



## Editorial guide: Structural change in new structural economics

## 1. Introduction: Structural change from the perspective of the NSE

Modern economic growth is usually accompanied by sweeping structural changes in production, consumption, and institution, as documented in a sizeable literature. In retrospect, earlier thinking on economic development and structural transformation mostly takes optimal structures as exogenous, ignoring the endogeneity and heterogeneity of economic structures across countries at different stages of development. Negligence of these differences could mislead the policies, impede economic development, or even expedite growth failures in many developing countries (Lin, 2012; Lin and Wang, 2019). Taking into account the determinants and endogenous evolution of economic structures would therefore lead to sharper insights of the nature of economic development.

Yet the existing growth and development literature, by and large, abstract from the crucial structures and is far from a satisfactory general framework that features this complex and intertwined process. Literature in the past decades has devoted attention to the analysis of the structural changes from various aspects, including the seminal work of Baumol (1967) and more recent contributions by Kongsamut *et al.* (2001), Ngai and Pissarides (2007), etc. From either the “demand side” or the “supply side”, the driving forces behind structural change in these models are very useful in helping us better understand the reallocation across the three broad sectors (namely, agriculture, manufacture and service). Nevertheless, few studies have touched on the critical roles of endowment structure and micro-level firm viability, which deserve much more attention in terms of structural change. This is where the New Structural Economics embarks on a new wave.

New Structural Economics (NSE) is proposed by Professor Justin Yifu Lin. The NSE adopts the neoclassical economic approach and focuses on the determinants, dynamics, and implications of economic structures in the process of economic development. Given that economic development is a continuous process rather than a dichotomy between “poor” and “rich”, the NSE highlights the dynamic and endogenous features of various dimensions of economic structures. Meanwhile, the NSE advocates that successful industrial upgrading and economic development require both an efficient market and a facilitating government.

With regard to structural change, one of the key insights of the NSE is that an economy’s endowment structure determines its optimal economic structures, and the improvement of endowment structure serves as a fundamental mechanism that drives changes in the production structures, financial structures and other economic structures. Sustainable growth in developing countries could be achieved only when the industrial development follows the comparative advantage determined

by the endowment structures of the economy, as highlighted in the endowment-driven structural change model (Ju, Lin and Wang, 2015). In the recent years, a number of contributions have been made to illustrate the mechanisms emphasized by the NSE and to bridge the gap between the existing theoretical models and the rich empirical patterns.

## 2. The special issue: New evidences and new insights

This special issue brings together some of the recent researches considering structural change that are consistent with the perspectives of the NSE. In Table 1, we provide an overview of the five papers in this special issue, highlighting their focuses, methods and main results. The first two papers discuss the role of government and policies in the process of structural change, while the last three papers explore the determinants of endogenous structural change in the context of economic development.

### 2.1. The role of government

It has been long argued that sustainable economic growth depends critically on how the market and the government play their roles. From the viewpoint of the NSE, one of the main reasons for the failure of many developing countries in the post-war era was the fact that their governments attempted to defy the comparative advantage determined by their endowment structures and gave priority to development of capital-intensive industries when capital in their economies was scarce (Lin, 2009). Thus the NSE emphasizes that appropriate government facilitation based on the endowment structure is critical to continuous industrial upgrading and successful economic development. Governments should overcome the market failure by better coordinating private sectors through subsidies or taxation, at the mean time, provide the necessary infrastructure and institutional support in order to reduce transaction costs and incentivize firms to upgrade to the appropriate new industries.

Two papers in this special issue look at the role of government in the process of development and structural change. Chen and Lin (2021) provide both a theoretical model and empirical results to show that the government distortion is crucial in understanding the economic development in China. The authors examine the relationships between development strategy, resource misallocation and economic performance in China before the reform in 1978. Consistent with their theoretical framework, the capital-to-output ratio at prefecture level is negatively correlated with per-capita output, and the capital-to-output ratio at firm level is positively correlated with the degree of misallocation. The analysis reveals that the central government’s

<https://doi.org/10.1016/j.strueco.2022.11.008>

**Table 1**  
Summary of papers in this special issue.

Title	Authors	Focus	Method	Main Results
Development Strategy, Resource Misallocation and Economic Performance	Binkai Chen, Justin Yifu Lin	The relationships between development strategy, resource misallocation and economic performance in the process of economic development in China.	Two-sector growth model; OLS, 2SLS; Chinese prefectural level data;	Heavy-industry-oriented development results in greater resource misallocation and lower TFP. Consistent with the theoretic model, evidences show that the capital-to-output ratio is negatively correlated with per-capita output and positively correlated with the degree of misallocation.
Infrastructure, Conventions and Private Investment: An empirical investigation	Jefferson Souza Fraga, Marco Flávio da Cunha Resende	Whether a country's infrastructure deterioration leads to a fall in private investment and a reduction in its elasticities.	Heterogeneous dynamic panel; Global data (87 countries); 1985-2013.	Infrastructure stock has a positive and significant impact on Private Investment, being a condition for long-term growth. Further, infrastructure deficiency leads to a fall in Private Investment elasticities and the effectiveness of related economic policies.
Trade Liberalization and Structural Changes: Prefecture-level evidence from China	Xuan Fei	The effect of trade exposure and the underlying factor reallocation on the structural transformation across each region in China.	OLS, 2SLS; Chinese data; 1998-2008; Quantitative general equilibrium model in an open economy.	There is a hump-shaped pattern between trade openness and manufacture labor share, where the rise is due to improving market access and the fall comes from the internal factor reallocation. Thus, the internal geography is crucial in trade-induced structural changes.
Distance to Frontier and Optimal Financial Structure	Justin Yifu Lin, Wei Wang, Venite Zhaoyang Xu	Endogenous change of financial institutions in the process of technology advancement and economic development.	Schumpeterian endogenous growth model with uncertain innovation outcome.	While the financial intermediary encourages imitation, the financial market has comparative advantage in promoting efficiency of invention. As the economy approaches world technology frontier, the financial structure will endogenously change from intermediaries to the markets.
The Exposure to Routinization: Labor market implications for developed and developing economies	Mitali Das, Benjamin Hilgenstock	How the exposure to routinization leads to the polarization of the labor market in countries at different stages of economic development.	OLS; Global data (85 countries); 1990, 2015.	Developing economies are significantly less exposed to routinization, largely due to the structural transformation and the expansion of vertically integrated trade. The initial exposure to routinization is a strong predictor of the long-run exposure.

heavy-industry-oriented development strategy that defied the comparative advantages resulted in greater resource misallocation and lower TFP.

Providing infrastructure is another important aspect for a facilitating state according to the NSE. However, many argue that rising public infrastructure investment (II) by the government would drive down or even eliminate private investment (PI) due to the infrastructure crowding-out effect. [Fraga and Resende \(2022, this issue\)](#) investigate the relationships between a country's II and PI as well as its PI elasticities using a heterogeneous dynamic panel of 87 countries and two subgroups of low and high per-capita income countries for the period 1985–2013. The empirical analysis suggests that i) sharp cuts in II lead to consistent drops in the level of PI; ii) infrastructure deficiency leads to a fall in PI elasticities related to public investment, credit, real exchange rate, real interest rate and the infrastructure stock, further reduces the effectiveness of economic policy in stimulating PI. This implies that insufficient infrastructure supply by the government hinders production and brings negative consequences for investment and long-term growth.

## 2.2. The determinants of endogenous structure

The evolving economic structure in developing countries consists of a wide array of different structures, such as the technology structure, income structure, human capital structure, trade structure, etc. The mechanics of the transition in each of these structures need to be investigated taking into account the different levels of development.

Financial structure is one among the key economic structures that are closely related to industrial upgrading. [Lin, Wang and Xu \(2022, this issue\)](#) construct a Schumpeterian endogenous growth model to illustrate the endogenous transition of direct and indirect financial institutions in the development process. Their model features incomplete information, diversity of opinion, distance to technology frontier and establishes the comparative advantages of market and intermediary. Financial

intermediaries are more conducive to imitation, while financial markets encourages more invention, and thus the optimal financial structure depends on the distance to technology frontier (i.e. stage of economic development). This suggests that as industrial upgrading takes place and the economy relies increasingly on new technologies, the financial structure will give greater weight to financial markets.

Previous literature emphasizes the role of global integration in shaping the pattern of structural transformation at an aggregate level, whereas, growing evidences suggest that internal trade costs and internal migration costs could have substantial effect on the regional industry structure. [Fei \(2022, this issue\)](#) highlights the role of regional variations of trade exposures and internal geography in shaping patterns of trade-induced structural transformation, with a focus on the urban regions in China. Empirical findings suggest a nonlinear, hump-shaped pattern between trade openness and manufacture labor share. The paper is also notable for the characterization of this pattern in a spatial equilibrium model with multi-region, multi-sector, trade costs and endogenous allocation of factors, along with the further counterfactual analysis. The results imply that the internal reallocation of resources across regions and sectors within one country are crucial to the economic development, indicating that the policy should be place-based according to the different stages of structural transformation of different regions.

Finally, the structural evolution of employment and wages in economies vary by level of development are closely examined by [Das and Hilgenstock \(2022, this issue\)](#) through the lens of automation. They measure the “exposure to routinization” in over 80 economies to quantify the extent to which jobs are at risk of being automated by ICT, and uncovers systematic differences by a country's stage of economic development. Further, the paper identifies the determinants of the change in exposures to routinization over 1990-2015, including skill supply, the capital goods prices, structural transformation, and globalization. Findings suggest that steep decline in the relative price of capital

is the main reason of falling routine exposures in developed economies, whereas in developing economies, structural transformation and the expansion of vertically integrated trade raise exposures.

In conclusion, the five selected papers in this special issue explore some of the most important aspects of structural change from the perspectives of the NSE and shed light on not only the structural differences for countries at different development stages but also structural changes within the regions and sectors over time. We hope that this special issue will engender greater effort in further research on both theoretical approaches to investigate the structural transformation driven by the changing endowment structure and salient empirical findings with new indicators and richer data that capture these relationships with respect to different development stages.

## References

- Baumol, W.J., 1967. Macroeconomics of Unbalanced Growth: The Anatomy of Urban Crisis. *Am. Econ. Rev.* 57, 415–426.
- Chen, B., Lin, J.Y., 2021. Development strategy, resource misallocation and economic performance. *Struct. Change Econ. Dyn.* 59, 612–634.
- Das, M., Hilgenstock, B., 2022. The exposure to routinization: Labor market implications for developed and developing economies. *Struct. Change Econ. Dyn.* 60, 99–113.
- Fei, X., 2022. Trade liberalization and structural changes: Prefecture-level evidence from China. *Struct. Change Econ. Dyn.* 61, 103–126.
- Fraga, J.S., Resende, M.F., da, C., 2022. Infrastructure, conventions and private investment: An empirical investigation. *Struct. Change Econ. Dyn.* 61, 351–361.
- Ju, J., Lin, J.Y., Wang, Y., 2015. Endowment structures, industrial dynamics, and economic growth. *J. Monet. Econ.* 76, 244–263.
- Kongsamut, P., Rebelo, S., Xie, D., 2001. Beyond Balanced Growth. *Rev. Econ. Stud.* 68, 869–882.
- Lin, J.Y., 2012. *New Structural Economics: A Framework for Rethinking Development Policy*. World Bank, Washington, DC.
- Lin, J.Y., Wang, W., Xu, V.Z., 2022. Distance to frontier and optimal financial structure. *Struct. Change Econ. Dyn.* 60, 243–249.
- Lin, J.Y., Wang, Y., 2019. Remodeling Structural Change. *The Oxford Handbook of Structural Transformation*. Oxford University Press, Oxford, pp. 70–96.
- Ngai, R., Pissarides, C., 2007. Structural change in a multisector model of growth. *Am. Econ. Rev.* 97, 429–443.

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