

Domestic demand-based economic globalization and inclusive growth

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Abstract

Purpose – The purpose of this paper is to propose policy recommendations that resort to the domestic market to achieve inclusive growth from an open perspective.

Design/methodology/approach – How will economic globalization based on domestic demand affect economic growth and income distribution in an open and large country? With the aim of discussing the mechanism of the impact of expanding domestic demand on the inclusive growth from an open perspective, this paper incorporates the Global Value Chains vs National Value Chains (GVC-NVC) competition, which is triggered by foreign investments attracted by the domestic demand scale into an endogenous growth model with “Schumpeterian Innovation.”

Findings – Theoretical analysis indicates the following findings: although domestic demand-based economic globalization can promote transnational inclusive growth across countries, it is not conducive to national (domestic) inclusive growth; the impacting effect of domestic demand scale on inclusive growth across countries is subject to the moderating effect of the development maturity of the labor market; and the impacting effect of domestic demand scale on national inclusive growth is subject to the joint moderating effect of the development maturity of the labor market and labor skill structure.

Originality/value – First, this paper examines the impact of domestic demand-based economic globalization on the inclusiveness of economic growth from an open perspective, which deepens the existing theory of intra-product specialization and inclusive growth. Second, the paper puts the sequential production process into Schumpeterian growth model and reveals the mechanism that domestic demand affects inclusive growth. Third, the study finds that the enhancement of labor market efficiency, transfer payments to low-skilled labor and the creation of a fair competitive market environment will contribute to the globalization of a domestic demand-oriented economy, which provides a policy-making basis for government sectors.

Keywords Inclusive growth, Domestic demand, Economic globalization

Paper type Research paper

1. Research questions

In the post-financial crisis period, as the developed economies generally fall into the long-term “new mediocre” and Trump’s hope of “deglobalization” to reconstruct the Global Value Chains (GVC), accelerating the deployment of the Chinese market has become a strategic focus for foreign capital and China’s domestic firms (Brandt and Thun, 2010). Due to different environmental factors, institutional conditions and social standards, customer demand patterns vary substantially across countries (Porter, 1998). Therefore, to fully tap the demand capabilities of local customers, multinational corporations (MNCs) have no option but to develop their global R&D centers in China so as to create products more tailored to Chinese users by strengthening cooperation with local partners and universities[1]. Meanwhile, Chinese local enterprises’ concept of “seeking development with foreign trade” has also undergone substantial changes under the impact of Sino-US trade wars, given especially the

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“ZTE Event” (a denial of export privileges against the Zhongxing Telecommunications Equipment Corporation of China: ZTE Corporation). A new consensus has been gradually reached by Chinese industry circles, purporting to rely on the domestic market to develop the domestic economic cycle, resort to independent R&D to master key core technologies and construct the National Value Chains (NVC) in order to facilitate competition and development.

The above background essentially indicates the changes in the connotation of modern economic globalization. The traditional export-oriented economic globalization has brought about a rapid expansion of the world’s aggregate wealth. However, the imbalance of development between developed and developing countries under the global sourcing led by MNCs loom large under the impact of the crisis. Under the new backdrop, the strategic orientation for China to acquire a new round of global dividends manifests in an in-depth implementation of the strategy of expanding domestic demand, and then using the scale advantage of domestic demand to connect with the global market – a move that maximizes the “siphoning” of the global advanced elements and achieves a rebalancing of Sino–US economic development (Liu, 2012a, b). It is also in this strategic context that the Chinese Government has successively issued the “2018 National Negative List” and the “2018 Free Trade Zone Edition of Negative List,” with the aim of attracting high-quality foreign investment and high-end innovation elements by substantially relaxing the access restrictions on the foreign investment market[2]. This is essentially an in-depth transformation of the governance system of international labor division and the market relationship within the industrial organizations, enabling China to construct – based on the local market – the NVCs by which to break through the MNCs’ “enslaving” governance structure. This also helps China realize the industrial transformation and upgrading mechanism based on the domestic market to establish independent R&D, brands and national sales channels. With the transformation of global governance from an “enslaving network” to a “balanced network,” the market relationship between domestic and foreign enterprises has also shifted from the “cooperative game” between high- and low-end processes in GVC, to the “competition game” wherein domestic and foreign enterprises, respectively, complete production based on NVC and GVC, along with preemptive moves in the local market. The changing rules of economic globalization and the transnational division of labor have induced the adjustment of methods to create globalization dividends and the distribution rules, and these naturally have a profound impact on the economic development of open economies.

Different from the single development goal that only focused on economic growth in the past, the inclusive growth aimed at achieving economic growth and the improvement of people’s livelihood has increasingly become the primary goal of economic development. In his speech at the opening ceremony of the Davos Forum in the summer of 2017, Chinese Premier Li Keqiang emphasized the importance of inclusive growth, pointing out that only inclusive growth can achieve a balanced and sustainable development. Furthermore, Premier Li Keqiang stated that achieving inclusive growth is of economic and social significance. The concept of inclusive growth covers two dimensions of efficiency and equity. If a certain factor promotes economic growth while making the relatively poor groups benefit more, it can be said that this factor brings inclusive growth (Zhang and Wang, 2016). The inclusive growth under the open perspective is also manifested in the notion that the benefits of economic globalization benefit a high number of developing countries and regions. This is not only the inherent requirement of the deepening development of modern economic globalization and international division of labor, but also a precondition for all countries – including developed countries – to have sustained access to the benefits of economic globalization (Fang *et al.*, 2012). Therefore, exploring the impact of domestic demand-oriented economic globalization on inclusive growth is more realistic in the context of the growing Sino–US economic and trade frictions.

The above phenomena thus raise three questions that require theoretical research and empirical tests. First, can domestic demand-based economic globalization promote the realization of transnational inclusive growth? Given that the developed countries are the main beneficiaries of the previous round of economic globalization dividends and that China is the largest developing country in the world, this paper will focus on the impact of expanding domestic demand strategies on domestic economic growth. This paper shall also investigate whether the strategies generate more global dividends to China, while promoting sustained economic growth. Second, how will the domestic demand-based economic globalization contribute to the domestic labor market while promoting homeland economic growth? Considering the phenomenon of skill differentiation in the domestic labor market and the difference in the demands for diversified skill labors by MNCs' respective localization strategies, this paper shall focus on the mechanism and influence of the expansion of the domestic demand strategy on the domestic skill premium, and then the internal income distribution structure of the labor factor. Third, what kind of policies must be formulated to ensure the simultaneous international and domestic inclusiveness of economic growth and further promote the current economic globalization into a new stage of development that is more dynamic and sustainable? Regrettably, these issues have not been systematically studied in the literature, even though the answers to these questions can deepen and enrich the existing theory of economic globalization as well as provide practical guidance for the Chinese economy with deep structural adjustment and economic transformation.

Based on the aforementioned questions, this paper attempts to incorporate the GVC-NVC competition, which is triggered by foreign investment attracted by the domestic demand scale into an endogenous growth model with "Schumpeterian Innovation." Then, starting from the two dimensions of efficiency (sustainable economic growth and household income level) and equity (transnational economic growth convergence and domestic income distribution gap), we comprehensively explore the impacts of expanding domestic demand scale on inclusive growth. Theoretical analysis and empirical tests reveal the following: domestic demand-based economic globalization is conducive to the realization of transnational inclusive growth, but it is not conducive to the realization of domestic inclusive growth, and the effect of domestic demand-based economic globalization on transnational inclusive growth is subject to the moderating effect of the development maturity of labor market, such that the more mature the labor market and the higher the skill structure of the labor force, the more conducive they are to the realization of transnational inclusive growth, while also being unfavorable to the realization of the domestic labor market's inclusive growth.

Compared with the existing literature, the innovation of this paper mainly manifests in three aspects: innovation in research perspective, innovation in research methods and new findings related to the promotion of inclusive growth. First, in terms of innovation in research perspective, based on the perspective of efficiency and equity, this paper examines the impact of domestic demand-based economic globalization on the inclusiveness of economic growth from an open perspective, and refines and deepens the existing theory of intra-product specialization and inclusive growth. Second, in terms of innovation in research methods, the incorporation of the "process production function" reflecting the "vertical division of labor based on specialization" into the endogenous growth model with "Schumpeterian Innovation" reveals – through a rigorous mathematical model – the action mechanism for domestic demand scale to trigger the value chain competition, which, in turn, affects the domestic economic growth convergence and income distribution structure, thereby strengthening the relevant frontier literature. Third, the study finds that policies for enhancing labor market effectiveness and promoting inclusive growth that increase transfer payments to low-skilled labor and the creation of a fair competitive market environment contribute to the development and deepening of the globalization of a domestic demand-oriented economy, thus providing a policy-making basis for government sectors.

2. Literature review

There are two major types of literature directly related to the study of this paper: one is the study of the inclusive growth effect of export-oriented economy, and the other is the pathway and mechanism of leveraging domestic demand to achieve inclusive growth.

2.1 Research on the inclusive growth effect of an export-oriented economy

Since the implementation of the reform and opening up, China has seized the “decentralization and fragmentation of the production process” and the historic opportunity of the GVC division of labor driven by the MNCs’ “global allocation of value appreciation links.” By implementing the export-oriented economic globalization strategy, China has realized the “explosive growth” of foreign trade (Dai and Jin, 2014), especially commodity trade, and the so-called “China miracle,” which has maintained rapid growth for several decades, thereby successfully completing the transition from the low- to the middle-income stage[3] and becoming the world’s second largest economy. However, while GVC promoted the expansion of the economic gross scale of developing countries, the accompanying problems of inadequate inclusiveness, such as the uneven distribution of international interests and the widening gap in domestic income distribution, have caused wide spread concern (Piketty, 2012; Bank, 2003; Basu, 2007; Joseph, 2012). From the perspective of the degree of transnational inclusiveness[4], the increasingly global intra-product specialization does not necessarily benefit the various countries indiscriminately (Zhuo and Zhang, 2008). The difference in the technical content of processes and the export added value of GVC leads to significant gaps in the revenue earned by economies at different segments of the GVC. Statistics show that the technical level and value-added content of China’s trade exports are far lower than those of developed countries, such as the USA and Japan (Ni, 2017). More seriously, the blockade and blocking strategies adopted by MNCs upon enterprises in latecomer economies trying to climb the high-ends of GVC have further cemented the increasingly differentiated growth performance (Liu and Zhang, 2009; Humphrey and Schmitz, 2012). From the perspective of inclusiveness within countries, under the influence of the factor endowment structure the factor intensity of production processes (Acemoglu, 2009), and the selective technological progress (Eicher and Turnovsky, 1999), the GVC labor division will also impose a complex impact mechanism on the growth equity and development inclusiveness of participating countries. The negative substitution effect of process transfer on the low-skilled labor force in developed countries may lead to the deterioration of the situation of the unprivileged population. However, the factor-demand creation effect caused by the expansion of the high-tech sector in developed countries can, in turn, promote the improvement of the welfare of the bottom population. The transfer of processes in the real world is also accompanied by capital and technology flows. If the labor-intensive processes transferred by MNCs are still high-tech or capital-intensive in the host country (Feenstra and Hanson, 1995), then the technology spillover and the market competition and technology spillover effects caused by the entry of MNCs may, on the contrary, promote the emergence of the skill premium in developing countries (Ge and Luo, 2015), thus leading to a further widening of wage differentials (disparity) in different sectors of society.

2.2 Research on the pathway and mechanism of leveraging domestic demand to achieve inclusive growth

With regard to the process by which China has climbed the high-end of GVC and achieves inclusive growth, previous studies have emphasized the “great power advantage” (Li and Ouyang, 2016) based on the size of population and demand, and the urgency and necessity

of accelerating the construction of the network system and governance structure of NVC based on local market demand (Liu and Zhang, 2009). On the one hand, the construction of NVC is a key measure for local enterprises to break through the “low-end blockade” of the GVC chain and achieve sustainable development. Under the double squeeze of the “high-end backflow” in developed countries and the “mid-low end divided flow” in developing countries, China’s manufacturing sector faces a serious impact. Through the internal links and external dependence formed by NVC (Athukorala and Kohpaiboon, 2010), not only can China leverage (siphon) the international advanced production factors to enhance the endogenous growth capacity of local enterprises and make up for the shortcomings of local enterprises’ lack of development initiative (Liu, 2012a, b), the country can also promote the domestic industrial structure optimization and the coordinated regional and inter-sector industrial development through the escalated input–output correlation between the coastal areas and the central and western regions (Liu and Zhang, 2009). On the other hand, in the post-financial crisis period, the weak consumer market in developed countries and the strong domestic market demand have created favorable external conditions for the construction of local NVCs (Brandt and Thun, 2010). By constructing an open economy model that includes both domestic and international markets’ segmented production and investment as well as horizontal production and investment, it is found that the lack of domestic demand and the presence of institutional barriers are the primary causes for the lack of NVC construction in local enterprises (Ren *et al.*, 2016). In relation to this, the enthusiasm of enterprises to build NVC depends on the incentive space for NVC profits relative to the low-end embedded GVC income, whereas the “incentive effect” (Schmookler and Brownlee, 1962) and “uncertainty effect” (Myers and Marquis, 1969) generated by domestic market size as well as the competition dynamics, technology spillovers and the cooperative innovation effects (Zweimüller and Brunner, 2010), which are triggered by the “native market effect” generated by the entry of MNCs attracted by domestic demand, can both promote the independent innovation capability of local enterprises, and thus enhance the profitability of these enterprises in the market competition.

Thus far, the existing literature has provided a rich theoretical foundation and empirical evidence for deepening our understanding of inclusive economic growth from an open perspective. However, most of them are either limited by theoretical inferences exploring the reasons to build NVC in the context of export-oriented economic globalization (Zhang and Zhu, 2007; Liu, 2012a, b), how to construct NVC (Zhang and Liu, 2007) or how to leverage the scale of domestic demand to help local enterprises improve their competitiveness in the context of domestic demand-based economic globalization (Brandt and Thun, 2010) and other case studies. These studies largely ignore the effect of the expansion of domestic demand scale on inclusive growth in the context of the target market’s transition “from going global to going local,” as promoted by the implementation of domestic demand-based economic globalization strategy, which is exactly the focus of our research.

3. Theoretical model

3.1 Model construction

To construct a dynamic general equilibrium model of domestic and foreign firms’ GVC-NVC-based competition over the domestic market, we employ the Schumpeterian Innovation endogenous growth model (Grossman and Helpman, 1991) and the process production function (Costinot *et al.*, 2013) that reflects the intra-product specialization. We also examine the growth effect and income distribution effect of domestic demand-led economic globalization.

3.1.1 Consumer sector. Assuming that the representative households in the country have infinite vital characteristics, income comes from labor supply, the number of highly

skilled labor is H_{dt} , and the number of low-skilled labor is L_{dt} , then the utility function of the household sector's intertemporal preference is given by:

$$U_{dt} = \int_t^{\infty} e^{-\rho(\tau-t)} \log D_{\tau} d\tau, \quad (1)$$

where the household instantaneous utility function is $D_{\tau} = \int_0^1 \sum_m q_{mi} x_{mi\tau} di$, $x_{mi\tau}$ is the demand for the m generation of final product i of the representative household of the time point τ , and q_{mi} stands for the quality of the m generation of final product i . Assuming that the quality of the generation product is 1 (i.e. $q_{0i} = 1$), and the difference in quality between any two generations is μ , then $q_{mi} = \mu^m$. The decision making for consumer utility maximization shall satisfy the following:

$$\begin{aligned} \min \quad & \int_0^1 p_{mit} x_{mit} di \\ \text{s.t.} \quad & \int_0^1 \sum_m q_{mi} x_{mit} \leq D_t. \end{aligned} \quad (2)$$

Solving Equation (2) shows that the optimal pricing strategy of the final product manufacturer shall satisfy:

$$p_{mit} = \mu p_{m-1it}. \quad (3)$$

Given the high-skilled labor wage w_{hdt} and low-skilled labor wage w_{ldt} , the expenditure levels of representative households shall satisfy:

$$E_t = w_{hdt} H_{dt} + w_{ldt} L_{dt}. \quad (4)$$

At this point, the demand function of the representative household for the final product is given by:

$$x_{mit} = \begin{cases} E_t / p_{mit}, & q_{mi} = \mu_i^m \\ 0, & q_{mi} \neq \mu_i^m \end{cases}. \quad (5)$$

3.1.2 Final product sector. We assume that the final product production obeys the process production characteristics proposed by Costinot *et al.* (2013): the production process goes through $s \in (0, 1]$ stages and any product produced in the $s \in (0, 1)$ stage is called the intermediate product. The completion of each stage requires one unit of low-skilled labor input and one unit of intermediate input from the previous stage. To reduce the production costs, MNCs will use some low-end labor to complete some low-end links in the $s \in (0, s']$ stage by outsourcing or FDI, and the remaining high-end links $s \in (s', 1]$ are completed by low-skilled labor in developed countries. This strategy reflects the characteristics of developed countries using GVC to complete production. Local companies use local low-skilled labor to complete the production of all the final products, reflecting the characteristics of local enterprises using NVC to complete production. Assuming that the labor force will err in the production process, and the error reach $\lambda_c > 0$ ($c = n, d$) obeys the Poisson distribution, then once the error occurs, the intermediate inputs will all be scrapped (discard as useless) at this stage. The differences in institutional culture and

management methods between different countries have led to significant differences in the error reach rates, which satisfy the following: $0 < \lambda_n < \lambda_d < 1$. From this, the price and quantity relationship of products at various stages of a local enterprise are, respectively, given by:

$$p_{idt}(s+ds) = (1 + \lambda_d ds)p_{idt}(s) + w_{ldt} ds, \quad (6)$$

$$x_{idt}(s+ds) = (1 - \lambda_d ds)x_{idt}(s). \quad (7)$$

Similarly, the price and quantity relationships of products at various stages of an MNCs are given by:

$$p_{int}(s+ds) = \begin{cases} (1 + \lambda_n ds)p_{int}(s) + w_{ldt} ds, & s \in (0, s'] \\ (1 + \lambda_n ds)p_{int}(s) + w_{int} ds, & s \in [s', 1] \end{cases} \quad (8)$$

$$x_{int}(s+ds) = (1 - \lambda_n ds)x_{int}(s). \quad (9)$$

Assume that the intermediate product 0 is infinitely supplied, that is, $p_{it}(0) = 0$, and the final product price is standardized to 1, that is, $p_{it}(1) = 1$, then the s at both sides of Equations (6) and (7) are simultaneously fully differentiated; considering $p_{it}(1) = 1$, it yields:

$$p_{idt}(s) = -\frac{w_{ldt}}{\lambda_d} + \left(1 + \frac{w_{ldt}}{\lambda_d}\right) e^{\lambda_d(s-1)}. \quad (10)$$

Then, from $p_{idt}(0) = 0$, the wage level of low-skilled labor in equilibrium is given by:

$$w_{ldt}^* = \frac{\lambda_d}{e^{\lambda_d} - 1}. \quad (11)$$

In the same way, the prices and quantities of products available at all stages of an MNC are given by:

$$p_{int}(s) = \begin{cases} -\frac{w_{ldt}}{\lambda_n} + \frac{e^{\lambda_n s} w_{ldt}}{\lambda_n}, & s \in (0, s'] \\ -\frac{w_{int}}{\lambda_n} + \left(1 + \frac{w_{int}}{\lambda_n}\right) e^{\lambda_n(s-1)}, & s \in [s', 1] \end{cases} \quad (12)$$

From the continuation of $p_{int}(s)$ at $s = s'$, the s' level in equilibrium is obtained as follows:

$$-\frac{w_{ldt}}{\lambda_n} + \frac{e^{\lambda_n s'} w_{ldt}}{\lambda_n} = -\frac{w_{int}}{\lambda_n} + \left(1 + \frac{w_{int}}{\lambda_n}\right) e^{\lambda_n(s'-1)}. \quad (13)$$

From market clearing of the final product, we have the following: $x_{int}(1) + x_{idt}(1) = E_t/\mu$, let θ_{nt} and θ_{dt} represent the market share of MNCs and local enterprises, respectively, under Bertrand competition, the domestic and foreign enterprises will equally divide the domestic market, that is, $\theta_{nt}^* = \theta_{dt}^* = 1/2$, the s at both sides of the demand functions (7) and (9) are

simultaneously fully differentiated. Combined with $x_{int}(1) = \theta_{nt}E_t/\mu$, $x_{idt}(1) = \theta_{dt}E_t/\mu$, we obtain:

$$x_{ict}(s) = \frac{\theta_{ct}E_t e^{\lambda_{ct}(1-s)}}{\mu}, \quad (c = n, d). \quad (14)$$

Further, the corporate profits are calculated as follows:

$$\pi_{ct} = \frac{\mu-1}{\mu}\theta_{ct}E_t, \quad (c = n, d). \quad (15)$$

3.1.3 R&D sector. Based on the technology advancement model following a progression up a quality ladder proposed by Grossman and Helpman (1991), we assumed that the innovation reach rate τ_{ct} of the R&D sectors of the two countries obeys the Poisson distribution. In order to develop products that meet local preferences, MNCs will employ local high-skilled labor to conduct product R&D, and τ_{nt} requires a_n unit labor input. In the same way, τ_{dt} requires a_d unit of local high-skilled labor input. Assuming that $a_n a_d$, in the case of the same innovation reach rate, this means that MNCs need more local high-skilled labor input[5]. Let H_{2dt} represent the number of MNCs' demand for local high-skilled labor and H_{3dt} indicate the number of local enterprises' demand for local high-skilled labor, then we have $H_{2,d,t} = \tau_{nt}a_n$ and $H_{3dt} = \tau_{dt}a_d$. In addition, v_{ct} expresses the value brought by successful innovation, given the marginal condition $v_{ct} = w_{hdt}a_c$ and non-arbitrage condition $r_t v_{ct} = \pi_{ct} + \dot{v}_{ct} - \tau_{ct}v_{ct}$ of the profit function of the two countries' enterprises, the relational expression of the two countries' innovation rate is obtained as follows:

$$r_t + \tau_{dt} = \frac{\mu-1}{\mu} \frac{\theta_{dt}E_t}{w_{hdt}a_d}, \quad (16)$$

$$r_t + \tau_{nt} = \left(\frac{\theta_{nt}}{\theta_{dt}}\right) \left(\frac{a_d}{a_n}\right) (r_t + \tau_{dt}). \quad (17)$$

3.2 Dynamic general equilibrium solution and impact analysis

The above constitute the decision of each sector to determine the optimal decision conditions at a certain time. From the perspective of dynamic equilibrium, we can obtain a country's high and low-skilled labor wages, household income levels, innovation rates and economic growth rates, and so on, under dynamic general equilibrium, through the final product market clearing, the clearing of the intermediate market at all stages of the production process, the clearing of the local high- and low-skilled labor market, the clearing of the labor market in developed countries and a series of static decision-making conditions.

First, according to the constraints of the domestic consumer sector's full lifecycle utility maximization and consumption expenditure, the Hamiltonian function is used to solve the dynamic optimal first-order condition. Under the dynamic equilibrium state, it is obtained as follows:

$$\frac{\dot{E}_t}{E_t} = r_t - \rho. \quad (18)$$

Given the country's high-skilled labor market clearing conditions, we have:

$$a_n \tau_{nt} + a_d \tau_{dt} = H_{dt}. \quad (19)$$

Then, given the country's low-skilled labor market clearing conditions $\int_0^1 x_{idt}(s)ds + \int_0^{s^*} x_{int}(s)ds = L_{dt}$, we have:

$$\frac{\theta_{dt}E_t}{\mu\lambda_d}(e^{\lambda_n}-1) + \frac{\theta_{nt}E_t e^{\lambda_n}}{\mu\lambda_n}(1-e^{-\lambda_n s^*}) = L_{dt}. \quad (20)$$

With the low-skilled labor market clearing condition $\int_s^1 x_{int}(s)ds = L_{nt}$ in developed countries, this is obtained as follows:

$$\frac{e^{-\lambda_n s^*}}{\lambda_n} - e^{-\lambda_n} = \frac{\mu L_{nt}}{\theta_{nt}E_t}. \quad (21)$$

Finally, the static decision-making conditions (4), (11), (13), (16), (17) and the labor market clearing conditions (19)–(21) and $\theta_{nt}^* = \theta_{dt}^* = 1/2$ are known, given the parameters $\{\lambda_n, \lambda_d, a_d, a_n, \mu, \rho\}$ and the exogenous variables $\{L_{dt}, H_{dt}, L_{nt}, E_t^*\}$ for each period, then $\{\tau_{nt}^*, \tau_{dt}^*, w_{idt}^*, w_{int}^*, w_{h,d,t}^*, r_t^*, E_t^*\}$ is determined endogenously by the model system[6]. Further substituting r_t^* into Equation (18), it yields the long-term economic growth rate g_t^* [7]. It can be seen from the above analysis that the scale E_t^* of the domestic demand in the long-term equilibrium state is determined endogenously by L_{dt} and H_{dt} . Therefore, in the following equations, we will use the increase of L_{dt} or H_{dt} to characterize the changes in domestic demand scale and further explore the growth effect and income distribution effect of expanding domestic demand.

First, we analyze the effect of low-skilled labor expansion. Given that $0 < \lambda_n < 1$, by (20) and (21), we obtain:

$$ds^*/dL_{dt} = \frac{((e^{-\lambda_n s^*})/\lambda_n) - e^{-\lambda_n}}{L_{nt}e^{\lambda_n}e^{-\lambda_n s^*} + L_{dt}e^{-\lambda_n s^*}} > 0. \quad (22)$$

Further, by (21), we obtain:

$$dE_t^*/ds^* = \theta_n E_t^2 e^{-\lambda_n s^*} / \delta L_{dt} > 0. \quad (23)$$

From (22) and (23), we obtain:

$$\frac{dE_t^*}{dL_{dt}} = \frac{dE_t^*}{ds^*} \cdot \frac{ds^*}{dL_{dt}} > 0. \quad (24)$$

For the convenience of expression, the structure of labor income distribution is defined as $\phi^* = ((w_{idt}^* L_{dt}) / (w_{hdt}^* H_{dt}))$, which obtains:

$$d\phi^*/dL_{dt} = \frac{1}{H_{dt}} \left(1 - \frac{L_{dt}}{w_{hdt}^*} \frac{dw_{hdt}^*}{dL_{dt}} \right). \quad (25)$$

When labor demand's cross elasticity of wage $e_{lh} = ((dL_{dt}) / (dw_{hdt}^*)) ((w_{hdt}^*) / (L_{dt})) > 1$, $d\phi^*/dL_{dt} > 0$.

Then from (16), (17) and (19), we have:

$$\tau_d^* = \frac{1}{a_n + a_d} \left[H_{dt} + \frac{\mu - 1}{\mu} \cdot \frac{a_n - a_d}{2a_d} \cdot \frac{E_t^*}{w_{hdt}^*} \right], \quad (26)$$

$$\tau_n^* = \frac{H_{dt} - a_d \tau_d^*}{a_n}. \quad (27)$$

Further, by (26) and (27), we have:

$$\frac{d\tau_d^*}{dL_{dt}} = \frac{a_n - a_d}{2a_d(a_n + a_d)} \frac{\mu - 1}{\mu} \cdot \frac{w_{ldt}^*}{w_{hdt}^*} \cdot \left(1 - \frac{L_{dt}}{w_{hdt}^*} \frac{dw_{hdt}^*}{dL_{dt}} \right). \quad (28)$$

Thus, when $e_h > 1$, $((d\tau_d^*)/(dL_{dt})) > 0$, $((d\tau_n^*)/(dL_{dt})) < 0$. Based on this, we obtain the following proposition:

P1. In the context of economic globalization based on domestic demand, when the cross-wage elasticity of labor demand is greater than 1, the expansion of the local market capacity caused by the increase in the supply of low-skilled labor has a positive effect on inclusive growth.

Second, we analyze the effect of the expansion of high-skilled labor. From (4), we have:

$$\frac{dE_t^*}{dH_{dt}} = w_{hdt} \left(1 + \frac{((dw_{hdt}^*)/(w_{hdt}^*))}{((dH_{dt})/(H_{dt}))} \right). \quad (29)$$

From the labor supply elasticity $e_h = ((dH_{dt}/H_{dt})/(dw_{hdt}^*/w_{hdt}^*)) > 0$, it is known that $(dE_t^*/dH_{dt}) > 0$.

The distribution structure of labor income $\phi^* = ((w_{ldt}^* L_{dt})/(w_{hdt}^* H_{dt}))$; taking the derivative of H_{dt} , it yields:

$$\frac{d\phi^*}{dH_{dt}} = -\frac{w_{ldt}^* L_{dt}}{w_{hdt}^* H_{dt}^2} \left(1 + \frac{dw_{hdt}^*}{dH_{dt}} \cdot \frac{H_{dt}}{w_{hdt}^*} \right) < 0. \quad (30)$$

Further, by (26), we have:

$$\frac{\partial \tau_d^*}{\partial H_{dt}} = \frac{1}{a_n + a_d} \left[1 + \frac{\mu - 1}{\mu} \cdot \frac{a_n - a_d}{2a_d} \cdot \left(1 - \frac{w_{ldt}^* L_{dt}}{w_{hdt}^* H_{dt}} \cdot \frac{(\partial w_{hdt}^*/w_{hdt}^*)}{(\partial H_{dt}/H_{dt})} \right) \right]. \quad (31)$$

When $e_h > \phi^* = ((w_{ldt}^* L_{dt})/(w_{hdt}^* H_{dt}))$, $(\partial \tau_d^*/\alpha H_{dt}) > 0$; when $e_h < \phi^*$, $(\partial \tau_d^*/\alpha H_{dt}) < 0$. Define $\tilde{e} = \max [1, \phi^*]$, when $e_h > \tilde{e}$, $(dE_t^*/dH_{dt}) > 0$, $(d\phi^*/dH_{dt}) < 0$, $(\partial \tau_d^*/\alpha H_{dt}) > 0$ and $(\partial \tau_n^*/\alpha H_{dt}) < 0$. Based on this, we derive the following proposition:

P2. Within the context of economic globalization based on domestic demand, when the supply of highly skilled labor is elastic and exceeds a certain threshold, in the wake of the expansion of the supply of high-skilled labor, the expansion of the domestic market capacity has expanded the income inequality of high and low-skilled labor while promoting domestic economic growth, social welfare and transnational economy growth convergence.

Combining the conclusions of *P1* and *P2* (see Table I for details), we can see that labor supply elasticity, the cross-wage elasticity of demand and labor market skill structure can affect the direction and extent of the impact of domestic demand scale on inclusive growth. The more elastic the labor supply, the stronger the substitutability between high- and low-skilled labor, and the more conducive it is to domestic economic growth and social welfare, thereby contributing further to the realization of transnational

Table I.
Analysis of the impact
of domestic demand
expansion

		Efficiency dimension – absolute level analysis		Equity dimension - relative level analysis	
Market scale	Labor market elasticity	Household income ^a	Domestic innovation speed	Transnational economic growth convergence	Labor income Inequality
L_{dt} increase	$e_{lh} > 1$	$(dE_i^*/dL_{dt}) > 0$	$(d\tau_d^*/dL_{dt}) > 0$	$((d(\tau_d^*/\tau_s^*)) / (dL_{dt})) > 0$	$d\phi^*/dL_{dt} > 0$
H_{dt} increase	$e_h > \tilde{e}$	$(\partial E_i^* / \alpha H_{dt}) > 0$	$(d\tau_d^*/dH_{dt}) > 0$	$((d(\tau_d^*/\tau_s^*)) / (dH_{dt})) > 0$	$d\phi^*/dH_{dt} < 0$

Notes: When the labor market elasticity is greater than a certain threshold, the increase in labor supply leads to an increase in household income. Therefore, in the case of perfect labor market, the increase in labor supply also characterizes the expansion of domestic demand. ^aAs mentioned in Section 3, household income actually reflects the scale of domestic demand

inclusive growth. This promotion effect is not affected by the labor skills. Thus, we have the following inference:

Inference 1. The effect of domestic demand-driven inclusive growth is influenced by the effectiveness of the labor market, such that the more elastic the labor market, the stronger the effect of domestic demand-driven transnational inclusive growth.

Further analysis revealed that the structure of labor income distribution is not only affected by the elasticity of labor supply, but also by the skill structure of labor. With the increase in the relative supply of high-skilled labor, the flexibility of the labor market becomes more demanding[8]. At this time, the domestic economic growth rate and the wealth of the residents will also rise, but the dividend of economic globalization is completely absorbed by the highly skilled labor, resulting in widened income distribution gaps between high-low-skilled labors. Thus, we get the following inference:

Inference 2. The impact of domestic demand-driven domestic inclusive growth is influenced by labor market effectiveness and skill status, such that the higher the skill structure of the workforce, the more elastic the labor market, and the weaker the effect of domestic demand-driven domestic inclusive growth.

4. Econometric model, variable measurement and data description

4.1 Econometric model setting

The theoretical model shows that the domestic demand-based economic globalization has an effect on inclusive growth and its impact is moderated by the labor market effectiveness and skill structure. However, this conclusion has not been verified on the empirical level. To this end, based on the empirical research framework[9] for analyzing inclusive growth as proposed by Zhang and Wang (2016), this paper sets the benchmark model for inclusive growth driven by domestic demand as follows:

$$y_{it} = \alpha_0 + \alpha_1 \text{demand}_{it} + \alpha_2 y_{it-1} + \alpha_3 y_{it-1} \text{demand}_{it} + \sum X_{it} + \eta_i + \gamma_t + \varepsilon_{it}, \quad (32)$$

where i, t represents the region and the year, respectively; y denotes the target variable; demand represents the scale of the domestic demand; and X denotes the set of control variables. In addition, η_i denotes the regional fixed effect, γ_t denotes the time-fixed effect and ε_{it} denotes the random disturbance term. Based on the partial effect, $\partial y_{it} / \partial \text{demand}_{it} = \alpha_1 + \alpha_3 y_{it-1}$. Therefore, when $\alpha_1 + \alpha_3 y_{it-1} > 0$, it means that the expansion of domestic demand promotes the absolute level of the target variable. Further, when $\alpha_3 < 0$, it means that the smaller the sample in the previous period y_{it-1} , the more benefit from the expansion

of domestic demand, which also means that the expansion of domestic demand helps to alleviate the inequality of the target variable y_{it} , thus demonstrating the promotion effect of domestic demand on inclusive growth.

Based on the above framework, we use in the following equations the multinational panel data covering 34 OCED member countries[10] collected from 2008 to 2016 and the panel data of 285 Chinese prefecture-level cities[11] collected from 2008 to 2014 to conduct empirical test on Inference 1 and Inference 2, respectively. The econometric models for inclusive growth and domestic inclusive growth are, respectively, set as follows:

$$\begin{aligned} \text{Income}_{it} = & \beta_0 + \beta_1 \text{demand}_{it} + \beta_2 \text{income}_{it-1} + \beta_3 (\text{income}_{it-1} \times \text{demand}_{it}) \times \text{lfw}_{it} \\ & + \sum X_{it} + \eta_i + \gamma_t + \varepsilon_{it}, \end{aligned} \quad (33)$$

$$\begin{aligned} \text{Wage}_{jt} = & \theta_0 + \theta_1 \text{demand}_{jt} + \theta_2 \text{wage}_{jt-1} + \theta_3 (\text{wage}_{jt-1} \times \text{demand}_{jt}) \times \text{ls}_{jt} \\ & + \sum X_{jt} + \eta_j + \gamma_t + \varepsilon_{jt}, \end{aligned} \quad (34)$$

where i , j , and t denote the OCED member countries, China's Prefecture-level cities and years, respectively; income is the per capita income of each country; lfw denotes the development of the labor market in each country; demand denotes final demand; wage denotes the wage; $ls = lmar \times \text{skill}$; $lmar$ denotes the development of the local (domestic) labor market; and skill denotes the skill structure of the domestic labor market. In addition, X is the control variable, η_i represents the regional fixed effect, γ_t represents the time-fixed effect and ε represents the random disturbance term. According to the inclusive growth defined above, if $\beta_1 + \beta_3 \text{income}_{it-1} > 0$ and $\beta_3 < 0$, it indicates that the domestic demand drives the transnational inclusive growth. Furthermore, after introducing the product of the moderating variables lfw_{it} and $\text{income}_{it-1} \times \text{demand}_{it}$, if $\beta_1 + \beta_3 \text{income}_{it-1} lfw_{it} > 0$ and $\beta_3 < 0$ still hold, it means that the promotion effect of domestic demand on transnational inclusive growth is positively moderated by the development of the labor market, thus proving Inference 1. Similarly, if $\theta_1 + \theta_3 \text{wage}_{it-1} > 0$ and $\theta_3 > 0$, this indicates that the domestic demand does not drive domestic inclusive growth, and further, after introducing the product of the moderating variables ls_{jt} and $\text{wage}_{jt-1} \times \text{demand}_{jt}$, if $\theta_1 + \theta_3 \text{wage}_{it-1} ls_{jt} > 0$ and $\theta_3 > 0$ still hold, it means that the negative impact of domestic demand on domestic inclusive growth is positively moderated by the development of the labor market and the skill structure of the labor force, thus proving Inference 2.

4.2 Variable measurement and data source

4.2.1 Dependent variables. These include the per capita income level of countries (income) and the wage level of labor in domestic prefecture-level cities (wage). Income denotes the actual value of the per capita income of each country, adjusted by GDP deflator on the 2008 price level. The data are extracted from the World Bank Database. Wage denotes the actual level of average wage of employees in 285 prefecture-level cities, adjusted by the consumer price index based on the 2008 price. The data are sourced from the China City Statistical Yearbook.

4.2.2 Core explanatory variables. **4.2.2.1 Domestic demand (demand).** Existing studies employed two major methods for measuring demand: one is to use one country's GDP to measure the scale of demand (Hanson and Xiang, 2004; Amity and Konings, 2007); the other is to use the input-output table to calculate industry demand (Davis and Weinstein, 1999). Given that the input-output tables at the prefecture-level and each country are not available, this paper draws on Chen and Chu (2013) and uses the actual GDP adjusted by the GDP deflator to measure the final demand scale.

4.2.3 *Moderating variables.* These include the development of the labor market in each country (*lfw*), the labor market conditions of various cities (*lmar*) and the labor skill structure (*skill*). *Lfw* is measured by the Labor Liberalization Index, which comes from the Economic Freedom of the World: 2018 Annual Report published by the Frase Institute; *lmar* is measured by the factor marketization index, and the data come from the NERI Index of Marketization of China's Provinces 2016 Edition; skill is represented by the ratio of those with university degree or above in the total number of labor force, and the data are extracted from the China City Statistical Yearbook.

4.2.4 *Control variables.* Referring to the relevant literature on inclusive growth studies, the following control variables are included in the econometric model.

4.2.4.1 *Industrial structure ind.* Service-oriented industrial structure is an important variable affecting economic growth and income level with impacting effects. There are two types of views in existing research: one view believes that if the production efficiency of service industry is lower than that of manufacturing industry, then the economy will be "cursed with the Baumol's cost disease" (Baumol, 1967). Another view points out that if the industrial structure upgrade is caused by the expansion of the productive service industry, then the service-oriented industrial structure may not slow down economic growth and household income (Tan and Zheng, 2012). To this end, the current paper controls the variable of the service-oriented industrial structure. The value added of the service industry in the industrial structure of each country is measured by its ratio in GDP (the data come from the World Bank Database). The service-oriented industrial structure of prefecture-level cities is measured by the ratio of the proportion of employment service industry value added in GDP. The data are extracted from the China City Statistical Yearbook.

4.2.4.2 *Foreign capital utilization fdi.* The theory of international direct investment shows that FDI is an important factor affecting employment, economic growth and income distribution in each country. To this end, this paper incorporates foreign capital utilization into the empirical framework of inclusive growth and domestic inclusive growth. Among them, the foreign capital utilization rate of each country is measured by the net inflow of foreign investment as a percentage of GDP using data coming from the World Bank Database. The foreign capital utilization rate of each prefecture-level city is measured by Foreign Direct Investment as a percentage of GDP (the data come from the China City Statistical Yearbook).

4.2.4.3 *Capital formation ratio (cap).* The capital formation rate of each country is obtained by the proportion of capital formation in GDP using data coming from the "World Bank Database." The proportion of capital formation in prefecture-level cities equals the investment in fixed assets of the whole society divided by the number of employees (the data come from the China Urban Statistical Yearbook). The neoclassical growth theory shows that fixed asset investment promotes capital deepening and the increase of per capita income. Therefore, it is predicted that the coefficient of the variable vs per capita income is positive. However, fixed asset investment may have two effects on wage levels. On the one hand, the increase in fixed asset investment shall promote capital deepening and increase production efficiency, which can then raise workers' wages. On the other hand, the substitution effect of excessive fixed asset investment on employment may not be conducive to the increase in wage levels. Therefore, the impact of this variable on wage levels must be controlled.

4.2.4.4 *Urbanization process (city).* The urbanization process of each country is represented by the proportion of urban population in the total population (the data come from the World Bank Database). The urbanization process of each prefecture-level city is measured by the ratio of the number of urban private and individual employees in the average number of employees, using data coming from the China Urban Statistical Yearbook. Population

agglomeration and economies of scale accompanying urbanization are both important phenomena of economic development and important factors affecting wages and income levels. For this reason, these factors must be controlled in the measurement model.

For the sake of clarity, the paper reports the basic statistical description of the above variables. The descriptive statistics of the relevant variables in the econometric model (33) are shown in Table II, and the descriptive statistics of the relevant variables in the econometric model (34) are shown in Table III.

5. Empirical results and analysis

5.1 Research on the growth effect of domestic demand scale

As a starting point for analysis, this paper first focuses on the growth effect. As shown in Table IV, whether using multinational panel data or prefecture-level panel data, the empirical test results invariably indicate that an increase in the scale of domestic demand can promote the improvement of absolute income levels. Models (1)–(5) show that the regression coefficients of per capita income level to domestic demand scale are invariably positive and pass the significance test at the 1 percent level, regardless of whether or not control variables are introduced. Models (6)–(10) show that the regression coefficients of the wage level to the domestic demand scale are invariably positive and pass the significance test at the 1 percent level, regardless of whether or not control variables are introduced. This means that fostering local markets and developing a strategy of economic globalization based on domestic demand can benefit long-term sustainable growth. However, whether the current round of economic globalization can promote a domestic economy’s catch-up growth convergence to developed countries, and whether it can improve the distribution of labor income cannot be answered based on the results in Table IV. The following section will focus on this issue.

Variable name	Variable definition	Sample size	Average value	Variance	Min.	Max.
demand _{it}	National demand scale (\$100bn)	306	12.28	27.31	0.110	169.3
income _{it}	Per capita income level (\$10,000)	306	3.572	2.218	0.610	11.43
lfw _{it}	Labor liberalization index	306	6.564	1.277	3.940	9.200
ind _{it}	Industrial structure	306	0.733	0.064	0.570	0.950
fdi _{it}	Foreign capital utilization	306	5.768	17.56	-15.99	252.3
cap _{it}	Capital formation ratio	306	0.220	0.041	0.100	0.350
city _{it}	Urbanization process	306	0.767	0.116	0.520	0.980

Table II. Descriptive statistics of variables related to transnational inclusive growth

Variable name	Variable definition	Sample size ^a	Average value	Variance	Min.	Max.
demand _{jt}	Domestic demand scale (trillion yuan)	1,460	0.138	0.183	0.010	1.490
wage _{jt}	Wage level (10,000 yuan)	1,460	3.436	1.275	1.210	29.58
lmar _{jt}	Factor marketization index	1,460	4.882	1.292	-1.210	12.23
skill _{jt}	Labor market skill structure	1,460	0.950	1.250	0.020	11.79
ind _{jt}	Industrial structure	1,460	0.509	0.127	0.150	0.880
cap _{jt}	Capital formation ratio	1,460	25.63	13.06	1.977	108.3
fdi _{jt}	Foreign capital utilization	1,460	0.034	0.055	0.010	0.780
city _{jt}	Urbanization process	1,460	1.029	0.644	0.050	6.240

Note: ^aHere is the effective sample size after removing the samples with missing values of the variable from the original sample

Table III. Descriptive statistics of variables related to domestic inclusive growth

Table IV.
Empirical test of the
impact of domestic
demand scale on
absolute income levels

	Transnational sample			Domestic sample						
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
demand	0.075*** (0.011)	0.075*** (0.010)	0.071*** (0.009)	0.068*** (0.009)	0.069*** (0.009)	2.872*** (0.654)	2.967*** (0.644)	2.830*** (0.642)	1.913*** (0.567)	1.286* (0.674)
ind		-5.856*** (1.064)	-4.850*** (0.968)	-4.158*** (0.971)	-4.273*** (0.975)		-3.795*** (0.602)	-4.374*** (0.618)	-4.922*** (0.544)	-4.868*** (0.545)
city			-20.361*** (2.568)	-18.764*** (2.562)	-18.693*** (2.561)			0.287*** (0.075)	-0.057 (0.069)	-0.053 (0.069)
cap				2.784*** (0.818)	2.789*** (0.817)				0.062*** (0.003)	0.063*** (0.003)
fdi					-0.002 (0.001)					-1.180* (0.689)
cons	2.648*** (0.137)	6.946*** (0.792)	21.873*** (2.013)	19.561*** (2.088)	19.597*** (2.087)	3.039*** (0.094)	4.958*** (0.318)	4.975*** (0.317)	4.148*** (0.282)	4.225*** (0.285)
n	306	306	306	306	306	1,460	1,460	1,460	1,460	1,460
r2_w	0.1465	0.2326	0.3780	0.4038	0.4070	0.0157	0.0470	0.0583	0.2723	0.2741
r2_b	0.0179	0.0035	0.0628	0.0593	0.0606	0.3853	0.2846	0.2533	0.2072	0.1520
r2_o	0.0186	0.0044	0.0559	0.0521	0.0532	0.2216	0.1693	0.1584	0.2030	0.1664
F	46.52***	40.93***	54.50***	45.38***	36.65***	19.25***	29.77***	24.93***	112.84***	91.00***
FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Notes: The empirical results are all calculated and collated by Stata14.0. The numbers in parentheses are the standard deviations of the regression coefficients.
***, ***, *Significant at 10, 5 and 1 percent levels, respectively

5.2 The impact of the scale of domestic demand on transnational inclusive growth

Table V reports the regression results of domestic demand scale on inclusive growth. First, the partial effect of per capita income on the scale of domestic demand is always positive, and this result holds whether or not the moderating variable or control variable is introduced. Second, the coefficient of domestic demand scale with the interaction term (*incd*) of the income level lag item is significantly negative, indicating that countries with lower income levels benefit more from the increase in domestic demand scale than those with higher income levels. Expanding domestic demand can improve the current situation of divergence of transnational economic growth performances, thus validating the promotion effect of domestic demand scale on transnational inclusive growth. Third, after adding the moderating variable of the development of the labor market, the coefficient of *indlf* is still significantly negative, further verifying the moderating effect of the development of the labor market on the inclusive growth based on the domestic demand scale. This finding indicates that the more perfect the development of the labor market is, the stronger the promotion effect of domestic demand scale on transnational inclusive growth. Inference 1 is thus verified.

5.3 The impact of domestic demand scale on domestic inclusive growth

Table VI reports the regression results of domestic demand scale to domestic inclusive growth. First, the partial effect of labor wage on the scale of domestic demand is always positive, and this result is true whether or not the moderating variable or control variable is introduced[12]. Second, the coefficient of domestic demand scale with the interaction term (*wd*) of the wage level lag term is significantly positive, thus indicating that groups

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
demand	0.075*** (0.011)	0.050*** (0.009)	0.114*** (0.024)	0.109*** (0.024)	0.111*** (0.024)	0.097*** (0.023)	0.094*** (0.023)	0.108*** (0.020)
income_1		0.430*** (0.051)	0.496*** (0.056)	0.475*** (0.055)	0.486*** (0.055)	0.399*** (0.058)	0.398*** (0.058)	0.397*** (0.053)
<i>incd</i>			-0.010*** (0.004)	-0.009*** (0.004)	-0.010*** (0.003)	-0.007** (0.003)	-0.007* (0.003)	
<i>incdlf</i>								-0.001*** (0.000)
<i>ind</i>				-3.140*** (0.927)	-3.296*** (0.926)	-3.280*** (0.901)	-3.045*** (0.906)	-2.964*** (0.894)
<i>fdi</i>					-0.002* (0.001)	-0.002* (0.001)	-0.002* (0.001)	-0.002* (0.001)
city						-10.400*** (2.796)	-10.284*** (2.783)	-9.286*** (2.772)
cap							1.783* (0.974)	1.743* (0.961)
cons	2.648*** (0.137)	1.363*** (0.196)	0.869*** (0.260)	3.260*** (0.750)	3.346*** (0.747)	11.674*** (2.354)	11.056*** (2.367)	10.135*** (2.353)
<i>n</i>	306	272	272	272	272	272	272	272
r2_w	0.1465	0.3457	0.3675	0.3971	0.4060	0.4394	0.4474	0.4616
r2_b	0.0179	0.4240	0.3447	0.3048	0.3044	0.0742	0.0772	0.0909
r2_o	0.0186	0.4217	0.3437	0.3053	0.3051	0.0779	0.0811	0.0950
<i>F</i>	46.52***	62.36***	45.52***	38.53***	31.85***	30.31***	26.72***	28.29***
FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Notes: The variable $incd_{it}$ refers to $income_{it-1} \times demand_{it}$ and $incdlf_{it}$ refers to $incd_{it} \times lfw_{it}$. The empirical results were calculated and collated by Stata14.0. The numbers in parentheses are the standard deviation of the regression coefficients. *, **, ***Significant at 10, 5 and 1 percent levels, respectively

Table V. Empirical test of domestic demand affecting transnational inclusive growth

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
demand	2.872*** (0.654)	1.944*** (0.701)	-3.495*** (1.174)	1.637** (0.708)	1.702** (0.703)	1.594** (0.661)	0.765 (0.795)	0.781 (0.795)
wage_1		0.227*** (0.034)	0.119*** (0.038)	0.215*** (0.034)	0.194*** (0.034)	0.091*** (0.034)	0.088*** (0.034)	0.088*** (0.034)
<i>wd</i>			1.130*** (0.197)					
<i>wds</i>				0.004*** (0.002)	0.004*** (0.002)	0.004*** (0.001)	0.005*** (0.001)	0.005*** (0.001)
<i>ind</i>					-2.520*** (0.662)	-4.358*** (0.644)	-4.271*** (0.645)	-4.188*** (0.663)
cap						0.051*** (0.005)	0.052*** (0.005)	0.053*** (0.005)
<i>fdi</i>							-1.445* (0.772)	-1.432* (0.773)
city								-0.046 (0.087)
cons	3.039*** (0.094)	2.586*** (0.144)	3.065*** (0.165)	2.636*** (0.145)	3.965*** (0.378)	3.844*** (0.355)	3.950*** (0.359)	3.938*** (0.360)
<i>n</i>	1,460	1,176	1,176	1,176	1,176	1,176	1,176	1,176
r2_w	0.0157	0.0567	0.0884	0.0640	0.0782	0.1867	0.1897	0.1900
r2_b	0.3853	0.7320	0.5335	0.6964	0.5534	0.3199	0.2265	0.2287
r2_o	0.2216	0.3804	0.3112	0.3703	0.3136	0.2393	0.1881	0.1899
<i>F</i>	19.25***	28.39***	30.50***	21.50***	19.97***	43.20***	36.68***	31.46***
FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Table VI.
Empirical test of
domestic demand
affecting domestic
inclusive growth

Notes: The variable wd_{it} refers to $wage_{it-1} \times demand_{it}$ and wds_{it} refers to $wd_{it} \times ls_{it}$. The empirical results were calculated and collated by Stata14.0. The numbers in parentheses are the standard deviations of the regression coefficients. *, **, ***Significant at 10, 5 and 1 percent levels, respectively

with higher wages (often high-skilled workers) benefit more from the increase in domestic demand scale than groups with lower demand wages. Expanding domestic demand does not improve labor income inequality, and the negative impact of domestic demand scale on domestic inclusive growth is verified. Third, after adding the two moderating variables of labor market development status and skill structure, the coefficient of *wds* is still significantly positive, further verifying the moderating effect of labor market development status and labor skill structure on the domestic inclusive growth based on domestic demand scale. In other words, the more perfect the development of the labor market, the higher the skill structure of the labor force and the less conducive to the realization of domestic inclusive growth in the wake of the expansion of domestic demand scale. Inference 2 is thus verified.

6. Conclusions and implications

In the post-financial crisis period, the export-oriented development strategy that has been implemented over time has become unsustainable. Thus, it has become a government and academic consensus to expedite the development strategy for the second wave of domestic demand-driven economic globalization to adapt to the new global economic situation and the changes in the competitive landscape. The implementation of such a strategy for latecomer economies to aggregate global innovation resources and seek innovation-driven economic development in the new era is of great significance to China, which is currently undergoing economic adjustment and structural transformation. Therefore, there exists an urgent need to comprehensively assess the potential impact of domestic demand-driven economic globalization on China's economic development.

In this paper, the GVC-NVC competition triggered by foreign investment, which is attracted by the domestic demand scale is included in the endogenous growth model of “Schumpeterian Innovation.” We also comprehensively explore, starting from the two dimensions of efficiency (sustainable economic growth and household income level) and equity (transnational economic growth convergence and domestic income distribution gap), the impact and orientation of domestic demand-based economic globalization on inclusive growth from an open perspective. Theoretical models and empirical tests show that while domestic demand-based economic globalization promotes transnational inclusive growth, this is not conducive to the realization of domestic inclusive growth. Moreover, the impact of domestic demand-based economic globalization on transnational inclusive growth is moderated by labor market development and the effect of domestic demand-based economic globalization on domestic inclusive growth is jointly moderated by the development of the labor market and the skill structure of labor. Specifically, the more perfect the labor market and the higher the skill structure of labor, the more conducive they are to the realization of transnational inclusive growth; in turn, this situation becomes more unfavorable to the realization of the domestic labor market’s inclusive growth.

The policy implications of this paper are very obvious. First, in order to give play to the promotion effect of domestic demand-based economic globalization on transnational inclusive growth, we should accelerate the construction of a unified market for production factors, such as labor. To this end, we should gradually liberalize the household registration restrictions, break the “beggar-thy-neighbor” phenomenon of regional division and reduce the institutional barriers that hinder the free flow of labor and other factors across regions and sectors. We should also effectively cut the transaction cost of the spatial flow of production factors through the inter-regional transportation infrastructure and information infrastructure interconnection in order to realize market allocation and free flow of production factors across the country. Second, in order to effectively promote the actualization of transnational economic growth convergence and the narrowing of the domestic income distribution gap, policy makers should work at reducing the negative impact of the expansion of domestic demand strategy on the country’s low-skilled labor force. To this end, the income distribution structure can be adjusted through transfer payment means in order to achieve Pareto improvement that compensates for the loss of income of low-skilled labor groups while not reducing the absolute income of high-skilled labor, or to improve the skill level of the low-skilled labor force by beefing up public education training for them, among other measures. Third, in order to attract high-quality foreign investment and encourage local enterprises to build NVCs, the market environment should be vigorously improved to foster equal competition between Chinese and foreign companies. To this end, the government is required to transform from implementing a selective industrial policy that has intervened or even replaced the market, to a functional industrial policy that fosters the market, encourages and regulates competition, and strengthens intellectual property protection to strengthen the foundation for further opening up.

Notes

1. According to the statistics of the PRC Ministry of Commerce, as of the end of 2017, Shanghai has become the MNCs’ preferred area for setting up R&D centers. The number of foreign-funded R&D centers has reached 426, accounting for a quarter of the total number of such centers in mainland China. Among them, 40 are global R&D centers, 17 are R&D centers in the Asia-Pacific region; 20 foreign-funded R&D centers were invested with more than \$10m; the total number of Chinese local employees in such centers topped 40,000, 52 percent of whom have an education level of masters or above.

2. Refers, respectively, to the Special Administrative Measures for Foreign Investment Access (Negative List) (2018 Edition) and Special Administrative Measures for Foreign Investment Access in the Free Trade Pilot Areas (Negative List) (2018 Edition). These were officially implemented by the National Development and Reform Commission and the Ministry of Commerce on June 28 and June 30, 2018, respectively.
3. According to the World Bank data, in 1980, China's per capita real GDP was merely \$465, accounting for just 6.0 percent of the per capita real GDP of the USA. However, after more than 30 years of development, China's per capita real GDP has climbed to \$8,919 in 2014, accounting for about 21 percent that of the USA.
4. The degree of transnational inclusiveness includes that between economies that successfully participated in the GVC labor division, and that between economies that participated/did not participate in the GVC labor division. As this paper examines the degree of inclusiveness of the Chinese economy in deep involvement in the GVC labor division, which is relative to developed economies; therefore, the degree of inclusiveness referred in this paper, unless otherwise stated, refers to the former case.
5. It can be considered that this is due to the communication friction between high-skilled labors in MNCs and local firms. Given the cultural and linguistic differences, MNCs must provide more training to the employed local high-skilled labor to achieve the same production efficiency as their native enterprises.
6. The final product market clearing condition has been utilized in solving the enterprise demand functions (14) and (15), so this condition is not shown here.
7. As the price is standardized to 1 in this model, the output growth rate is thus equal to the expenditure growth rate.
8. When L_{dt} increases, it is only required that $e_{\eta_t} > 1$, but when H_{dt} increases, it is required that $e_h > \tilde{e} = \max [1, \phi]$.
9. The framework has two advantages in analyzing inclusive growth. First, the impact of income determinants on growth and inequality is realized in the same model, resulting in an assessment framework equivalent to DID effects (Zhang and Wang, 2016). Second, incorporating the lag phase of the explained variable into the econometric model yields an effect similar to that of GMM method, thus the endogenous problem that may exist in the interpreted and explanatory variables is well controlled.
10. As Liu (2012a, b) pointed out in explaining the connotation of the domestic demand-based economic globalization, the big country economy under open conditions generally belongs to the type of "global economy based on domestic demand." Therefore, we select OECD countries as samples for the study of domestic demand-driven inclusive growth.
11. As the empirical research of domestic inclusive growth needs to use the factor marketization index provided by the China Marketization Index Report, the data have only been updated to 2014, so the sample period of 285 prefecture-level cities was selected from 2008 to 2014.
12. It should be noted that although the regression coefficient of the domestic demand scale (demand) is negative in Model (3), the partial effect of wage on the scale of domestic demand is greater than 0 (the average value of the wage lag period is 3.249, which is substituted into the calculation formula for partial effect of wage on domestic demand scale, it yields $\partial \text{wage}_{it} / \partial \text{demand}_{it} = -3.495 + 1.130 \text{wage}_{it-1} = 0.176$).

References

- Acemoglu, D. (2009), *Introduction to Modern Economic Growth*, Princeton University Press, Princeton.
- Amiti, M. and Konings, J. (2007), "Trade liberalization, intermediate inputs, and productivity: evidence from Indonesia", *American Economic Review*, Vol. 97 No. 5, pp. 1611-1638.
- Athukorala, P.C. and Kohpaiboon, A. (2010), "Globalization of R&D by US-based multinational enterprises", *Research Policy*, Vol. 39 No. 10, pp. 1335-1347.

-
- Bank, W. (2003), *Global Economic Prospects*, World Bank, Washington, DC.
- Basu, K. (2007), *Globalization, Poverty and Inequality: What Is the Relationship? What Can Be Done?*, Palgrave Macmillan, Basingstoke.
- Baumol, W.J. (1967), "Macroeconomics of unbalanced growth: the anatomy of Urban crisis", *American Economic Review*, Vol. 57 No. 3, pp. 415-426 (少卷次).
- Brandt, L. and Thun, E. (2010), "The fight for the middle: upgrading, competition, and industrial development in China", *World Development*, Vol. 38 No. 11, pp. 1555-1574.
- Chen, Q. and Chu, M. (2013), "Expanding domestic demand, rising wages and export – based on 228 cities panel data analysis", *Economic Theory and Business Management*, Vol. 33 No. 11, pp. 18-29.
- Costinot, A., Vogel, J. and Wang, S. (2013), "An elementary theory of global supply chains", *American Economic Review*, Vol. 80 No. 1, pp. 109-144.
- Dai, X. and Jin, Y. (2014), "Intra-product specification, institution quality and export sophistication", *Economic Research Journal*, No. 7, pp. 4-17, (少页码).
- Davis, D.R. and Weinstein, D.E. (1999), "Economic geography and regional production structure: an empirical investigation", *European Economic Review*, Vol. 43 No. 2, pp. 379-407.
- Eicher, T.S. and Turnovsky, S.J. (1999), "Convergence in a two-sector nonscale growth model", *Journal of Economic Growth*, Vol. 4 No. 4, pp. 413-428.
- Fang, Y., Dai, X. and Zhang, E. (2012), "On opening perspective of inclusive growth", *Journal of Nanjing University (Philosophy, Humanities and Social Sciences)*, Vol. 49 No. 1, pp. 24-31.
- Feenstra, R.C. and Hanson, G.H. (1995), "Foreign investment, outsourcing and relative wages", NBER Working Papers No. 5121.
- Ge, S. and Luo, W. (2015), "Multinational enterprise entry and industrial structural of manufacturing sector in China: based on global value chain perspective", *Economic Research Journal*, No. 11, pp. 34-48.
- Grossman, G.M. and Helpman, E. (1991), "Quality ladders in the theory of growth", *Economic Studies*, Vol. 58 No. 1, pp. 43-61.
- Hanson, G.H. and Xiang, C. (2004), "The home-market effect and bilateral trade patterns", *The American Economic Review*, Vol. 94 No. 4, pp. 1108-1129.
- Humphrey, J. and Schmitz, H. (2012), *Chain Governance and Upgrading: Taking Stock Chapters, 2004*, W.W. Norton, Joseph, AZ.
- Joseph, J.E. (2012), *The Price of Inequality*, W.W. Norton & Co., pp. 52-53.
- Li, J. and Ouyang, Y. (2016), "Large country effect, transaction cost and economic structure: a general equilibrium analysis of rich and poor countries", *Economic Research Journal*, No. 10, pp. 27-40.
- Liu, W. (2012a), "Dual embeddedness of product and function architecture—climbing path for local manufacturing to break through GVC low-locked", *China Industrial Economics*, No. 1, pp. 152-160.
- Liu, Z. (2012b), "Basing globalized economy on domestic demand: a strategy for China to share the dividend from the second wave of globalization", *Journal of Nanjing University (Philosophy, Humanities and Social Sciences)*, No. 2, pp. 51-59.
- Liu, Z. and Zhang, J. (2009), "From integration into GVC to construction of NVC: strategic thinking for Chinese industrial upgrading", *Academic Monthly*, Vol. 41 No. 9, pp. 59-68.
- Myers, S. and Marquis, D.G. (1969), *Successful Industrial Innovation: A Study of Factors Underlying Innovation in Selected Firms*, American Printer, Houston.
- Ni, H. (2017), "Dynamic changes to the technological content of China's exports and an international comparison", *Economic Research Journal*, No. 1, pp. 44-57.
- Piketty, T. (2012), *Capital in the Twenty-First Century*, Harvard University Press, Cambridge.
- Porter, M. (1998), *The Competitive Advantage of Nations*, Macmillan, Basingstoke.

-
- Ren, B., Liu, Z. and Ren, Y. (2016), "The endogenous causes and mechanisms of low-end locking in global value chains – based on the perspective of enterprise chain choice mechanism", *Forum of World Economics & Politics*, No. 5, pp. 1-23.
- Schmookler, J. and Brownlee, O. (1962), "Determinants of inventive activity", *American Economic Review*, Vol. 52 No. 2, pp. 165-176.
- Tan, H. and Zheng, J. (2012), "The mystery of coexistence of rapid economic growth and lag of service industry in China – based on the perspective of sector TFP", *China Industrial Economics*, No. 9, pp. 5-17.
- Zhang, J. and Liu, Z. (2007), "Demand factor and the formation of GVC – obstacle and breakthrough of positional block in developing countries", *Finance and Trade Research*, No. 6, pp. 1-10.
- Zhang, X. and Wang, G. (2016), "Rural infrastructure and inclusive growth in China", *Economic Research Journal*, No. 10, pp. 82-96.
- Zhang, X. and Zhu, Q. (2007), "The favorable interaction of firms' innovation and market power formation in global value chain", *China Industrial Economy*, No. 5, pp. 25-32.
- Zhuo, Y. and Zhang, M. (2008), "On distribution of gains in GVC and immiserizing growth – an analysis based on China's apparel industry", *China Industrial Economy*, No. 7, pp. 131-140.
- Zweimüller, J. and Brunner, J.K. (2010), "Innovation and growth with rich and poor consumers", *Metroeconomica*, Vol. 56 No. 2, pp. 233-262.

Further reading

- Xiang, D. and Jin, B. (2014), "Intra-product specification, institution quality and export sophistication", *Economic Research Journal*, No. 7, pp. 4-17.
- Zhang, S. and Liu, Z. (2009), "Industry transfer of GVC mode–force, influence and inspiration for China's industrial upgrading and balance development of areas", *China Industrial Economics*, No. 11, pp. 5-15.

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