The effect of external demand shocks on local industrial evolution: a study about the US-China trade friction

In recent years, geopolitical factors and the rise of local protectionism have continued to challenge the global economic order, and more and more external shocks are set to become important forces in reshaping local economic patterns and landscapes. This paper discusses the impact of external demand shocks on the local industry evolution using US-China trade friction as an external shock event. The study responds to the shortcoming of the current EEG literature, which ignores the influence of demand-side factors and external forces. Based on Chinese city-scale industrial data and *DID* models, this paper finds the following core conclusions:

First, the US-China trade friction, an external demand shock event, has had a significant impact on China's industrial evolution. Specifically, the US-China trade friction has led to a stronger path-dependent trend in the industrial evolution of Chinese cities and reduced technological complexity. The main reason for this phenomenon is the shrinking of exports as a global pipeline due to external demand shocks, which hinders the entry of external knowledge. The resulting decline in local innovative capacity hinders industrial path breaking and technological complexity. Second, there may be regional heterogeneity in the impact of external demand shocks on the local industrial evolution. This is reflected in the fact that regions with a higher degree of industrial related diversification are more exposed to external demand shocks. This is because inter-industry relatedness provides a channel for external demand shocks from a particular industry to spread to other industries, which in turn has a greater impact on the industrial evolution of the region as a whole.

What does it mean for regional development that external demand shocks can set local industries on a path of dependence and reduced technological complexity? We believe that, for developing countries, such a path would have a negative impact on regional development. First, developing countries are lacking the technology and capital to produce high-end products and services, and the reinforcement of the trend of path dependence will lock their industrial development into a low-end path. Second, the reduction in technological complexity has further weakened the ability of developing countries to develop high value-added industries. In addition, there are also usually large differences in levels of development between regions within developing countries, and the impact of external demand shocks may make it more difficult for lagging regions to catch up, thus increasing interregional disparities. How should developing countries reduce the negative impact of external demand shocks? In our view, developing countries should, on the one hand, actively explore new overseas markets to hedge against shocks from specific markets by diversifying overseas markets; and, on the other hand, they should actively explore and build up their domestic markets in order to replace external demand with internal demand.

Limitations to the findings of this paper remain, as evidenced by the fact that the choice of data and study cases prevents this paper from analyzing the long-term effects of external demand shocks. Some studies have found that there may be differences between the short-term and long-term effects of external demand shocks. In the short run, external demand shocks have predominantly negative effects. However, in the long run, external demand shocks may lead to “destructive creation” (Erixon, 2007; Erixon, 2016). The long-term effects of the US-China trade friction that occurred in

2018 cannot be shown as the data we obtained ends in 2022. After 2024, the macro data of the Chinese economy and technological breakthroughs in the high-tech sector seem to corroborate the positive impact of US-China trade friction, but this issue needs to be further examined.