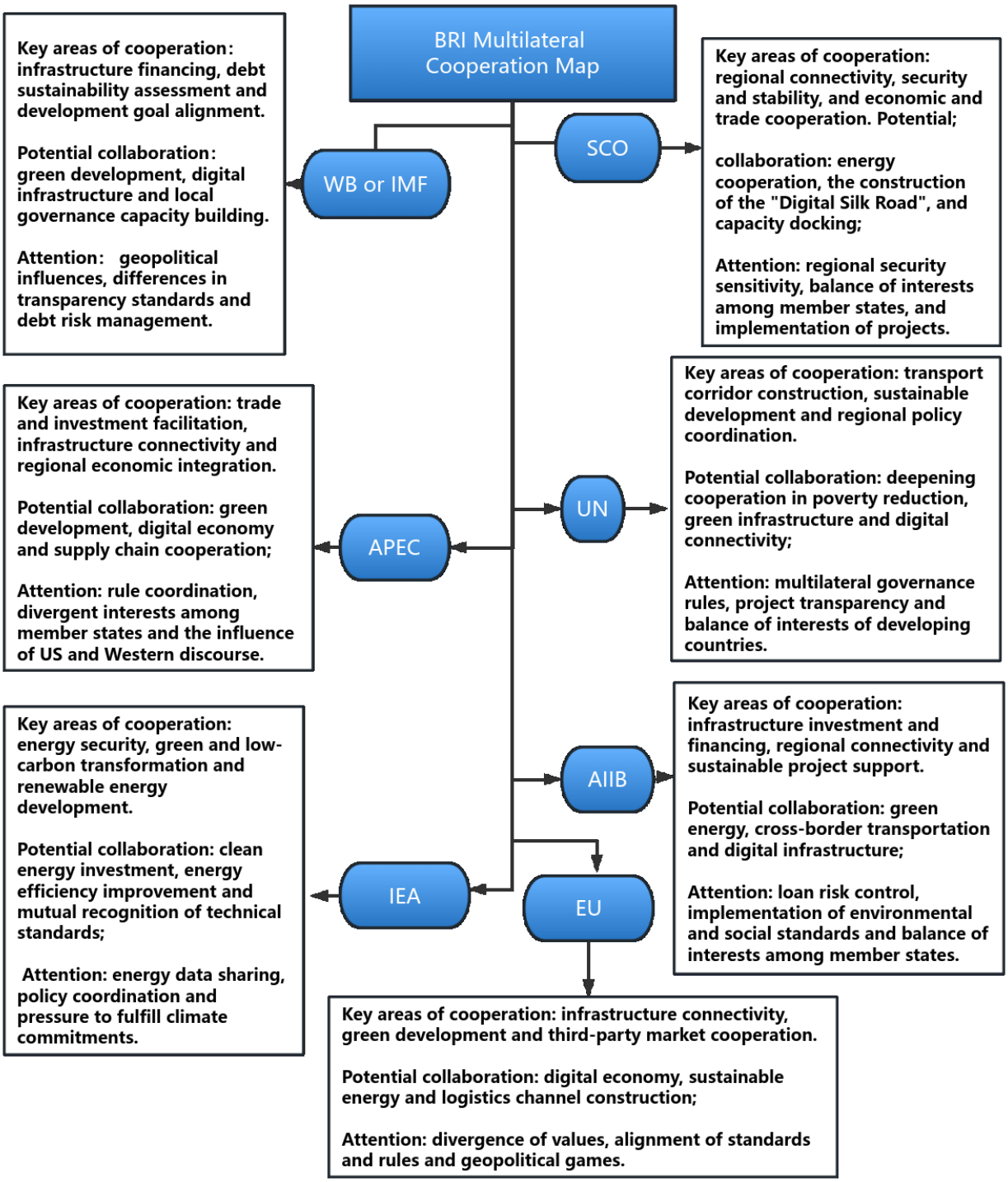

Fig.3.3.Overview of some potential multilateral cooperation under BRI.

Source: [Author]

Collaborative partnerships with international consultancy agencies, environmental NGOs, and local academic institutions can provide valuable expertise and third-party oversight to strengthen the governance structure. By integrating these mechanisms, the Belt and Road Initiative can enhance its risk management capacity,

build trust with international partners, and foster more sustainable, equitable, and socially responsible development outcomes in participating regions.

Enhancing Risk Governance and Project Quality Control. Projects along the Belt and Road Initiative (BRI) corridor are increasingly exposed to complex political, economic, social, and technological risks. In light of heightened geopolitical tensions and mounting global economic uncertainties, traditional experience-based approaches to risk management are no longer sufficient to meet the demands of high-quality development. It is therefore imperative to establish an institutionalized and systematic framework for risk identification and classification. Such a framework should enable dynamic monitoring and tiered response mechanisms, covering multiple dimensions including political stability, regulatory shifts, economic volatility, social acceptance, and technological compatibility. Effective risk pre-assessment at the project planning stage is essential to ensure long-term project viability.

In practice, projects assessed as high-risk should be equipped with dedicated risk control teams and contingency plans, with progress adjusted accordingly. Medium-risk projects require enhanced local engagement and regular evaluation, while low-risk initiatives can be managed under streamlined protocols. Drawing on the expertise and operational standards of multilateral institutions such as the World Bank and the Asian Development Bank—while integrating China's own experience in overseas infrastructure and political coordination—can lead to the creation of a localized yet internationally aligned risk governance model.

Ensuring high-quality development under the Belt and Road Initiative (BRI) requires a comprehensive and lifecycle-oriented approach to project quality management. Many past infrastructure projects have suffered from a “speed-over-substance” mindset, leading to concerns over engineering standards, safety compliance, and long-term sustainability. To address these challenges, it is essential to establish a full-cycle quality control system that spans every phase of project development—ranging from initial planning and feasibility studies, through design, bidding, and construction, to eventual operation and maintenance.

This quality assurance system must go beyond administrative supervision and emphasize the integration of third-party oversight and local stakeholder participation. Independent engineering consultancy firms, international standards bodies, and environmental and safety certification institutions should be brought in during both the design and implementation stages. Their involvement ensures adherence to global benchmarks in construction safety, environmental protection, and legal compliance, thus reducing the risk of project delays, structural failures, or reputational damage. Moreover, embedding transparent evaluation mechanisms throughout the project cycle can prevent quality compromises caused by tight schedules or political pressures.Incorporating local actors—such as host country engineers, regulatory bodies, and civil society representatives—into the quality control process further enhances legitimacy, accountability, and social responsiveness. It also contributes to capacity-building and technology transfer in recipient countries, in line with the BRI's broader development-oriented goals. For example, collaborative supervision frameworks involving both Chinese and local project managers have been found to improve communication, prevent mismanagement, and ensure standards are met across diverse operational environments.

Furthermore, quality control must be adaptive and responsive to the conditions of each project and country. A rigid "one-size-fits-all" approach often fails in contexts with varying infrastructure capacity, climate risks, or regulatory environments. Hence, the system should incorporate feedback loops and real-time monitoring tools to identify deviations early and make timely adjustments.

Ultimately, strengthening the quality control architecture across the entire project lifecycle is vital not only for ensuring the safety and durability of BRI projects, but also for safeguarding China's credibility as a responsible global partner. It reflects a shift from quantity-driven expansion toward value-oriented cooperation, which is essential for the long-term resilience, efficiency, and international recognition of the BRI.

Enhancing transparency is a critical component of advancing the credibility, efficiency, and public legitimacy of Belt and Road Initiative (BRI) projects. In the face of growing international scrutiny and domestic sensitivities in host countries, greater

openness regarding project implementation processes can significantly mitigate political resistance, dispel misinformation, and foster a more cooperative environment. Establishing a systematic project performance evaluation framework is therefore essential, particularly one that emphasizes regular feedback mechanisms during the operational phase of infrastructure projects.

Such a framework should incorporate quantifiable performance indicators, environmental and social impact metrics, and beneficiary feedback channels. These components allow for continuous assessment and help identify areas requiring improvement, rather than relying solely on post-completion reviews. Regular progress reports that document construction milestones, local employment outcomes, environmental compliance, and community development contributions can be made publicly available, either through government portals or multilateral cooperation platforms. Transparency in this context is not only a governance value, but also a practical strategy to build trust and manage expectations among stakeholders.

Moreover, community participation and local engagement in project monitoring can serve as effective tools for improving project design and implementation. By involving local civil society organizations, academic institutions, and regional media in data collection and oversight, projects can become more responsive to local needs and concerns. This inclusive approach enhances the perceived legitimacy of BRI investments and reduces the likelihood of public opposition arising from perceived secrecy or top-down decision-making.Independent supervision bodies—such as third-party auditors, technical experts, or regional development organizations—can also play a valuable role in verifying information and offering professional recommendations. Their involvement reinforces the objectivity of project evaluations and supports adaptive governance based on real-time evidence. Furthermore, leveraging digital technologies such as geospatial monitoring, open-access databases, and blockchain-based reporting systems can help institutionalize transparency and reduce information asymmetries between stakeholders.

Ultimately, transparency is not merely a reputational concern; it is foundational to effective transnational cooperation. By embedding open communication,

participatory monitoring, and evidence-based reporting into BRI project governance, China and its partners can strengthen mutual confidence, align development expectations, and promote a more stable and inclusive international development environment.

Addressing Debt Risks and Fiscal Sustainability Challenges. As the scale of projects continues to increase, it has also raised questions about debt risks and fiscal sustainability. This is particularly true In certain low-income and developing economies, the implementation of specific BRI projects have seen increasing debt burdens due to incorrect financing methods and repayment arrangements, leading to debates about unsustainable debt burdens. This issue not only affects the financial health of recipient countries but also negatively effects the international image and sustainability of BRI.

To appropriately solve debt risks and resolve the dispute over unsustainable debt burdens, a series of measures need to be taken, especially in improving debt transparency and financing methods."Establishing a debt disclosure mechanism is important to solving debt problems; introducing international joint financing platforms can effectively share the burden of debt, avoiding excessive reliance on any particular country or institution.

Debt transparency refers to the understanding and supervision of debt by all parties involved, including key information such as total debt, debt structure, and repayment cycles. A debt transparency mechanism can help recipient governments, international financial institutions, and the public better understand the true state of debt, preventing its hidden accumulation. For example, in the BRI project, participating countries can be required to regularly disclose debt information, including the purpose of borrowing, repayment schedules, interest rates, and other terms, and establish a transparent debt management system. Through this mechanism, not only can it enhance oversight of debt and prevent its misuse, but it can also boost the trust of international investors, ensuring that the BRI promotes development cooperation while avoiding excessive debt accumulation.

In order to successfully solve debt hazards and support the financial sustainability of the economy, international cooperation and the debt restructuring process are necessary. The IMF and the Paris Club are significant global financial and debt management institutions that play a crucial role in coordinating international debt issues and providing debt restructuring programs. By collaborating with these institutions, the management and monitoring of BRI project debts can be strengthened. For example, when certain countries face repayment difficulties, China can work together with the IMF and the Paris Club to negotiate appropriate debt restructuring measures, such as deferring payments or reducing part of the debt, to help these countries overcome their fiscal challenges. Additionally, the IMF and the Paris Club can provide technical support and policy guidance for debt restructuring, ensuring that debt solutions comply with international norms and prevent the formation of unsustainable debt burdens.

The transparency of debt restructuring is crucial for enhancing the credibility and fairness of the BRI. By making debt restructuring cases public and transparent, the international community can clearly understand the measures and efforts China has taken to address its debt issues. This approach not only helps dispel misunderstandings about China's lending practices but also provides valuable lessons and experiences for other countries. For instance, during the debt restructuring process, ensuring the right to information and oversight of all parties involved, openly discussing and disclosing specific plans and implementation processes, allows the broader society to fully understand and monitor this process. Moreover, transparent debt restructuring can enhance political stability and economic health in beneficiary countries, laying a more solid foundation for future cooperation.

The success of the BRI not only depends on the scale and speed of infrastructure construction but also requires ensuring effective management of debt risks and fiscal sustainability. It is essential to effectively address the controversy over debt risks and the unsustainable debt burdens, enhancing the international image and long-term sustainability of the BRI. This will not only help recipient countries achieve fiscal

health but also provide more equitable, transparent, and sustainable solutions for global economic cooperation.

Promote the construction of localization and benefit-sharing mechanisms. As projects advance, some have failed to adequately consider local needs and interests, leading to a lack of full representation of "local benefits." This situation can cause dissatisfaction among local communities and even negative sentiment towards China's involvement. Not only does this affect the sustainability of the project, but it also diminishes social recognition and support for the BRI.

To solve the issue of local interests being neglected in projects, it is required to increase the participation rights of local governments and communities. Projects should take into account the cultural characteristics, economic structure, and social needs of local communities. Through increasing community involvement, we may assure that projects maximize the improvement of residents' lives and meet their development goals, therefore attaining a win-win situation.

Local governments serve as a vital bridge between Chinese enterprises and local communities in the implementation of BRI projects. By enhancing their involvement, it is possible to ensure that the project fully takes into account local economic, cultural, and social needs during its design and execution. In the early stages of the project, intergovernmental dialogue mechanisms should be used to fully listen to the opinions of local governments, ensuring that the project aligns with local development plans. During the implementation process, local governments should play a supervisory role, ensuring compliance with local laws and regulations, and promoting coordinated development between the project and the local economy.

In addition to local governments, the community where the project is located is also a key factor in its success. Community involvement not only facilitates the smooth progress of the project but also enhances local residents 'sense of identity with it. During the planning phase, community research can be conducted to gain a deep understanding of residents' needs and expectations, ensuring that the project provides tangible economic benefits and social development opportunities for them. Furthermore, establishing a mechanism for community representatives to participate in

project decision-making can give community members more say during implementation, thereby increasing the social acceptance of the project.

Specific paths should include the establishment of joint management agencies, strengthening human capital construction, and guiding social enterprises to participate. Through these paths, not only can the sustainability of the project be improved, but also the interests of local residents and governments can be guaranteed to the greatest extent.

Establishing a joint management body to enhance collaborative management among investors, local government representatives, and community representatives. Joint collaborative management ensures that project decisions are more democratic and transparent, allowing local governments and community members to play a role in the decision-making process. Additionally, joint management helps resolve conflicts between different stakeholders, ensuring the smooth progress of the project and enabling timely adjustments to issues arising during implementation. Social enterprises have a unique role in promoting sustainable development and local interests. By encouraging social enterprises to participate in BRI projects, it can promote companies to focus not only on economic benefits but also on social responsibility and environmental protection.

Localization and shared benefits are key to the long-term development of the BRI. In the design and implementation of projects, only by enhancing the participation rights of local governments and communities, promoting localized construction, and ensuring the effective implementation of benefit-sharing mechanisms can we increase social recognition and support for the BRI. By establishing joint management bodies, strengthening human capital development, and guiding social enterprises to participate, not only can the sustainability of the project be enhanced, but also the economic development of the local society and the improvement of people's lives can be promoted, thus achieving a win-win situation and providing a more solid foundation for global economic cooperation and development.

Developing the Digital Silk Road and Advancing Tech and Data Governance. In the progress of the BRI, the advancement of digital connectivity initiatives has emerged

as a core element in facilitating the global transition toward a more digitized and information-based economy. This initiative, commonly referred to as the Digital Silk Road, encompasses not only international electronic commerce, online financial systems, and the construction of digital communication infrastructure, but also the spread of digital literacy, regulatory coordination in cyberspace, and the expansion of technology-driven economic activities. As information technologies are increasingly integrated into various sectors, the frequency and severity of cybersecurity threat.

Establishing a multinational network of partners is important to the process of constructing to BRI digital infrastructure expansion To develop a"Belt and Road Digital Partnership, which is "Network and Road", which supports multi-party collaboration in information technology, data governance, and the digital economy, it is possible that China and its governments will cooperate with the government, enterprises, and other international organizations. In addition to cooperating with governments, this network should include industry organizations, academic institutions, and businesses, which encourage sharing and cooperation in the fields of digital technology, innovation, and data governance.

By working with the nation along BRI, the digital "Silk Road" , and the rest of the world, the Digital Silk Road maybe made global by means of it, including and inclusive, fostering national mutual partnership with one another with regard to digital technologies, data governance and cyber security, which increases the energy of the digital economy as a whole. To ensure its successful progression, attention must be given to building data centers and standardizing network infrastructure. These efforts will not only foster technological innovation and enable smoother data flows but also strengthen the technical capabilities and security measures of participating countries in constructing the Digital Silk Road.

Under the framework of the Digital Silk Road, countries can collaborate to establish data centers, promoting local storage, flow, and secure management of data. Data centers serve as a critical infrastructure supporting the digital economy's growth, offering vital data support for cross-border digital cooperation. China can partner with Belt and Road Initiative (BRI) countries to create regional or transnational data centers,

addressing the varying needs of data sovereignty and security while facilitating efficient data flow between nations. These centers can adopt international technical standards and security measures to ensure the safety and compliance of cross-border data exchange.

The standardization of network infrastructure is a crucial element in advancing Digital Silk Road cooperation. Due to varying network technologies and infrastructure development across countries, differing standards can create technical barriers to collaboration. To foster global digital cooperation, it is vital to promote the standardization of network infrastructure. Unifying technical standards, enabling device interoperability, and improving the efficiency and security of data transmission will support the seamless progress of the Digital Silk Road. This approach enhances technological capabilities across countries and provides more stable and reliable network infrastructure for global information sharing and digital economy collaboration.

Under the BRI framework, the Digital Silk Road is emerging as a key driver of global economic digitalization and informatization. By establishing international agreements, creating a "Belt and Road Digital Partnership" network, developing data centers, and standardizing network infrastructure, these initiatives can effectively promote global digital governance cooperation. They also foster deeper collaboration among BRI countries in areas like the digital economy, technological innovation, and data exchange. The development of the Digital Silk Road not only offers new opportunities for the global economy but also provides a more open, inclusive, and diversified approach to global governance.

Promoting Sustainable and Inclusive Growth through Collaboration. The realization of sustainable and inclusive development objectives under the Belt and Road framework necessitates coordinated engagement through multi-stakeholder partnerships. Multi-stakeholder partnerships play a vital role in aligning diverse interests, mobilizing resources, and ensuring that development projects are responsive to local needs while adhering to international standards. Such inclusive collaboration helps enhance transparency, improve project design and implementation, and promote

social and environmental responsibility. By fostering dialogue and cooperation among all relevant actors, the BRI can better support equitable growth, reduce development disparities, and contribute to a more balanced global development process. Ultimately, these partnerships are essential for building long-term trust, strengthening resilience, and ensuring that the benefits of the initiative are broadly and fairly shared.

As the principal architect, China's role in the Belt and Road Initiative (BRI) extends beyond establishing multilateral funding instruments and knowledge transfer systems to encompass strategic confidence-building measures that enhance intercultural policy coordination. By institutionalizing innovative financing models—such as blended finance, public-private partnerships, and sovereign-backed green bonds—China is fostering more resilient funding ecosystems capable of addressing the long-term capital demands of transnational infrastructure and connectivity projects. Simultaneously, it is advancing institutional innovation within partnership frameworks by promoting inclusive governance structures that engage not only state actors, but also regional organizations, private enterprises, and civil society stakeholders, thereby increasing stakeholder ownership and reducing asymmetries in negotiation power.

Additionally, the rigorous implementation of ecological preservation protocols and community-focused accountability mechanisms reflects a growing shift toward more socially and environmentally responsive development models. These measures contribute to mitigating a complex array of cross-border risks, including sovereign debt instability, climate adaptation challenges, and coordination dilemmas in a multipolar geopolitical context. Collectively, these multidimensional strategies are aimed at operationalizing a polycentric governance architecture that strengthens procedural legitimacy and adaptability across diverse regional settings. In doing so, the BRI reinforces its normative alignment with emerging global paradigms of equitable, sustainable, and rules-based multilateral development governance, positioning itself as a pragmatic alternative to traditional North-led frameworks. (see fig.3.4).

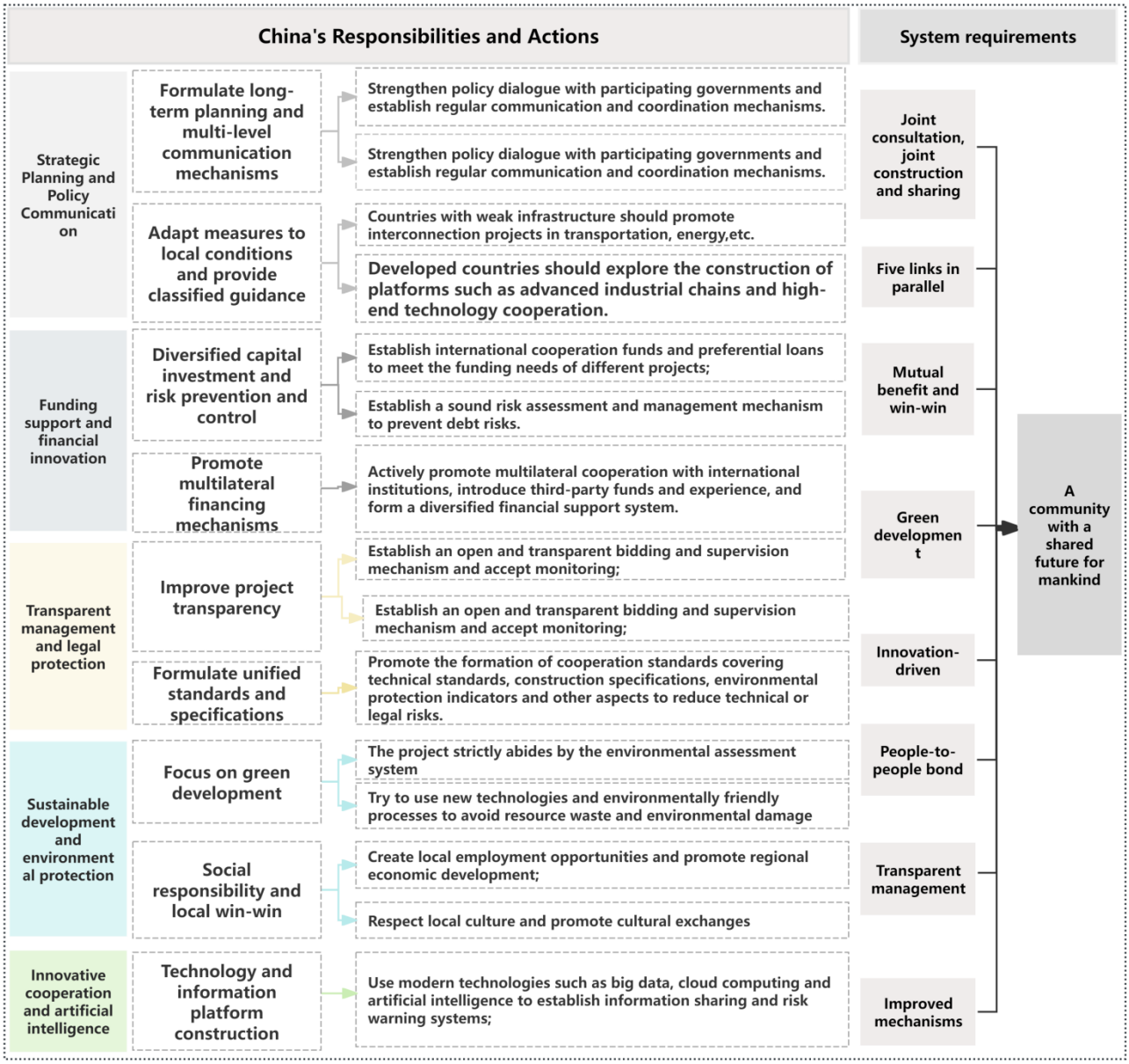

Fig3.4.China's Government Responsibility's Actions in the BRI

Source: [Author]

Participating nations should develop differentiated cooperation models according to their developmental contexts. For ASEAN and Central Asian middle-income economies facing infrastructure deficits, policies should focus on improving regulatory coherence and attracting private capital for critical projects. These states must strengthen project governance capabilities covering design, risk management, and operational oversight to ensure sustainable outcomes.

Resource-rich low-income countries in Africa and the Middle East require prioritized project selection with strict debt monitoring, environmental safeguards, and community benefit-sharing mechanisms. Implementing social impact assessments

(SIA) can help align projects with local welfare needs. Meanwhile, Central-Eastern European and South Asian emerging economies should utilize their geographic and industrial advantages to develop regional supply chains and multilateral partnerships, fostering cross-border economic integration.

In resource-rich but economically underdeveloped countries across Africa and the Middle East, the prioritization of infrastructure and investment projects must be guided by a framework that ensures long-term financial sustainability, environmental responsibility, and inclusive social development. Given the vulnerability of these nations to debt distress and ecological degradation, it is essential to adopt strict debt monitoring mechanisms alongside comprehensive environmental protection measures. Moreover, establishing robust community benefit-sharing systems is crucial to ensure that local populations genuinely profit from these initiatives. One effective approach is the integration of Social Impact Assessments (SIA) into the project planning and evaluation process, which helps align investment goals with the actual welfare needs of affected communities and enhances local ownership.

At the same time, emerging economies in Central-Eastern Europe and South Asia should strategically leverage their geographic locations and existing industrial capacities to position themselves within regional and global supply chains. By deepening multilateral cooperation and forming production linkages with neighboring countries, these economies can accelerate cross-border trade, attract diversified investment, and strengthen their role in regional economic integration.

Global multilateral institutions and regional cooperation platforms can provide essential support in technical evaluation, risk control, regulatory coordination, and establishing stable operational environments for Belt and Road projects. The sustainable advancement of the BRI fundamentally relies on three core elements: continuous improvement of cooperation guidelines through practical implementation, active enhancement of partner countries' institutional capabilities, and effective integration of multilateral mechanisms with non-governmental stakeholders. Through systematic collaboration between participating governments, international organizations, and civil society, the initiative is positioned to evolve into a development

platform that balances ecological sustainability, social inclusiveness, and cross-regional economic integration. (see fig.3.5).

Fig3.5.Member Countries' Responsibility's Actions in the BRI.

Source: [Author]

The future trajectory of the Belt and Road Initiative (BRI) hinges on its ability to evolve toward a more institutionalized, inclusive, and sustainable model of global cooperation. Strengthening multilateral mechanisms and aligning governance frameworks will be essential to harmonize standards, enhance procedural legitimacy,

and coordinate policies among a growing and diverse group of partner countries. At the same time, although green development may not be the core agenda of every project, promoting environmentally responsible practices and gradually establishing ecological standards remains critical for ensuring long-term project viability and global credibility. To mitigate growing concerns over financial exposure, the BRI must also address sovereign debt risks and promote fiscal sustainability through transparent financing, risk-sharing mechanisms, and adaptive project planning. Moreover, fostering localization and equitable benefit-sharing mechanisms will be crucial to enhance host country ownership, ensure employment generation, and strengthen the social license to operate. The initiative should also prioritize the development of the Digital Silk Road, advancing technological infrastructure and improving digital governance to support data security, cross-border innovation, and digital inclusion. Ultimately, by embedding principles of sustainable and inclusive growth through collaborative partnerships, the BRI can consolidate its normative alignment with the evolving architecture of global development and foster a more resilient, cooperative international order.

3.3 Key vectors and model of future inclusive development under BRI

Promoting Equal Economic Opportunities through Infrastructure Improvement. Functioning as a pan-continental development framework bridging Eurasian and African economies, the Belt and Road Initiative prioritizes transnational infrastructure integration while concurrently advancing equitable allocation of growth dividends across participating states. This is particularly important in regions with uneven resource distribution and imbalanced regional development, where infrastructure construction can address bottlenecks in economic circulation, thereby enhancing production and distribution capabilities in inland and remote areas, driving inclusive growth. This conceptual foundation highlights the BRI's commitment to equilibrium-driven development strategies, functioning not merely as a mechanism for transnational infrastructure interoperability but as a governance framework ensuring equitable resource distribution, social justice advancement, and territorial development coordination across participating regions.

Development economics generally holds that infrastructure is a prerequisite for the expansion of productivity and the coordination of regional development, especially in inland, mountainous, and border areas. The absence of infrastructure is one of the fundamental reasons in response to regional imbalances in economic growth. Traditionally, issues such as poor transportation, inadequate logistics, and limited information have severely constrained these areas' ability to integrate into national and even global markets, and have also inhibited the efficiency of capital, technology, and talent flows. However, the "hard connectivity"—emphasized by the BRI, including projects like railways, expressways, port hubs, and energy supply systems facilities, has fundamentally transformed the geographical destiny of these regions, turning them from peripheries into hubs and from isolated islands into vital links.

Taking the China–Europe train network as an example, it is one of the most representative and effective outcomes of infrastructure cooperation under the BR. As an international freight railway system linking China to European regions and linking Central of Asia and Russia, the transcontinental China-Europe rail corridor has continuously expanded during the past several years, attaining most inland provincial

capitals in China and over 100 cities in more than 20 European countries. Compared to traditional maritime transport, the China–Europe train network offers advantages such as shorter transit times, strong stability, and high adaptability, making it particularly significant for transporting products with high added economic value and time-sensitive goods.

The infrastructure development fosters material interconnectivity alongside institutional harmonization and market integration. Numerous jurisdictions situated along BRI corridors, notably landlocked states including Kazakhstan, Uzbekistan, Laos, and Ethiopia, historically confronted constrained accessibility to transnational logistics networks, constraining their participation in transnational production networks. BRI-sponsored transport corridors spanning rail networks, highway systems, and maritime hubs facilitate connectivity with international market systems, enhancing export capabilities for domestic commodities while stimulating capital inflows for industrial facility development, localized manufacturing, and value-added processing operations. This infrastructural advancement effectively bridges spatial economic disparities through enhanced multimodal transportation accessibility.

The Sino-Laotian rail corridor, for instance, was built with Chinese aid to increase the efficiency of transportation from Vientiane to the border with China, but it also indirectly increased tourism, agricultural exports, and urban development in a number of developing regions in northern Laos. Over the previous decade, China has undertaken it possible for many landlocked African countries to access the Red Sea or the Atlantic Ocean, which has undermined the structural barriers of "resource export dependence on neighboring countries" thanks to its investments in railroads, ports, and ports in Africa.

This kind of infrastructure increases trade connectedness, promotes economic self-organization, making previously fragmented regional economies more integrated and opening the possibility for local industrial development. In particular, in emerging sectors such as digitalization and green energy, these channels encourage technology dissemination, people exchanges, and investment flows, laying the groundwork to foster enduring and equitable development.

The realization of economic inclusiveness should be seen between regions and extend to different social strata. On one hand, the employment opportunities brought about by infrastructure development are evident. Numerous construction projects provide jobs in architecture, transportation, and management, especially in countries with high youth unemployment rates, creating an initial "employment safety net" effect. On the other hand, industrial upgrading and the development of foreign trade channels have also spurred education, training, and skill development, enhancing workforce capabilities and the growing their social mobility.

The BRI also promotes the development of "soft connectivity" frameworks, including the alignment of technical standards, enhanced customs collaboration, and the establishment of digital commerce systems, which collectively lower barriers for small and medium-sized enterprises to engage in international trade. These efforts help to disrupt the entrenched pattern of dominant actors consolidating advantages, thereby enabling broader and more equitable access to economic opportunities.

In essence, the BRI's emphasis on infrastructure-led development clearly reflects its commitment to fostering inclusive economic advancement. Through the creation of integrated transportation, logistics, and communication systems, the initiative enables landlocked and less-developed areas to connect with international markets, reducing trade-related obstacles and lowering entry thresholds for broader participation. This approach facilitates regional economic integration and enhances social mobility. Illustrative cases, including the China–Europe overland rail network, demonstrate that infrastructure serves not only as a foundational element for economic expansion but also as a key mechanism for promoting institutional equity and developmental justice. Looking ahead, as the BRI evolves from focusing on "hard" infrastructure to strengthening "soft connectivity" and ultimately fostering "people-to-people bonds," its role in shaping a more inclusive and balanced global economic framework is expected to grow substantially.

The Belt and Road Initiative (BRI) offers a unique platform for promoting inclusive growth by addressing one of the most persistent constraints faced by developing regions: inadequate infrastructure. Through the construction of

transportation networks, energy systems, digital connectivity, and logistics corridors, the BRI helps reduce geographic and structural barriers to market access, thereby enabling broader segments of the population—particularly in remote and underdeveloped areas—to participate in economic activities. This expansion of connectivity facilitates trade, lowers transaction costs, and attracts investment, laying the foundation for more equitable economic participation.

Unlike traditional aid frameworks that often focus on short-term relief or sector-specific assistance, the BRI adopts a long-term, integrated approach to development. By aligning infrastructure improvement with industrial development and human capital investment, it creates the conditions necessary for sustained and inclusive economic transformation. Moreover, improved infrastructure contributes to spatial integration, helping to bridge urban–rural divides and balance regional disparities.

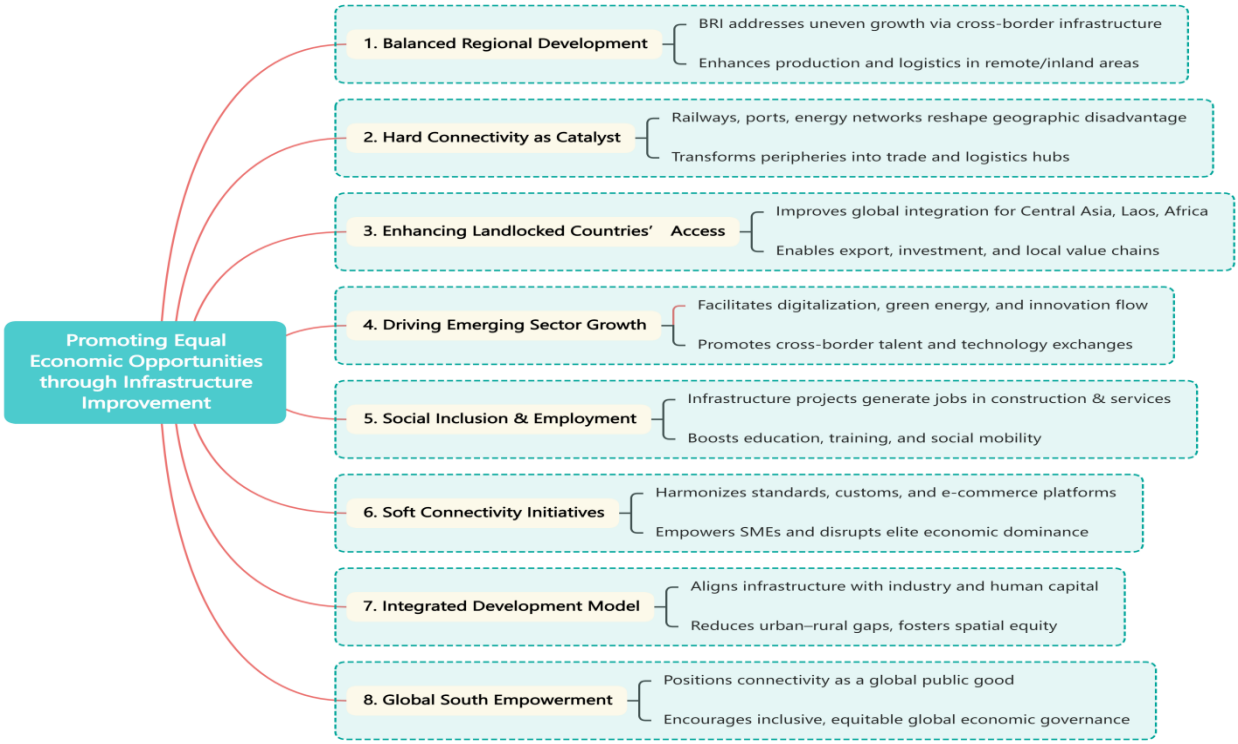

Fig.3.6.BRI: Infrastructure for Inclusive Growth

Source:[Author]

While challenges such as debt sustainability and governance capacity remain, the potential of the BRI to serve as a catalyst for inclusive growth is increasingly acknowledged. Its emphasis on connectivity as a public good underscores a shift toward a development model that prioritizes equal opportunity and shared benefits,

reflecting an evolving vision of global economic governance that is more responsive to the needs of the Global South (see fig. 3.6).

Advancing Social Inclusiveness in Education, Employment, and Healthcare. The BRI has achieved notable advancements in enhancing global connectivity, extending beyond "hard connectivity" such as infrastructure development and trade investment, to encompass the realm of "soft connectivity"—notably in education, employment, and healthcare collaboration. These sectors constitute the social underpinnings of economic progress and have a direct influence on individuals' sense of fulfillment and overall well-being, thereby playing a critical role in realizing the BRI's vision of inclusive development. Through a variety of cooperative initiatives—including scholarships, vocational skills programs, and healthcare assistance—China has advanced socially oriented engagement across Global South nations, particularly in underdeveloped parts of Africa and Asia, delivering substantial contributions to the strengthening of social infrastructure and the upliftment of local living conditions.

Firstly, in the area of educational collaboration, China has consistently offered a range of scholarship initiatives targeted at nations participating in the BRI. Funding schemes such as the Chinese Government Scholarship and the Silk Road Program provide financial support for students originating from developing regions to pursue higher education in China, including undergraduate, postgraduate, and doctoral studies. These initiatives not only cover tuition, housing, living expenses, and healthcare, but also encourage students to study the Chinese language and gain deeper insights into China's socio-political context, thereby strengthening cross-cultural understanding and exchanges between China and partner nations [32].

Secondly, technical education and workforce development constitute important elements of the "soft connectivity" framework linking China with its partner nations. In Ethiopia, China has supported the establishment and operation of multiple technical and vocational institutions, including the Addis Ababa Sino-Ethiopian Technical and Vocational College, which offers hands-on training in key sectors such as electrical engineering, mechanical fabrication, and construction. These centers provide both specialized curricula and modern training facilities, while also engaging Chinese

experts as instructors, aligning with the specific demands of local economic advancement to foster a skilled labor force.

In addition, employment-centered cooperation has become a defining feature of numerous BRI initiatives. Major infrastructure undertakings—such as the China–Pakistan Economic Corridor and the railway linking Mombasa and Nairobi—have created substantial job opportunities for local populations throughout both the construction and operational stages. Chinese enterprises also offer on-site training programs, contributing to the enhancement of local labor force structures. For instance, in Kenya's Mombasa–Nairobi rail initiative, more than 80% of the construction workforce has consisted of local hires, with thousands receiving technical instruction directly from Chinese engineering teams.

The healthcare sector also serves as a key illustration of the social inclusiveness promoted by the Belt and Road Initiative. Through the "Healthy Silk Road" program, China actively contributes to advancing public health in its partner countries by deploying medical teams, constructing healthcare facilities, providing pharmaceutical donations, and offering medical training. For example, China has consistently dispatched medical personnel to Africa and currently operates resident medical institutions in nations such as Zimbabwe, Rwanda, and Niger, delivering a wide range of services, including obstetrics, internal medicine, acupuncture, and other traditional Chinese medical practices.

These "soft connectivity" initiatives have resulted in significant social spillover effects. Simultaneously, in order to foster both economic growth and social equity within the Belt and Road framework, as well as to create a broad development agenda focused on social justice and improving living standards, efforts in Global South countries have bolstered the reputation and impact of these initiatives.

The Belt and Road Initiative's commitment to social inclusiveness, particularly its focus on resource utilization for employment generation, has gradually become a defining feature of this development model, setting it apart from other multilateral cooperation frameworks. In particular, the Belt and Road's focus on education,

employment, and healthcare is one of the most distinguishing characteristics of its foreign cooperation efforts.

The Belt and Road Initiative is gradually expanding its connotation of inclusive growth, with social inclusion becoming one of the key directions. In the fields of education, employment and health care, the initiative aims to enhance the host country's ability to provide public services by building schools, vocational training centers and medical facilities, especially benefiting remote and vulnerable groups. Through joint education, skills transfer and health cooperation between China and foreign countries, the BRI helps promote human capital accumulation and basic health protection, thereby enhancing the overall well-being and sense of participation of society. This development model emphasizes equal opportunities and social integration, and promotes the construction of a more just and inclusive global development governance structure (see fig. 3.7).

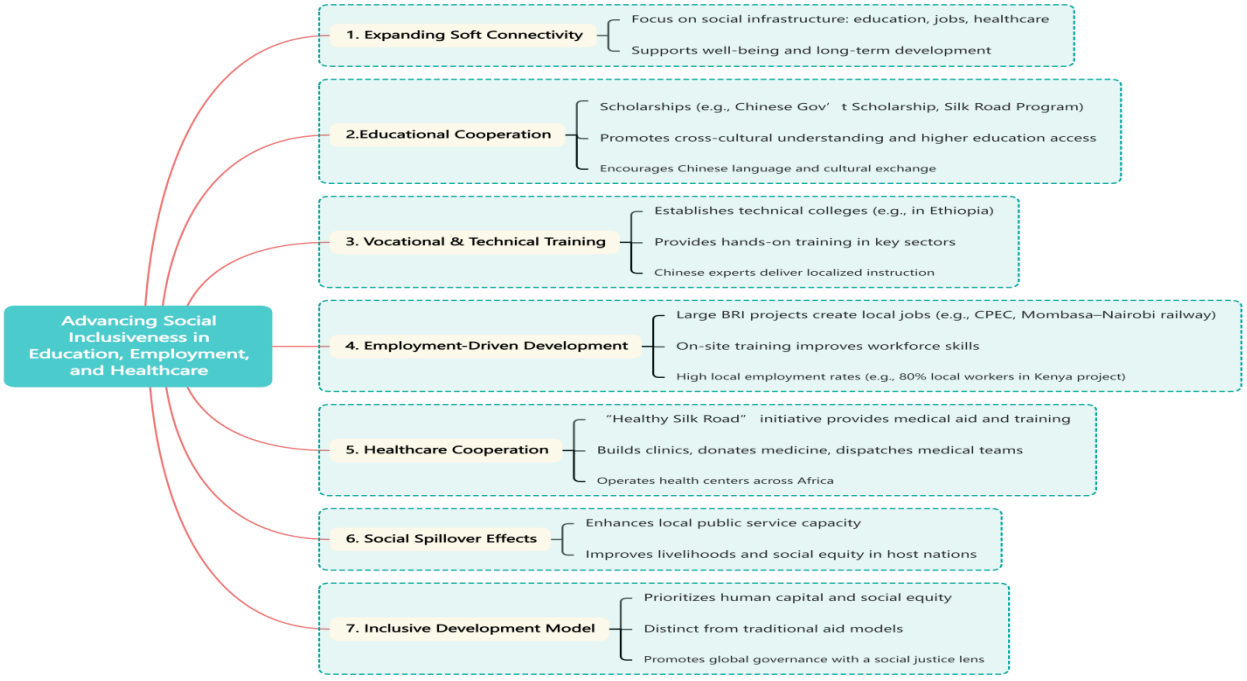

Fig.3.7. BRI Advancing Social Inclusion

Source:[Author]

Promoting Environmental Inclusiveness through Green Infrastructure. As the Belt and Road Initiative (BRI) evolves from its initial phase of connectivity-centered development to a more comprehensive model, environmental inclusiveness has emerged as a critical dimension of its future trajectory. Green infrastructure—

encompassing renewable energy, sustainable transport, ecological restoration, and climate-resilient urban planning—plays a pivotal role in advancing an environmentally inclusive growth agenda. By integrating ecological considerations into large-scale infrastructure planning, the BRI moves beyond traditional growth paradigms that often externalize environmental costs.

This approach is particularly relevant to partner countries in the Global South, many of which face acute vulnerability to climate change while lacking sufficient institutional capacity to pursue green transitions independently. Through technology transfer, environmental governance cooperation, and capacity-building programs, the BRI provides these countries with access to greener development pathways. Furthermore, the incorporation of green finance instruments—such as green bonds and ESG-aligned investment frameworks—helps align developmental goals with environmental sustainability.

Importantly, environmental inclusiveness under the BRI is not only about mitigating ecological degradation but also about ensuring that marginalized communities, often disproportionately affected by environmental risks, are included in the benefits of sustainable development. In this regard, the BRI demonstrates potential to redefine global infrastructure standards by embedding environmental justice and long-term ecological resilience into the architecture of international cooperation.

The BRI, as a key strategy for China to advance global connectivity and foster shared development, not only prioritizes economic growth and infrastructure development but also places significant emphasis on environmental sustainability and ecological preservation. As the challenges of global climate change continue to intensify, the "inclusiveness" of environmental considerations has become a critical metric for assessing whether an international development initiative can achieve sustainable progress. China’s vision of establishing the "Green Silk Road" represents a strategic shift in the BRI’s development approach, moving towards ecological civilization by leveraging green infrastructure, renewable energy, and sustainable finance as central elements to drive an environmentally conscious and resource-

efficient development trajectory, offering a novel framework for green transformation along the corridor.

The primary goal of the "Green Silk Road" is to incorporate the principles of ecological civilization throughout the entire Belt and Road construction process. In 2015, the BRI Environmental Protection Cooperation Plan was officially launched. This initiative is in line with the environmental protection targets outlined in the United Nations' 2030 Agenda for Sustainable Development, demonstrating China's role and dedication as a participant in global environmental governance.

Regarding renewable energy cooperation, the "Green Silk Road" has yielded tangible outcomes. China actively partners with nations along the route to implement renewable energy projects such as wind, solar, and hydroelectric power, assisting them in reducing their dependence on fossil fuels and increasing the green proportion of their energy portfolios. For instance, in Pakistan, Chinese firms have established several solar and wind energy projects, including the Karot Solar Power Station in Punjab and the Joint Wind Farm in Sindh, supplying reliable and clean electricity to local communities and alleviating energy shortages [68]. In Africa, China has made significant investments in building hydroelectric power stations and solar panel factories in countries like Kenya and Ethiopia. These initiatives have not only helped reduce energy costs but also played a key role in generating numerous green employment opportunities for local residents.

Environmental infrastructure development is a vital aspect of the "Green Silk Road." In numerous developing nations, facilities for ecological governance, such as wastewater treatment, waste segregation, and water management, are often inadequate, contributing to escalating environmental challenges. While Chinese firms are spearheading major infrastructure initiatives, they also prioritize incorporating green principles into both the design and construction phases. For instance, during the expansion of Hambantota Port in Sri Lanka, which was supported by China, green construction standards were implemented, including systems for rainwater recycling and shore power supply equipment to reduce emissions from vessels. In Cambodia, environmental projects along the Mekong River focus on river management and

biodiversity preservation, exemplifying a cooperative approach to green infrastructure that is "customized to local needs".

At the same time, the growth of green finance mechanisms has become a crucial pillar of the "Green Silk Road." In advancing the financing of green initiatives, China promotes the creation of multilateral green investment platforms and encourages financial entities such as the Asian Infrastructure Investment Bank (AIIB) and the Silk Road Fund to prioritize support for green projects. In 2021, China formalized the Green Investment Principles (GIP) with over 30 countries, clearly incorporating environmental and social risk assessment frameworks into Belt and Road initiatives. These frameworks not only offer sustainable financing pathways for green projects but also bolster international investors' confidence in the green evolution of the Belt and Road [71]. For instance, the Sahiwal Coal Power Plant project in Pakistan, funded by the Silk Road Fund, utilizes conventional energy sources but ensures compliance with international environmental standards through the installation of desulfurization and denitrification equipment and ash recovery systems, earning recognition as "one of the cleanest coal-fired power plants".

China is also fostering international collaboration and the local adaptation of BRI green standards and environmental technologies. In areas such as ecological conservation, smart grids, and low-carbon transportation, China partners with global organizations like the United Nations Development Programme (UNDP) and the United Nations Environment Programme (UNEP) to implement capacity-building initiatives, offering technology transfer and training programs to developing nations. Regarding institutional development, China advocates for green evaluation and Environmental Impact Assessment (EIA) frameworks, encouraging various BRI projects to integrate sustainability metrics from the very beginning, ensuring minimal ecological disruption.

In conclusion, the "inclusiveness of the environmental aspect has become a key feature of the BRI's sustainable development. The "Green Silk Road" is systematically structured to promote the growth of green infrastructure, clean energy cooperation, green financial mechanisms, and environmental technology exchanges on a global

scale. It fosters the adoption of green energy and eco-friendly technologies, guiding nations towards more sustainable, low-carbon, and energy-efficient development. The "Green Silk Road" is expected to play a significant role in the global ecological governance system, supporting a new, more balanced, inclusive, and environmentally conscious development model, as the concept of ecological civilization deepens and national development mechanisms align with these goals [66](see fig. 3.8).

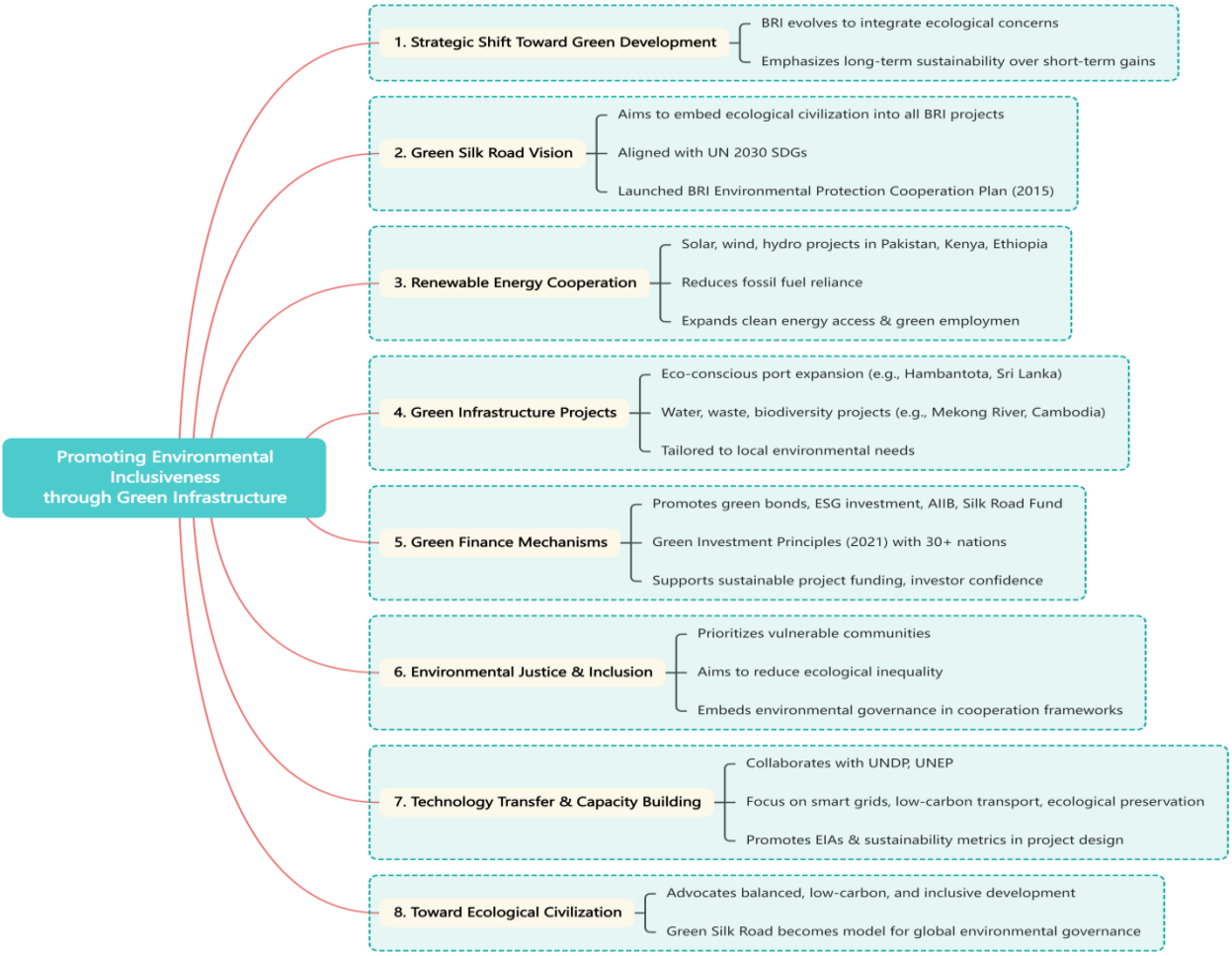

Fig.3.8. Inclusive Growth through Green Infrastructure

Source:[Author]

Enhancing Inclusiveness and Growth Potential of the Digital Economy. In the process of deepening and expanding the BRI across multiple dimensions and fields, digital cooperation has become an essential component of global connectivity in the new era. The Digital Silk Road (Digital Silk Road, DSR), as a key sub-topic under the Belt and Road Initiative, focuses on information and communication technology (ICT) infrastructure construction, digital service cooperation, and digital economy

governance. It aims to bridge the "digital access disparity" for countries in the Global South and promote the sharing and inclusive growth of digital technologies. Against the backdrop of digital technology increasingly becoming the "infrastructure" of economic and social development, China is helping many underdeveloped or landlocked countries connect the "last mile" of their digital economic development through cross-border fiber optic cable construction, 5G network deployment, and cloud computing center development, thereby reshaping their future growth potential and global participation capabilities.At the same time, the application of AI technology is gradually covering key livelihood areas such as education, medical care, and agriculture, effectively expanding the accessibility of basic services. This type of cooperation model not only improves local innovation capabilities and employment quality, but also provides a diverse path for global digital governance, demonstrating the realistic possibility of inclusive growth under technology empowerment.

By investing and building digital infrastructure on a large scale, China is helping countries along the Belt and Road to break down digital barriers and achieve leapfrog development in network connectivity, information security and data flow.This effort includes the deployment of fiber-optic networks, expansion of mobile broadband coverage, and the establishment of data centers and smart city technologies. These initiatives are not only improving the overall quality and accessibility of network connectivity, but also contributing to the development of secure information systems and smoother cross-border data flows. In many developing regions, such advancements enable a leapfrog effect—bypassing traditional stages of technological development and accelerating integration into the global digital economy. Moreover, by fostering cooperation in areas such as e-commerce, digital finance, and cybersecurity, China’s efforts are helping partner countries enhance their digital governance capacity and economic resilience. This digital Silk Road initiative, as a crucial component of the broader Belt and Road framework, is playing a transformative role in driving inclusive innovation, promoting technological empowerment, and building a more interconnected and equitable global digital landscape.

Since the implementation of the "the Belt and Road" initiative, the informatization level of participating countries has been greatly improved. The big data industry chain linked to the world has provided very convenient services for the international economic development between regions.It is obvious from Table 6 that practice has proved that this approach is correct.The industry and informatization development index of the countries jointly building the "the Belt and Road" shows that from 2015 to 2022, almost all countries have significantly improved their industry and informatization, Singapore is far ahead, emerging countries such as Türkiye, Albania, India have shown a strong momentum of development, and Mongolia, Egypt, Northern Macedonia and other countries have more room for development. This also shows that in the context of the "Digital Silk Road", the comprehensive strength of the digital economy of the countries jointly building the "the Belt and Road" is constantly improving [67].

On the one hand, Chinese firms are actively engaging in the development of cross-border information infrastructure, including laying undersea cables, erecting communication towers, and constructing data centers. These initiatives have substantially enhanced data transmission capacity and network coverage in the relevant regions, improving internet access speed and reliability. For example, in the Middle East and East Africa, Chinese telecommunications companies such as Huawei and ZTE are advancing the roll-out of 5G networks and data centers in nations like the UAE, Saudi Arabia, Kenya, and Tanzania. In Kenya, Huawei contributed to the establishment of the national data center and the National Broadband Network, thereby strengthening local government operations and laying the groundwork for the digital transformation of private enterprises. In Ethiopia, multinational cable projects involving Chinese companies connect landlocked countries to the East African coast, addressing the long-standing issue of "information isolation" and enabling smoother access to international network resources for numerous small and medium-sized enterprises and telemedicine services.

On the other hand, China is actively collaborating with countries along the Belt and Road on emerging technologies such as cloud computing, big data, the Internet of

Things, and artificial intelligence. For instance, Chinese companies are involved in developing "smart city" projects in the Middle East, which not only include 5G network infrastructure but also incorporate urban security, smart transportation, and energy management systems. The Dubai Smart City initiative in the UAE has seen partial implementation by Chinese firms. China's "digital expertise" and "technical solutions" offer cost-efficiency and scalability, making them appealing to governments in many developing nations. At the same time, such cooperation enhances the technological capabilities and local digital economic development of these countries, fostering the localized growth and advancement of digital infrastructure.

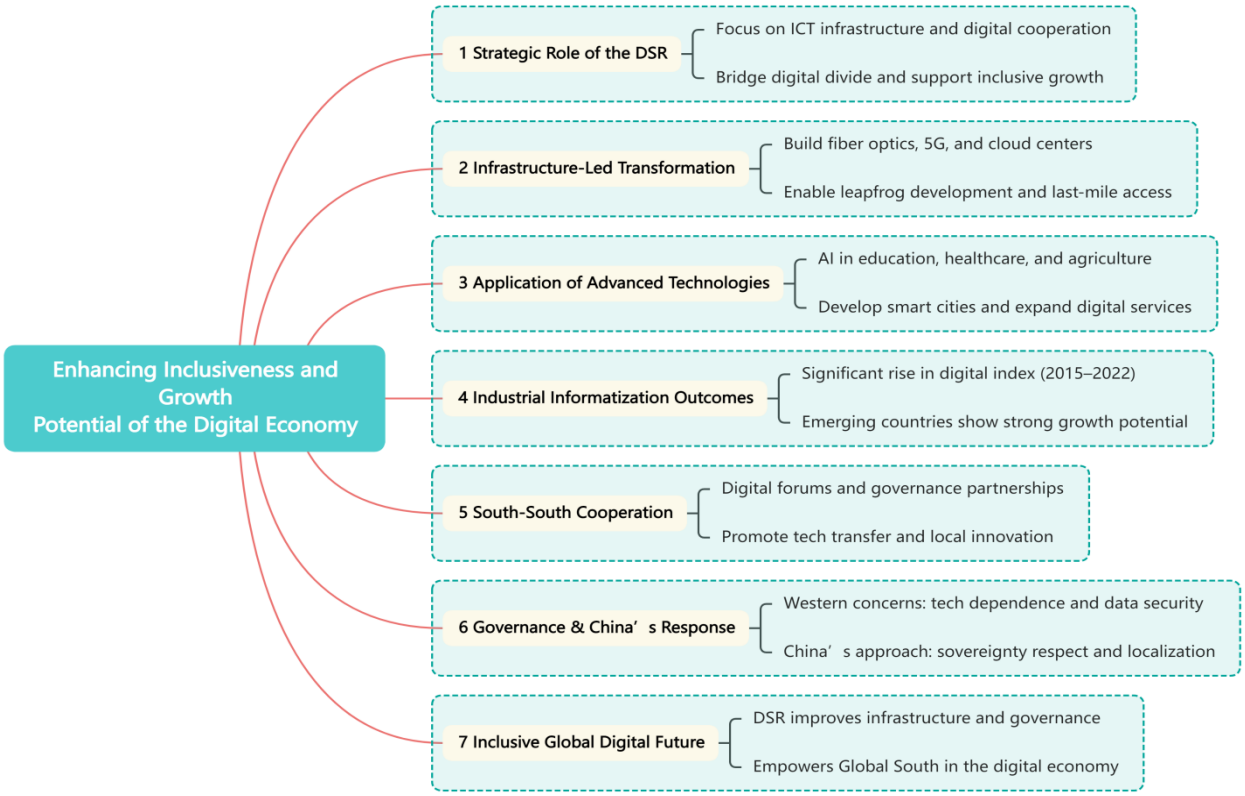

Fig.3.9. BRI and the Inclusive Digital Economy

Source:[Author]

It is important to highlight that the "Digital Silk Road" has also facilitated service improvements in social sectors such as digital education and healthcare, generating widespread inclusive effects. In education, China has partnered with countries in Southeast Asia, Central Asia, and Africa to develop online education platforms, advancing initiatives like "cloud classrooms" and "digital textbooks," enabling students

in remote regions to access quality educational resources. In healthcare, through the use of 5G technology and telemedicine platforms, some Chinese hospitals have initiated remote diagnostic collaborations with nations such as Pakistan and Nigeria, enabling cross-border sharing of medical resources. The development of this "soft infrastructure" not only increases the accessibility of public services but also significantly promotes digital equity. Furthermore, China has fostered digital cooperation and knowledge exchange among South-South countries through forums like the "Digital Silk Road Cooperation Forum" and the "World Internet Conference," encouraging regional digital collaboration(see fig. 3.9).

However, the development of the Digital Silk Road faces several challenges and concerns, especially from Western countries regarding "technological dependence," "information security," and "digital dominance," which is one of the key issues. Some countries are worried that China may gain excessive control over the development of digital infrastructure, potentially threatening national security and data sovereignty. To enhance the sustainability and trust in cooperation, China consistently emphasizes the collaborative nature of the Digital Silk Road, highlighting respect for the independent decisions of partner countries and promoting "local operations" and "local talent development".

The "Digital Silk Road," as a crucial extension of the BRI, fosters inclusive development across various areas such as technology transfer, social services, and digital governance. By bridging the "digital gap," it enables developing countries to achieve a new phase of digital leapfrogging, potentially creating an innovative pathway for South-South cooperation in the global digital economy. Moving forward, the "Digital Silk Road" will play an increasingly vital role in global development strategies, becoming a key force in the process of inclusive globalization.

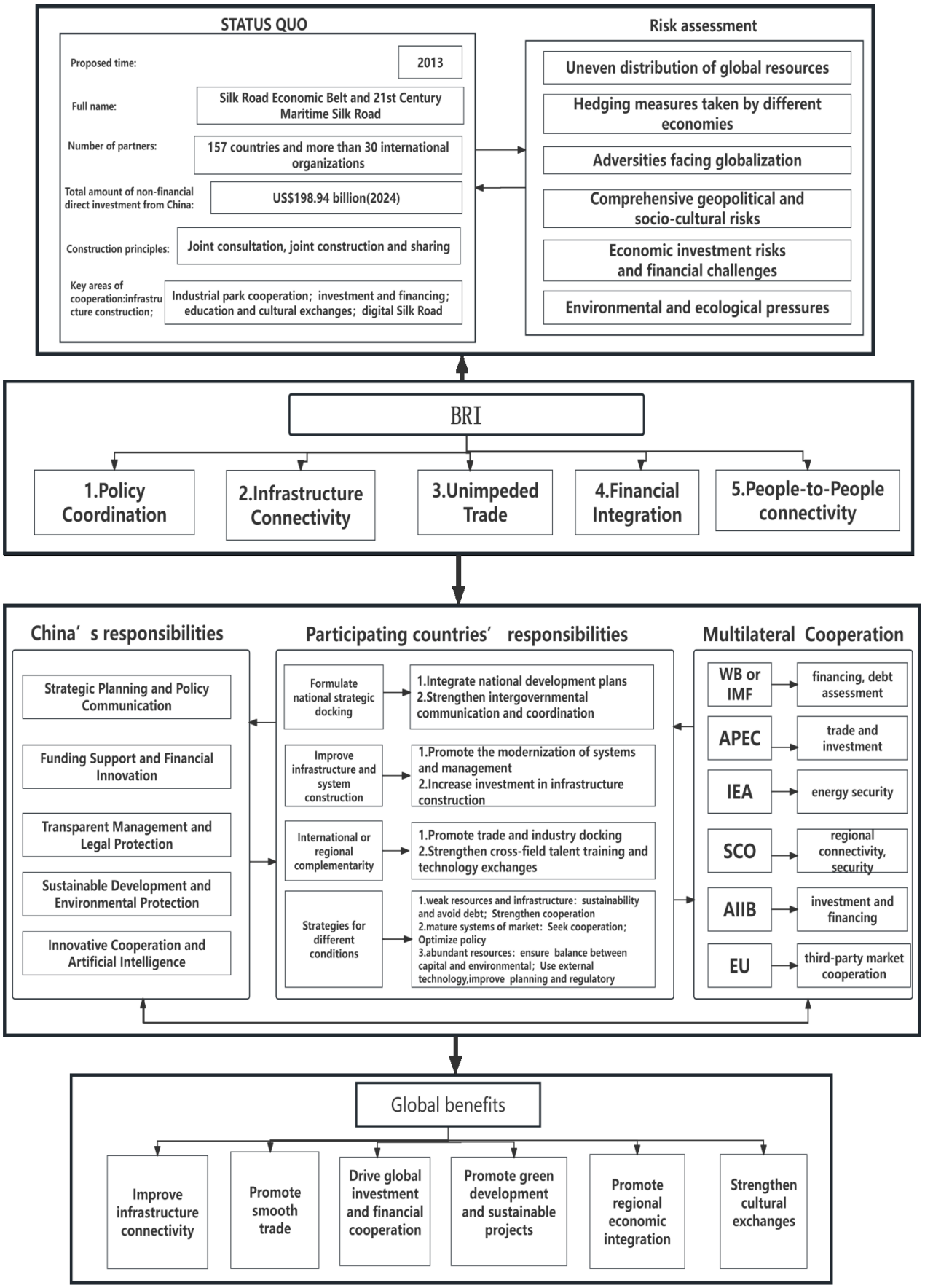

Fig.3.10 Framework and Global Cooperation Mechanism of the BRI

Source: [Author]

The pursuit of global inclusive growth by the People's Republic of China reflects both strategic vision and practical engagement. Throughout this dissertation, the BRI has been analyzed as a multidimensional framework that transcends traditional geopolitical and economic paradigms, positioning itself as a hybrid model that integrates infrastructure connectivity, financial cooperation, trade liberalization, and socio-cultural exchange. The underlying principle of inclusive development, grounded in China's domestic experience and extended through multilateral mechanisms, affirms the Initiative's broader ambition to serve as a platform for equitable globalization(see fig. 3.10).

More importantly, as an institutional innovation in China's opening-up pattern, the Belt and Road Initiative provides a possible path to break the development trap by empowering underrepresented developing countries, especially the global South. It goes beyond the "blood transfusion" development logic in the traditional aid model and turns to "hematopoietic" capacity building as the core, emphasizing local participation, knowledge sharing and policy coordination, thereby strengthening the independent development capabilities of developing countries. This strategic shift marks that a more inclusive, sustainable and institutionally resilient global cooperation model is gradually taking shape.

From the perspective of global development governance, the Belt and Road Initiative is not only China's response to the evolution of the international order, but also reflects China's active assumption of responsibility for the supply of global public goods. Therefore, the Belt and Road Initiative is not only an innovative practice of the development model, but also a reshaping and reconstruction of the concept of global development governance. Looking ahead, with the continuous improvement of the initiative mechanism and the continuous accumulation of practical experience, the connotation of its inclusive development strategy will be further enriched, and its international influence and institutional appeal will also be increasingly enhanced.

Conclusions to chapter 3

This chapter investigates the strategic role the Belt and Road Initiative (BRI) plays in reshaping global governance amid an evolving international landscape. It explores how the BRI fosters competition in institutional standards and expands governance networks, especially within the Global South, contributing to the rise of diverse governance approaches beyond traditional Western models. This signals a shift towards more flexible frameworks that better respond to the priorities of emerging economies.

Looking ahead, the chapter outlines several key directions for the BRI's development. Strengthening multilateral cooperation and enhancing alignment in governance stand out as essential for improving coordination among participant countries. The pursuit of green development is emphasized, including the establishment of ecological standards to address environmental concerns tied to infrastructure projects. Managing fiscal sustainability, particularly through innovative debt management, emerges as another pressing challenge. The chapter also stresses the importance of fostering localization efforts and fair benefit-sharing mechanisms to ensure inclusive gains. The Digital Silk Road is highlighted as a critical avenue for advancing technology and data governance, which will support digital transformation across the BRI network. These efforts collectively aim to promote sustainable and inclusive growth, crucial for the Initiative's long-term success.

The chapter further delves into the future of inclusive growth within the BRI framework, focusing on economic, social, and environmental dimensions. Improved infrastructure connectivity is viewed as vital for expanding equitable economic opportunities by facilitating trade and investment flows. Social inclusion is addressed through enhanced access to education, employment, and healthcare, seeking to narrow disparities and boost human development. Environmental inclusiveness involves promoting green infrastructure projects that prioritize ecological sustainability. The growing role of the digital economy is also examined, with an emphasis on how increased digital access can unlock new growth potentials in BRI countries.

In summary, this chapter offers a comprehensive and forward-looking analysis of the BRI's strategic impact and prospective development. It highlights the necessity for adaptable governance structures, environmental responsibility, prudent financial management, and social equity as foundational elements for transforming the BRI into a resilient and inclusive platform that meaningfully advances global sustainable development in the years to come.

The main scientific results were published in the following scientific articles:29; 51;54;91;99;177;178;179;180;181.

CONCLUSIONS

1.Inclusive growth theory provides a comprehensive framework that balances economic efficiency with social equity and environmental stewardship. It highlights the importance of not only expanding economic output but also ensuring fair income distribution, equal access to opportunities, and protection of the environment. Within the BRI context, this theory is critical to understanding how development projects can be designed to reduce poverty, bridge regional disparities, and promote sustainability. The multidimensional approach helps policymakers ensure that economic benefits do not come at the cost of social exclusion or environmental degradation, making inclusive growth a guiding principle for sustainable development under the BRI.

2.The BRI presents an innovative globalization model focused on cooperation, mutual benefit, and sustainable development. Unlike traditional development paradigms often marked by unilateral gains and competition, the BRI promotes shared prosperity through collaborative partnerships and cross-border connectivity. This model encourages countries to work together on infrastructure, trade facilitation, and institutional cooperation, fostering regional integration and economic complementarities. By aligning development efforts with inclusive growth goals, the BRI supports the creation of new economic opportunities while addressing social and environmental concerns, offering a practical blueprint for 21st-century globalization grounded in cooperation rather than competition.

3.The proposal of the Belt and Road Initiative (BRI) is rooted in the evolution of inclusive growth theory and the complex historical background of globalization. It promotes economic corridors that function as crucial arteries for trade, investment, and connectivity, creating new centers of economic activity and growth opportunities. These corridors reflect shifting international power dynamics and economic alliances, illustrating how infrastructure and connectivity can serve as strategic tools for regional cooperation. By linking Asia, Europe, Africa, and beyond, the BRI not only facilitates physical integration but also enhances political and economic ties among countries, thus reshaping the patterns of globalization and fostering a more interconnected and multipolar world order.

4.China’s inclusive development strategy under the BRI emphasizes the integration of poverty alleviation, environmental protection, and economic transformation. Drawing on its own experience, China promotes policies that reduce inequality while fostering green growth and innovation. This multidimensional model combines social equity with economic modernization and environmental sustainability, reflecting China’s commitment to responsible international development. Through targeted investments in infrastructure, social programs, and ecological conservation, China aims to create development projects that benefit local populations and contribute to global sustainable development, thereby enhancing the credibility and effectiveness of the BRI on the international stage.

5.Countries participating in the BRI have varied development contexts, necessitating tailored cooperation approaches. Central Asian nations prioritize energy exports and transport corridors to integrate with global markets. Southeast Asian countries focus on deepening regional trade and economic linkages. African partners face infrastructure deficits that limit economic growth, while European countries adopt strategic caution, emphasizing regulatory standards and investment security. These differences require flexible, context-specific strategies to maximize benefits and promote inclusive growth. Regression analysis further illustrates that variations in trade volume with China have a measurable impact on human development levels across regions, reinforcing the need for differentiated approaches,it ensures that development gains are equitable and sustainable across regions.

6.The BRI confronts multiple challenges that threaten its sustainability and effectiveness. Global resource imbalances create competitive pressures, while geopolitical tensions, such as conflicts and sanctions, pose risks to project stability. Financial vulnerabilities, including debt sustainability and currency fluctuations, demand prudent risk management. Additionally, environmental concerns necessitate robust ecological safeguards to prevent degradation. Addressing these challenges requires adaptive governance frameworks capable of mitigating risks through cooperation and innovation. Strengthening transparency, accountability, and

stakeholder engagement is essential for building trust and resilience, ensuring that the BRI remains a viable and impactful initiative amid complex global uncertainties.

7.The BRI significantly influences global governance by challenging dominant institutional norms and expanding regional governance networks, particularly in the Global South. It fosters alternative governance models that better accommodate the interests and circumstances of developing countries, promoting greater inclusiveness in international decision-making. This shift enhances multilateral cooperation, capacity-building, and policy coordination, enabling countries to implement inclusive growth strategies more effectively. By reshaping global governance architectures, the BRI contributes to diversifying global leadership and promoting fairer international economic relations, thus supporting a more balanced landscape.

8.Future development of the BRI must prioritize sustainability through green growth, ecological standards, and responsible fiscal management. Strengthening localization efforts and benefit-sharing frameworks will help ensure that economic gains are distributed fairly among communities. The Digital Silk Road, as a core component, promotes technological innovation and data governance, enhancing connectivity and economic inclusiveness in the digital age. These strategic priorities aim to bolster the BRI's resilience and maximize its developmental impact, aligning the initiative with global sustainability goals such as the Paris Agreement and the UN Sustainable Development Goals, thereby securing its long-term success and relevance.

9.Achieving inclusive growth within the BRI framework demands integrated efforts to expand economic opportunities via infrastructure development, enhance social inclusion in education and healthcare, and promote environmental sustainability. Expanding digital economy participation helps bridge gaps in technology access and fosters innovation, further supporting equitable development. These components collectively create a foundation for resilient and adaptive growth that can withstand global uncertainties. The BRI's ability to harmonize these elements will determine its effectiveness as a global development platform, enabling participating countries to achieve sustainable prosperity and contribute meaningfully to global development agendas.

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ANNEXES

List of Practical Cooperation Projects

of the Third Belt and Road Forum for International Cooperation

(Total 369 items)

I. Bilateral cooperation documents

1. The Chinese government signed a memorandum of understanding on jointly building the Belt and Road with Honduras, and signed cooperation plans or action plans on jointly building the Belt and Road with the governments of Argentina, Mauritania, Georgia, Serbia, Egypt and other countries.
2. The Communist Party of China and the Lao People's Revolutionary Party signed an action plan on building a China-Laos community with a shared future (2024-2028).
3. The Chinese government and the Cambodian government signed an action plan on building a China-Cambodia community with a shared future in the new era (2024-2028).
4. The Chinese government and the Hungarian government signed a list of priority cooperation projects for jointly building the Belt and Road (second round).
5. The Chinese government signed a memorandum of understanding on strengthening cooperation in the transit of China-Europe trains through Iran with the Iranian government, and signed a memorandum of understanding on deepening the development of international routes for China-Europe trains across the Caspian Sea with the Kazakhstan government.
6. The Chinese government signed an agreement with the Argentine government to extend the validity period of the strategic dialogue mechanism on economic cooperation and coordination between the two governments, and signed an agreement with the Kazakhstan government to develop the cross-Caspian international transport route of the China-Europe Express.
7. The Chinese government signed cooperation documents on scientific and technological innovation with the governments of Honduras, Indonesia, the United Arab Emirates and other countries.
8. The Chinese government signed international road transport agreements with the governments of Kazakhstan, Mongolia and other countries, and signed a five-year action plan (2023-2027) on deepening highway technology cooperation with the Pakistani government.
9. The Chinese government signed a free trade agreement and an arrangement for early harvest of the agreement with the Nicaraguan government, a free trade agreement with the governments of Ecuador, Serbia and other countries, a service trade and investment agreement with the Belarusian government, and a memorandum of understanding on investment cooperation in the fields of green development and digital economy with the Turkmenistan government.
10. 10. The Chinese government signed an economic and technical cooperation agreement with the Kazakhstan government, and a memorandum of understanding on cooperation in the field of renewable energy with the Uzbek government.
11. 11. China's National Supervisory Commission signed cooperation documents in the field of anti-corruption with the General Audit Office of Cuba, the Administrative Supervision Office of Egypt, the Cambodian Anti-Corruption Commission, the Indonesian Anti-Corruption Commission, and the Malaysian Anti-Corruption Commission.
12. 12. China's National Development and Reform Commission signed a memorandum of understanding with the Ministry of Finance and National Planning of Zambia to jointly accelerate the preparation of the cooperation plan for the joint construction of the "Belt and Road", signed a memorandum of understanding with the Ministry of Planning, Development and Special Missions of Pakistan to establish an expert exchange mechanism under the

framework of the China-Pakistan Economic Corridor, and signed a memorandum of understanding with the Ministry of Economy of Serbia on conducting exchanges and cooperation in the field of economic development policies.

13. 13. China's National Development and Reform Commission signed a memorandum of understanding with the Development Council of the Kingdom of Cambodia to jointly promote the third round of key projects of China-Cambodia capacity and investment cooperation, and signed a framework plan for cooperation in key areas from 2023 to 2025 with the Ministry of Development of Greece.

    14. China's National Development and Reform Commission signed documents on strengthening industrial investment cooperation with the Ministry of Economy of Azerbaijan, the Ministry of Economy, Finance and Foreign Trade of the People's Power of Venezuela, the Ministry of Foreign Affairs and Foreign Economic Affairs of Hungary, the Ministry of Economy of Serbia, and relevant departments of Chile.

14. The Ministry of Science and Technology of China and the Ministry of Science, Technology and Innovation of Argentina signed a Memorandum of Understanding on Cooperation under the framework of the China-LAC Sustainable Food Innovation Center.
15. The Ministry of Industry and Information Technology of China signed cooperation documents in the fields of digital and information and communications with the Ministry of Information, Telecommunications and Digital Economy of Senegal, the Ministry of Digital Technologies of Uzbekistan, the Ministry of Posts and Telecommunications of Algeria, the Ministry of Communications Technologies of Tunisia, the Ministry of Communications and Information Technology of Iran, and the Ministry of Information and Communications Technologies of the Philippines.
16. The Ministry of Industry and Information Technology of China signed a memorandum of understanding on cooperation with the Ministry of Economic Development of Hungary and a memorandum of understanding on industrial cooperation with the Ministry of Industry of Indonesia.
17. The Ministry of Ecology and Environment of China signed cooperation documents in the fields of environmental protection, sustainable development, and climate change with the Ministry of Environment of Iran, the Ministry of Natural Resources and Environmental Protection of Belarus, and the Ministry of Planning, Development and Special Missions of Pakistan.
18. The Ministry of Transport of China signed a memorandum of understanding on deepening international road transport cooperation with the Ministry of Transport of Tajikistan, a memorandum of understanding on future travel cooperation with the Ministry of Transport of Singapore, and a protocol on the international road transport agreement between the two countries with the Ministry of Transport and Development of Mongolia.
19. The Ministry of Commerce of China signed a memorandum of understanding on the establishment of a trade facilitation working group with the Ministry of Foreign Affairs, International Trade and Worship of Argentina and the Ministry of Development, Industry and Trade of Nicaragua, a memorandum of understanding on the establishment of an investment and economic cooperation working group with the Ministry of Foreign Affairs of Uruguay, a memorandum of understanding on cooperation in free zones and economic zones with the Kuwait Direct Investment Promotion Agency, and a memorandum of understanding on strengthening trade promotion cooperation with the Ministry of Industry, Mines and Trade of Iran.
20. The Ministry of Commerce of China signed a memorandum of understanding on e-commerce cooperation with the Department of Trade and Industry of the Philippines and the Coordinating Ministry of Economic Affairs of Indonesia, a memorandum of understanding on deepening blue economy cooperation with the Ministry of Environment, National Beautification, Blue and Green Economy of Barbados, a memorandum of understanding on investment cooperation in the field of green development with the Development Council of the Kingdom of

Cambodia, and a framework agreement on promoting investment cooperation in new energy power with the Ministry of Electricity of South Africa.

21. The Ministry of Commerce of China and the Ministry of Trade and Industry of Singapore signed a memorandum of understanding on announcing the substantial completion of follow-up negotiations on the upgrade of the Free Trade Agreement between the two countries, signed a memorandum of understanding on the launch of negotiations on the Free Trade Agreement between the two countries with the Ministry of Domestic and Foreign Trade of Serbia, and signed a memorandum of understanding on the progress of negotiations on the Service Trade and Investment Agreement between the two countries with the Ministry of Economy of Belarus.
22. The People's Bank of China signed a memorandum of cooperation on RMB clearing arrangements with the National Bank of Serbia, a memorandum of understanding on strengthening digital currency cooperation with the Central Bank of the United Arab Emirates, and a memorandum of understanding on cooperation with the Central Bank of Indonesia.
23. The National Development and Reform Commission of China, the People's Government of Shenzhen City, Guangdong Province, and the Coordinating Ministry for Maritime Affairs and Investment of Indonesia and the New Capital Administration of Nusantara signed a memorandum of understanding on the exchange of experience and cooperation in the planning of the new capital of Indonesia. The Ministry of Commerce of China, the People's Government of Fujian Province, and the Coordinating Ministry for Maritime Affairs and Investment of Indonesia signed a memorandum of understanding on deepening the cooperation in the construction of the "Two Countries, Two Parks" between China and Indonesia.
24. The National Development and Reform Commission of China and the Hong Kong Monetary Authority signed a memorandum of understanding on supporting cross-border financing of Chinese enterprises and promoting the development of the Hong Kong bond market.
25. The National Health Commission of China signed a memorandum of understanding on cooperation in the field of health with the health departments of Saudi Arabia, Oman, Mongolia, Laos, Cambodia and other countries.
26. The National Energy Administration of China signed cooperation documents with the Ministry of Energy of Kazakhstan and the Ministry of Energy of Azerbaijan, and signed a memorandum of understanding on cooperation in the field of renewable energy with the Ministry of Energy and Mines of Cuba.
27. The State Administration for Market Regulation of China signed a memorandum of understanding on cooperation in the field of competition with the Venezuelan Agency for the Promotion and Protection of Free Competition. The Standardization Administration of China signed a memorandum of understanding on cooperation with the National Institute of Standardization and Metrology of Kazakhstan.
28. The State Administration of Traditional Chinese Medicine of China signed a cooperation plan on traditional Chinese medicine with the Ministry of Health of Singapore (2023-2027).
29. China Central Radio and Television signed cooperation documents with official media of Egypt, Pakistan, Myanmar and other countries participating in the construction of the Belt and Road Initiative.
30. China Export and Credit Insurance Corporation signed a memorandum of understanding on cooperation with the Ministry of Finance of Serbia, the Indonesian National Electricity Company, Alsaka Bank of Uzbekistan and the Development Bank of Kazakhstan.
31. Bank of China signed a memorandum of cooperation on digital currency with First Abu Dhabi Bank and a memorandum of global strategic cooperation with Saudi International Electricity and Water Company. Industrial and Commercial Bank of China signed a memorandum of understanding on cooperation with the Ministry of Economic Development of Hungary.

II. Documents on cooperation with international and regional organizations

1. The Chinese government and the World Intellectual Property Organization renewed the Agreement on Strengthening Intellectual Property Cooperation under the Belt and Road Initiative and its extension and supplementary agreement.
2. The Chinese government and ASEAN reached a mid-term review report on further deepening the economic and trade cooperation work plan.
3. 3. The Ministry of Transport of China and the United Nations signed a memorandum of understanding on promoting sustainable transportation and promoting sustainable development goals.
4. 4. The National Development and Reform Commission of China signed a memorandum of understanding on cooperation in jointly building the Belt and Road Initiative with the International Bamboo and Rattan Organization and the Global Energy Internet Organization.
5. 5. The State Administration for Market Regulation of China and the United Nations Industrial Development Organization signed a project document on strengthening the capacity of Chinese food inspection and testing institutions and enhancing trust in the Belt and Road Initiative trade.
6. 6. The Ministry of Ecology and Environment of China, the China Meteorological Administration and the World Meteorological Organization signed a cooperation agreement to support the United Nations Universal Early Warning Initiative.
7. 7. The Ministry of Water Resources of China, the National Standardization Administration and the United Nations Industrial Development Organization signed a memorandum of understanding on cooperation to jointly promote rural sustainable development based on international standards for small hydropower.
8. 8. China National Standardization Administration and African Committee for Electrotechnical Standardization signed a memorandum of understanding on cooperation.
9. 9. China Export-Import Bank and United Nations Industrial Development Organization signed a memorandum of understanding on cooperation.
10. 10. World Tourism Cities Federation and Asia Pacific Tourism Association signed a memorandum of understanding on cooperation.

III. Bilateral cooperation platforms, cooperation projects initiated by China and mechanisms

1. Establish a "Belt and Road" enterprise integrity and compliance evaluation system.
2. Establish a China-Central Asian Five Countries Transport Ministers' Meeting Mechanism and a China-Cambodia Railway Cooperation Working Mechanism, and launch the China-Europe Express Portal.
3. Establish a China-Central Asia e-commerce cooperation dialogue mechanism.
4. Establish a "Belt and Road" financial capacity building platform, and establish the "Belt and Road" Green Investment Principles Africa and Southeast Asia Regional Office.
5. Establish a China-Central Asia investment and financing cooperation platform, cooperate with the Hong Kong Monetary Authority to establish a "Belt and Road" joint investment platform, and cooperate with the Indonesian National Investment Authority to establish a China-Indonesia joint investment and financing platform.
6. Establish a low-carbon service partnership for the Belt and Road Initiative, launch the Central Asian regional green technology development action plan, establish a China-ASEAN mangrove protection partnership, and establish the China-Arab International Research Center for Drought, Desertification and Land Degradation Prevention.
7. Launch the implementation of the Belt and Road Initiative Sustainable Development Technology Special Cooperation Plan, the Belt and Road Initiative Sustainable Development Science Action Plan, the Belt and Road Initiative Science and Technology Poverty Reduction Special Cooperation Plan, and the Belt and Road Initiative Space Information Technology Special Cooperation Plan.

8. Launch the implementation of the Belt and Road Initiative Legal Service Talent Training Plan, and carry out the construction of a comprehensive platform for legal services for the Belt and Road Initiative. Establish a training base for Chinese and foreign international legal talents, and initiate the establishment of a China-Africa Civil International Commercial Mediation Center.
9. Launch the implementation of the Belt and Road Initiative Film and Television Program Joint Screening Plan, carry out the Belt and Road Initiative New Vision Global Short Video Results Collection Activity, and establish the Silk Road "News Hotline".
10. Launch the implementation of the Belt and Road Initiative Innovation and Entrepreneurship Special Cooperation Plan, the Belt and Road Initiative Teacher Development Plan, and carry out the Belt and Road Initiative Youth Maker Camp and Teacher Seminar.
11. Held the 17th meeting of the China-Venezuela High-level Joint Committee. The Special Joint Committee on the 10th Anniversary of the China-Pakistan Economic Corridor and the 12th Joint Committee were held.
12. The Second Belt and Road China-Laos Cooperation Forum, the Third China-Thailand Think Tank Forum - 10th Anniversary of the Belt and Road: China-Thailand Comprehensive Strategic Partnership for Sustainable Development, and the China-Argentina Roundtable Dialogue on the Joint Construction of the Belt and Road Cooperation.
13. A cross-border sustainable development service cooperation platform for enterprises was established, and a comprehensive service base for Chinese enterprises to "go global" was built. The International Commercial Dispute Prevention and Resolution Organization issued investment arbitration rules.
14. The Yangtze River Delta Belt and Road High-quality Development Association was established, the Anhui Province Belt and Road International Capacity Cooperation Demonstration Zone was built, and Shenzhen and Singapore smart city cooperation was carried out.
15. The Belt and Road International Geoscience Education and Training Center and the Belt and Road National Meteorological Training Center were established.
16. The 2023 China-ASEAN Education Exchange Week was held, and a platform for promoting cultural exchanges and educational cooperation among Arab countries in the joint construction of the Belt and Road was established. The Chongqing Municipal People's Government and the Moscow Tchaikovsky Conservatory of Music carried out music education cooperation.
17. Establish a China-Pakistan Joint Laboratory for Small Hydropower Technology “Belt and Road”, a China-Indonesia Joint Laboratory for Marine Sciences, and a China-Belarus International Innovation Center.

IV. Institutional arrangements proposed by China

1. China Development Bank established a RMB 350 billion financing window for the Belt and Road Initiative.
2. China Export-Import Bank established a RMB 350 billion financing window for the Belt and Road Initiative.
3. The Silk Road Fund added RMB 80 billion in new funds to support the Belt and Road Initiative projects in a commercial and market-oriented manner.

V. Cooperation projects

1. The Chinese government and the Kuwaiti government signed a memorandum of understanding on cooperation in the Greater Mubarak Port project, and jointly launched the China-Vietnam Basar Red River Boundary Highway Bridge project with the Vietnamese government.
2. The Chinese government and the Ethiopian government signed an exchange of notes on the approval of the supporting projects of the Addis Ababa-Djibouti Railway, and signed an exchange of notes on the approval of the wind power plant project in Uzbekistan with the Uzbek government.

3. The National Development and Reform Commission of China and the Ministry of Planning and Investment of Laos signed a memorandum of understanding on the development cooperation plan along the China-Laos Railway.
4. China Development Bank signed a RMB loan project contract with Malaysia's Maybank, carried out a RMB credit (Phase II) project with the Central Bank of Egypt, carried out a comprehensive credit project with Peru's BBVA Bank, and carried out a special loan project for African SMEs with the African Export-Import Bank and the Bank of Egypt. Implemented the sovereign credit project of the Republic of Senegal (Dakar Viaduct and Niayes Highway Expansion Project).
5. China Export-Import Bank signed a RMB working capital loan project agreement with Saudi National Bank, a US dollar working capital loan agreement with the African Finance Corporation, a cooperation framework agreement with the Indonesian National Investment Authority, and a loan agreement for infrastructure construction projects such as roads, bridges and reservoirs with Cambodia.
6. China Export-Import Bank signed the "Memorandum of Understanding between the Regional Credit Guarantee and Investment Fund and the China-ASEAN Investment Cooperation Fund Phase II", and promoted the China-ASEAN Investment Cooperation Fund Phase II to participate in the partial equity acquisition project of the geothermal energy subsidiary of the Indonesian National Oil Company.
7. The Silk Road Fund participated in the African Infrastructure Investment Fund Phase IV under the South African Old Mutual Insurance Group and the Kyrgyzstan Highland Capital Phase II Fund Project.
8. China International Development Cooperation Agency, State Forestry and Grassland Administration, Ministry of Economic Development and State Forestry Administration of Mongolia signed a framework agreement to support Mongolia's "One Billion Trees" plan and carry out cooperation in desertification prevention and control between China and Mongolia.
9. Assist Egypt in issuing the first "Panda Bond" in Africa. Bank of China issued the world's first batch of green bonds with the theme of "Belt and Road". Industrial and Commercial Bank of China issued RMB 10 billion green financial bonds and global multi-currency "carbon neutrality" themed green bonds, and participated in the US$2.5 billion green syndicated loan project of Abu Dhabi Holding Company.
10. Support the financing of Malaysia's East Coast Railway Project. Participate in the construction of Nigeria's Kaduna-Kano Railway Project and Ganqimaodu-Gashunsuhaitu Port Cross-Border Railway Project.
11. Construct the King Salman International Port Complex Project in Saudi Arabia and support the financing of Peru's Chancay Port Project.
12. Support the financing of Kenya's Nairobi Expressway Project and Ecuador's Central Access Channel Project. Signed a loan agreement with Guyana for the Demorara East Coast Road Phase II project. Constructed the Dhaka Airport Elevated Expressway Project and the Dhaka Ring Expressway Project in Bangladesh, the Valjevo Expressway Project in Serbia, and carried out the Lahore Rail Transit Orange Line (ALL TOWN to DERA GUJRAN) operation and maintenance service project in Pakistan.
13. Constructed the Gwadar New International Airport Project in Pakistan and the Siem Reap Angkor International Airport Project in Cambodia.
11. 14.Signed a preferential loan project for the Phoenix Industrial Park with Trinidad and Tobago, and invested in the Zambia Jiangxi Economic Cooperation Zone and the Liqin Indonesia OBI Industrial Park Project. Promoted the "One Road and Two Parks" project between Hunan and Laos, and the China-Philippines Economic and Trade Innovation Development Demonstration Park.
14. Supported the cross-border project financing of the Malaysia-China Kuantan International Logistics Industrial Park. Constructed the East African Trade and Logistics Industrial Park Comprehensive Service Cooperation Zone in

Tanzania, and built an overseas warehouse for the China-Europe Express in Mongolia. Carry out logistics channel and international trade strategic cooperation projects with Kyrgyzstan, build Aktau Port container hub project in Kazakhstan, and implement the "green channel" project for rapid customs clearance of agricultural and sideline products for Central Asian countries. Implement the "Air Silk Road" China-Malaysia air cargo hub project and promote the China-ASEAN (Hainan) cruise tourism interconnection demonstration project.

15. Support the financing of the 500 MW and 500 MW wind power projects in Bashi and Zankerdi, Uzbekistan, the 200 MW photovoltaic and 500 MW energy storage projects in Tashkent, Oman's Manah II photovoltaic power generation project, and the 1.5 GW solar photovoltaic power station project in Abu Dhabi. Build a 750 MW photovoltaic project in Iraq, a 154 MW photovoltaic project in Latshti, Romania, and a 51 MW photovoltaic project in Resko, Poland. Sign a loan agreement for the 25 MW solar photovoltaic and 5 MW energy storage power station project in Kaya, Burkina Faso.
16. Signed a technical agreement with Nigeria for the Niger River Management Project. Signed a loan agreement with Cambodia for the Baidalong Bassa River Bridge and connecting road project, signed a loan agreement with Indonesia for the Genarata Dam project, and signed a loan agreement with Madagascar for the Hanumafana Hydropower Project. Signed a financing agreement with Serbia for the Novi Sad Cross-Danube Bridge and Connecting Line Project, and signed a financing agreement with the Philippines for the Pasig River Bridge Project.
17. Carried out China-Sri Lanka and China-Malaysia QR code network interconnection projects. Build the Solomon Islands National Broadband Network Project and the Cambodia Rural Power Grid Expansion Phase 8 Project, support Serbia Telecom's ALL-IP Fixed Network Modernization Phase 3 Project, and South Africa Telecom's 2023 Network Construction Project Financing.

19. Signed a package of cooperation agreements for investment in Guinea's Simandou Iron Ore Project. Invest in the Phase II project of Kamoa Copper-Cobalt Mine in the Democratic Republic of the Congo, invest in the Kululi Potash Mine Project in Eritrea, invest in the Bakuta Tungsten Mine Project in Kazakhstan, and invest in the 3Q Lithium Salt Lake Project and the Cauchari-olaroz Lithium Salt Lake Development Project in Argentina. Invest in the Gulei 1.5 million tons/year ethylene cracking and downstream derivative production unit project in Fujian, invest in the nickel-cobalt hydroxide hydroprocessing project with an annual output of 120,000 tons of nickel metal and 15,000 tons of cobalt metal, the annual output of 50,000 tons of lithium hydroxide and 10,000 tons of lithium carbonate, and the annual output of 126,000 tons of nickel metal production line and supporting facilities in Indonesia.

12. Support the financing of a series of car carrier projects exported to Singapore. Build the Hulhumale Auto Parts City Project in the Maldives and the Chaoyang Langma Tire Project (Phase II) in Pakistan.

20. CIC invests in Southeast Asian biofuel projects and South African fruit and vegetable preservation projects.

21. Implement the partial equity acquisition project of Singapore Hesheng Agriculture and the Tanzanian contract farming project.

22. Carry out infrastructure livelihood and trade supply chain projects in Ghana, Kenya, Angola and other countries, and participate in the Keat Hong government housing project in Singapore. Build the Red Sea public infrastructure project in Saudi Arabia, and the Ferlo area development and ecosystem improvement project in Senegal. Sign a loan agreement with Uzbekistan for the Asian Youth Games Olympic City Construction Section 1 and 2 project, and sign a loan agreement with Bangladesh for the Rajshahi surface water treatment plant project.

23. Invest in power battery manufacturing projects in Hungary and solar panel and cell production line projects in Vietnam. Implement the Angel Yeast (Egypt) yeast product expansion project.

VI. People's Livelihood and People-to-People Connection Projects

1. China will implement 1,000 small-scale livelihood assistance projects.
2. China will provide 20,000 places for study and seminars in China and 500 places for in-service degree education, and continue to implement the Silk Road Youth Scholars Funding Program, the "Belt and Road" Youth Elite Program and the "Dream Silk Road" Youth Development Program.
3. Launch and implement the “Belt and Road” Ecological and Environmental Protection Talent Exchange Plan and the South-South Cooperation “African Light Belt” Project on Climate Change. Organize a South-South Cooperation Training Course on Climate Change and launch the “Green Silk Road Tour” international communication activity.
4. Organize the “Belt and Road” National Anti-Corruption Training Course, launch the second phase of the “Belt and Road” Rule of Law Cooperation Training Project and launch the third phase of the project. Establish a Sustainable Investment Capacity Building Alliance and hold the “Belt and Road” Bank Supervision Seminar.
5. Implement the “Small and Beautiful” International Mutual Recognition Cooperation Project for Quality Certification. Establish the “Belt and Road” People-to-People Bonding Public Welfare Fund and launch the “Silk Road Heart-to-Heart Bonding” Action Plan. Implement the “Silk Road Love Village” assistance project in Sri Lanka and other countries, and implement the International Love Package Project in Nepal, Ethiopia, Myanmar, Cambodia, Laos, Burundi and other countries.
6. Organize the “Belt and Road” Traditional Chinese Medicine and Acupuncture Style Tour in Ethiopia and other countries. Mobile surgical vehicle activities were held in Laos and other countries, Health Express International Light Journey activities were held in Uzbekistan, Kyrgyzstan and other countries, and international living water actions were implemented in Nepal and other countries. The "Belt and Road, People-to-People Connectivity" China-ASEAN Heart-to-Heart Activities and ASEAN Children with Congenital Heart Disease Screening and Treatment Action were implemented.
7. China's National Development and Reform Commission and the African Union jointly carried out capacity building cooperation with Africa, jointly implemented the "Belt and Road" economic reform and transformation development cooperation project with Zimbabwe, and jointly implemented industrialization vocational training projects with Indonesia and built a medicinal plant protection research and innovation base.
8. China's State Administration of Taxation issued the "Belt and Road" Tax Collection and Management Capacity Promotion Alliance Course System, and provided 10,000 training opportunities for fiscal and taxation officials of the countries participating in the construction of the "Belt and Road" in the next five years.
9. The Lancang-Mekong Sweet Spring Action was launched, and practical cooperation on rural water supply technology demonstration was carried out with relevant countries, and the Mohananda Rubber Dam Project was assisted in the construction of the Southeast Asian Marine Environment Forecast System.
10. The Southeast Asian Marine Environment Forecast System was established. The China-Island States Ocean Cooperation Forum was held, and the China-Island States Ocean Disaster Prevention and Mitigation Cooperation Plan was jointly formulated.
11. The certificates for the Gwadar desalination plant project in Pakistan and the satellite assembly, integration and testing center project in Egypt were handed over, and the exchange of notes on the project approval for the Serbia National Data Center project was signed. The Kenya Sagana-Marua (A2) Highway Project was implemented.
12. The exchange of notes on the project approval for the Laos refined oil project was signed, and the Cambodian King's Working Group material project was announced. The handover certificates for the emergency food aid project were provided to Mozambique, Chad, Lesotho, Zimbabwe and Mali.
13. The school uniform fabric material assistance was announced to Sri Lanka, and the certificate for the project for the Nasetong Middle School in Vientiane, Laos was handed over. The project for the Laos Railway Vocational and

Technical College, the Vientiane Piwa Middle School project, and the Luang Prabang Peace Middle School clean drinking water project were implemented. The operation of Luban Workshop in Kazakhstan was continued.

14. China and Ethiopia signed the exchange of notes on the project approval for the senior agricultural expert technical assistance project. Continue to carry out cooperation in the promotion of Juncao technology in Rwanda, Papua New Guinea, Fiji and other countries, promote perennial rice technology in Uganda and other countries, and implement the East Asian Poverty Reduction Demonstration Cooperation Technical Assistance Project in Laos. Carry out agricultural technology research and promotion cooperation, water-saving irrigation research and promotion cooperation with Uzbekistan, and build a China-Indonesia Palm Garden Agricultural Mechanization Service Center in Indonesia.
15. Sign the exchange of notes on the establishment of the National Surgical Center Project in Mozambique and the Polio Vaccine Project in Pakistan. Hand over the certificate of the technical assistance project for Abdullah Mucai Hospital in Zanzibar, Tanzania. Build traditional Chinese medicine centers in Thailand and Cambodia. Implement the "Cataract Blindness Elimination Project" in Senegal.
16. Launch the implementation of the "Belt and Road" News Cooperation Alliance Short Video Sharing and Communication Plan, the "Belt and Road" TV and Radio Landing Communication Series Project, and carry out the large-scale integrated media report "A New Journey on the Silk Road" on the 10th anniversary of the "Belt and Road". Organize the "Belt and Road" themed screening of Chinese film and television programs, the "Belt and Road" audio-visual program mutual broadcasting activities, and the "Belt and Road" giant panda circle of friends series activities. Implement the cooperation project of the Golden Mango TV channel in Ghana, Africa.
13. 17.The State Administration of Cultural Heritage of China will carry out the cross-border joint application for the Maritime Silk Road, hold the "Maritime Silk Road Cultural Heritage Protection Roundtable", the "Belt and Road" cultural relics and archaeological cooperation exhibition, and form a "Belt and Road" cultural heritage protection results atlas. Implement the China-Saudi Arabia Sering Port joint archaeological project and the Natashwar Archaeological Site Park project in Bangladesh.
17. The General Administration of Sport of China will hold the "Belt and Road" martial arts training camp and the "Belt and Road" Shaanxi World Women's Chess Masters Summit.
18. Carry out the Dunhuang cultural international exchange and cooperation project and implement the project of jointly building the Chinese Cultural Center in Auckland, New Zealand.
19. China will carry out comprehensive marine science surveys and research in the Pacific-Indian Ocean, and promote modified clay technology to the countries participating in the construction of the "Belt and Road" to provide protection for the marine ecological security of relevant countries.
20. The Hong Kong SAR Government will continue to implement the Belt and Road Scholarship Programme, jointly produce variety television programmes with countries participating in the Belt and Road Initiative, and host the “Asian Arts Without Borders” Cultural Festival.

VII. Release of white papers and research reports

1. Release of "Jointly Building the Belt and Road: A Major Practice in Building a Community with a Shared Future for Mankind".
2. Release of "Vision and Actions for Unswervingly Promoting the High-quality Development of Jointly Building the Belt and Road - Prospects for the Development of Jointly Building the Belt and Road in the Next 10 Years".
3. Release of "Green Silk Road Development Report (2023)".
4. Release of "Innovative Silk Road Development Report".
5. Release of "China's Belt and Road Trade and Investment Development Report 2013-2023".

6. Release of "High-quality Development Report on the Construction of the "Air Silk Road" (2023)".
7. Release of "Jointly Building the Belt and Road" People-to-People Connectivity Development Report".
8. Release of "Jointly Building the Belt and Road" International Cooperation Development Report in the Field of Traditional Chinese Medicine (2023).
9. Release of "China-ASEAN Countries Jointly Building the Belt and Road" Development Report".
10. Release the Development Report on the Joint Construction of the Belt and Road Initiative between China and African Countries.
11. Release the Development Report on the Joint Construction of the Belt and Road Initiative between China and Latin America and the Caribbean.
12. Release the Development Report on the Belt and Road Initiative - Practice and Theoretical Exploration of Global Common Development.
13. Release the Debt Sustainability Analysis Framework for the Belt and Road Initiative for Market-Financed Countries.
14. Release the Trade Index between China and the Belt and Road Initiative Countries.
15. Release the Innovative Concepts and Practice Cases of the 10th Anniversary of the Green Belt and Road Initiative.
16. Release the Research Report on the Practice of Green Finance in the Belt and Road Initiative.
17. Release the Best Practices of Financial Support for Belt and Road Initiative Projects.
18. Release the Blue Paper on Emergency Management in the Belt and Road Initiative.
19. Release the White Paper on Cultural Heritage Protection in the Belt and Road Initiative.
20. Release the White Paper on Digitalization of Shipping and Trade and Innovation in Cooperation in the Belt and Road Initiative.
21. Release the White Paper on the Joint Construction of the Belt and Road Initiative by Chinese Listed Companies in 2023.
22. Release of the “One Belt, One Road” International Metrology Cooperation Case Study Collection”.
23. Release of the “One Belt, One Road” National Disaster Assessment Report.
24. The “One Belt, One Road” Innovation and Development Center released the “2030 Innovation and Development Flagship Report”.
25. Release of the “One Belt, One Road” 10th Anniversary Standardization Achievement Report”.
26. Release of the “One Belt, One Road” Green Development Outlook Report.
27. Release of the “One Belt, One Road” International Think Tank Report.
28. The Development Research Center of the State Council of China will co-author the “One Belt, One Road and Shared Development” Report with members of the Silk Road International Think Tank Network.
29. Release of the “China Export-Import Bank’s 10th Anniversary Report on Supporting the Joint Construction of the “One Belt, One Road”.
30. Release of the “One Belt, One Road” Corporate Public Welfare Action Case Study Collection.
31. Release the “Belt and Road Infrastructure Development Index (2023)” and the “Portuguese-speaking Countries Infrastructure Development Index Report and Macao’s Participation in the Belt and Road Initiative Achievement Report (2023)”.

14. Issued by: Central People's Government of the People's Republic of China ； October 18, 2023;

Translator: Author

Belt and Road Initiative: Key Events Categorized

1.Policy Dimension

Date	Event	Description
Sep 2013	Proposal of Silk Road Economic Belt	President Xi Jinping proposed the idea in Kazakhstan.
Oct 2013	Proposal of 21st Century Maritime Silk Road	Announced during Xi's speech at the Indonesian parliament.
Mar 2015	Guidelines for Promoting BRI	First top-level policy document for BRI.
Apr 2019	2nd Belt and Road Forum	Highlighted high-quality development of BRI.
Oct 2023	3rd Belt and Road Forum	Introduced the 'Beijing Initiative' and key policy documents.
2022	China-Central Asia Leaders' Meeting Mechanism	Strengthened regional policy coordination.
2024	Optimization of Multilateral Mechanisms	Aligned with RCEP, SCO, and African Union frameworks.

2.Financial Dimension

Date	Event	Description
2014	Silk Road Fund Established	Initial capital of $40 billion to support projects.
Dec 2015	Asian Infrastructure Investment Bank (AIIB) Founded	Focused on infrastructure investment.
2017	Silk Road Fund Expanded	Added RMB 100 billion to financing capacity.
2019	Green Investment Principles Launched	Promoted sustainable finance under BRI.
Since 2020	Post-COVID Health Silk Road Funding	Focused on medical aid and system strengthening.
2021	Launch of Digital Silk Road Investment	Advanced digital finance and fintech cooperation.

3.Infrastructure & Transport Dimension

Date	Event	Description
2016	Yiwu-Madrid China-Europe Freight Train Opened	Established land bridge between China and Europe.
2017	Construction of China-Laos Railway Began	Key project of Pan-Asia Railway Network.
Dec 2021	China-Laos Railway Inaugurated	Symbolic BRI infrastructure project.
2022	Progress on Hungary-Serbia Railway	Flagship project in Central and Eastern Europe.
Oct 2023	Jakarta-Bandung High-Speed Railway Launched	China's first overseas high-speed rail project.
2024	Expansion of Silk Road Maritime Routes	Extended reach of China-Europe freight trains.

4.People-to-People Dimension

Date	Event	Description
2016	Silk Road International School Alliance Founded	Promoted educational and cultural exchange.
2017	Silk Road Book Project Initiated	Enhanced cooperation in publishing.
2018	Expansion of BRI Scholarships	Included students from many participating countries.
Since 2020	Health Silk Road Amid COVID-19	Promoted international health cooperation.
2021	Digital Silk Road Cultural Pilot Program	Built platforms for online education and telemedicine.
2023	Civilization Dialogue Forum under BRI Held	Encouraged intercultural dialogue.
2024	Youth Silk Road Ambassadors Upgraded	Supported youth exchange and volunteer service.

Source: Author's compilation

JIU No. 17 from April 28, 2025

To the specialized scientific council
Western Ukrainian National University

CERTIFICATE
on using the results of qualification work of
Wang Yongshun

We hereby confirm that Jiuquan Yuanda Agriculture Co., Ltd., a leading company in the cultivation of high-quality seeds with a high reputation in the agricultural field, has referred to and applied Mr. Wang Yongshun's research results on "One Belt One Road Initiative as a Global Inclusive Growth Strategy of the PRC".

Under the guidance of Doctor of Economic Sciences, Prof. Roman Zvarych, Wang Yongshun integrated his doctoral research results and the current situation of China's agricultural development to actually guide the practice of the "Belt and Road" initiative. Jiuquan Yuanda Agriculture Co., Ltd. draws on Mr. Wang Yongshun's relevant research results, especially focusing on how high-quality breeding in the region can achieve new breakthroughs under the framework of the "Belt and Road".

The significance of this research is to provide strategic insights for agricultural enterprises to better participate in international cooperation, strengthen global food security, and build resilient supply chains, which are key elements in promoting the goals of the "Belt and Road" initiative.

The research results are being applied to the planning and development strategy of Jiuquan Yuanda Agriculture Co., Ltd., supporting us to strengthen international cooperation in the field of agriculture and promote high-quality development in accordance with the vision of the "Belt and Road" initiative.

Sincerely!

Legal Representative
Jiuquan Yuanda Agriculture Co., Ltd.

JIU No. 27 Dated: April 27, 2025

To the Specialized Scientific Council
Western National University

CERTIFICATE

on the Use of Qualification Work Results of

NAME

We hereby certify that Wang Yongshun's qualification work on the topic of "One Belt One Road Initiative as a Global Inclusive Growth Strategy of the PRC" have been referenced and applied by the School of Marxism of our university in academic research and course development.

Under the careful supervision of Prof. Roman Zvarych, Doctor of Economic Sciences, Wang Yongshun has devoted himself to an in-depth and systematic study of the implementation of the BRI, focusing on its role in global governance, regional cooperation, and educational exchange. He has closely integrated theoretical research with practical educational work, emphasizing the BRI as an internationally influential initiative proposed by China.

This research contributes significantly to promoting the understanding of China's contemporary role in international interconnectivity. It supports the advancement of our university's BRI-related research and will be incorporated into the teaching of relevant courses. Additionally, the study provides valuable references for how local governments, enterprises, and institutions in China can better respond to global economic fluctuations and contribute to the practical implementation of the BRI.

We would also like to express our sincere gratitude to Professor Roman Zvarych's guidance and valuable academic support throughout Wang Yongshun's research work. His mentorship has been essential to the successful application of this study.

Sincerely,

Head of the School of Marxism
Jiuquan Vocational and Technical University