



## Research article

# The dynamic relationship among green logistics, technological innovation and green economy: Evidence from China

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## ABSTRACT

Under the background of “double carbon”, exploring the growth path of green logistics and enhancing the driving force of technological innovation is the urgent need of our country to comply with the green transformation of its economy and realize high-quality economic growth. Taking the panel data of 30 Chinese provinces from 2010 to 2020 as the sample, the green logistics index evaluation system is constructed based on the driver-pressure-state-impact-response (DPISR) theoretical framework, and the green economic efficiency of each province in the sample period is measured by using the non-expected output Super-Slacks-based measure (SBM) model, and by constructing the panel vector autoregressive (PVAR) model including technological innovation is used to systematically elaborate the dynamic influence paths among the three. The study found that: China's green economy, technological innovation, and green logistics all have their own mechanisms for growth, which will gradually diminish over time. In the near and long term, green logistics will promote technological innovations and the evolution of a green economy, but there is a lag in the long-term benefits of green logistics on technological progress. In the short term, technological innovation does not lend support to the growth of a green economy, but over time, the impact of technological innovation on the growth of that economy will shift from negative to positive. This shows that improving technological innovation capability is an important path for green logistics to promote green economic efficiency. The findings of the study provide a basis for decision making to achieve the emission reduction target and improve the efficiency of the green economy.

## 1. Introduction

All of humanity faces the challenge of climate change, and carbon neutrality has emerged as a key issue in the latest stage of the global technological and economic revolution [1]. At present, The Chinese economy has progressed to a high-quality development stage. To address resource and environmental constraints, achieve sustainable development, and promote economic structural transformation and modernization, we cannot do without the drive of “double carbon” [2]. The main strategy to reach peak carbon and carbon-neutral is going green and low-carbon, as it is a prerequisite for qualitative growth and integration of old as well as new dynamics [3]. China has actively addressed climate change and promoted a radical transformation of economic and social growth to a more environmentally friendliness type, and played a key role in global climate governance. Since the 18th National Congress of the Communist Party of China, The Communist Party of China Central Committee with Comrade Xi Jinping at its core has promptly

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# Technological Innovation For A Dynamic Economy

**AN Whitehead**



## **Technological Innovation For A Dynamic Economy:**

**Technological Innovation for a Dynamic Economy** Christopher T. Hill, James M. Utterback, 1979 *Handbook of the Economics of Innovation* Bronwyn H. Hall, Nathan Rosenberg, 2010-05-14 Economists examine the genesis of technological change and the ways we commercialize and diffuse it The economics of property rights and patents in addition to industry applications are also surveyed through literature reviews and predictions about fruitful research directions Two volumes available as a set or sold separately Expert articles consider the best ways to establish optimal incentives in technological progress Science and innovation both their theories and applications are examined at the intersections of the marketplace policy and social welfare Economists are only part of an audience that includes attorneys educators and anyone involved in new technologies *Economics of Technological Change* I J. Lesourne, H. Sonnenschein, Technology, Globalization, and Sustainable Development Nicholas A Ashford, Ralph P Hall, 2018-08-06 Technology Globalization and Sustainable Development offers a unified transdisciplinary approach for transforming the industrial state in order to promote sustainable development The authors present a deep analysis of the ways that industrial states both developed and developing are currently unsustainable and how economic and social welfare are related to the environment to public health and safety and to earning capacity and meaningful and rewarding employment The authors offer multipurpose solutions to the sustainability challenge that integrate industrial development employment technology environment national and international law trade finance and public and worker health and safety The authors present a compelling wake up call that warns of the collision course set between the current paths of continued growth and inevitable unsustainability in the world today Offering clear examples and real solutions this textbook illustrates how the driving forces that are currently promoting unsustainability can be refocused and redesigned to reverse course and improve the state of the world This book is essential reading for those teaching and studying sustainable development and the critical roles of the economy employment and the environment

**Economics and Technological Change** Rod Coombs, Paolo Saviotti, Vivien Walsh, 1987 An area of neglect in much of current economic theory has been its lack of attention to the impact of technological innovation on the structure and behavior of firms and the market This book is a comprehensive study of the economic implications of technological change for three primary institutions the firm the market and the civil sector

**Cooperation in Research and Development** Nicholas S. Vonortas, 2012-12-06 Cooperation in Research and Development provides an empirical and theoretical analysis of a distinct form of inter firm collaboration in Research Development R D research joint ventures RJVs Of all types of cooperation RJVs have received the most attention in both formal industrial organization and science and technology policy literature The emerging theoretical economic literature on incentives of firms to join RJVs has not been followed by much empirical work Cooperation in Research and Development attempts to fill the void caused by this lack of consistent data on the rate of RJV formation RJV characteristics and RJV member characteristics Significant attention is paid to the role of RJVs

in facilitating virtual firm diversification as necessary to pursue particular technological objectives An effort is also made to blend the reported theoretical and empirical analyses with conceptual models of the process of technological innovation and models of industrial evolution in order to provide answers beyond the reach of the received economic theory Cooperation in Research and Development should be of interest to academic economists policy makers and business representatives The microeconomic issues the book deals with overlap significantly with the interests of decision makers both in government and business     **Research and Experimentation Tax Credit** United States. Congress. House. Committee on Ways and Means. Subcommittee on Oversight,1985     **Science Indicators** ,1980     **Report of the National Science Board** ,

Handbook on Trade and the Environment Kevin Gallagher,2010-01-01 Handbook on Trade and the Environment is a good source for those looking for a better understanding of political issues of legal debates and of the state of discussion between government industry NGO and private sector groups on topics that are not often treated elsewhere Judith M Dean World Trade Review I would recommend the book to anyone concerned with the interaction of trade and the environment John Goodier Reference Reviews In this comprehensive reference work Kevin Gallagher has compiled a fresh and broad ranging collection of expert voices commenting on the interdisciplinary field of trade and the environment For over two decades policymakers and scholars have been struggling to understand the relationship between international trade in a globalizing world and its effects on the natural environment The authors in this Handbook provide the tools to do just that The editor s well worked introduction synthesizes the emerging themes of the collection which is divided into three sections trade and environmental quality trade and environmental politics and trade and environmental policy Topics include the extent to which trade liberalization creates pollution havens where dirty industries flock to poorer countries with lax environmental standards and conversely how multinational corporations bring cleaner environmental technologies to developing countries when they choose to move abroad The volume also addresses the extent to which national environmental policy and or global environmental agreements clash with the emerging rules of the World Trade Organization and whether such environmental policies hinder export competitiveness Finally numerous political economy analyses of the complex political coalitions that arise to adapt to and mitigate changes in trade and environmental policy are provided In addition to broader overviews of the field in depth case studies of nations and regions are offered including the United States the European Union China India and Mexico as well East Asia Latin America and Africa The volume will serve as a guide for scholars new to the field as well as students and policy makers needing a quick reference to the research on the interface between trade and the environment

This book delves into Technological Innovation For A Dynamic Economy. Technological Innovation For A Dynamic Economy is an essential topic that needs to be grasped by everyone, ranging from students and scholars to the general public. The book will furnish comprehensive and in-depth insights into Technological Innovation For A Dynamic Economy, encompassing both the fundamentals and more intricate discussions.

1. This book is structured into several chapters, namely:

- Chapter 1: Introduction to Technological Innovation For A Dynamic Economy
- Chapter 2: Essential Elements of Technological Innovation For A Dynamic Economy
- Chapter 3: Technological Innovation For A Dynamic Economy in Everyday Life
- Chapter 4: Technological Innovation For A Dynamic Economy in Specific Contexts
- Chapter 5: Conclusion

2. In chapter 1, the author will provide an overview of Technological Innovation For A Dynamic Economy. This chapter will explore what Technological Innovation For A Dynamic Economy is, why Technological Innovation For A Dynamic Economy is vital, and how to effectively learn about Technological Innovation For A Dynamic Economy.
3. In chapter 2, the author will delve into the foundational concepts of Technological Innovation For A Dynamic Economy. This chapter will elucidate the essential principles that must be understood to grasp Technological Innovation For A Dynamic Economy in its entirety.
4. In chapter 3, the author will examine the practical applications of Technological Innovation For A Dynamic Economy in daily life. This chapter will showcase real-world examples of how Technological Innovation For A Dynamic Economy can be effectively utilized in everyday scenarios.
5. In chapter 4, the author will scrutinize the relevance of Technological Innovation For A Dynamic Economy in specific contexts. The fourth chapter will explore how Technological Innovation For A Dynamic Economy is applied in specialized fields, such as education, business, and technology.
6. In chapter 5, the author will draw a conclusion about Technological Innovation For A Dynamic Economy. The final chapter will summarize the key points that have been discussed throughout the book.

This book is crafted in an easy-to-understand language and is complemented by engaging illustrations. This book is highly recommended for anyone seeking to gain a comprehensive understanding of Technological Innovation For A Dynamic Economy.

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