

## Trace important coefficients for China's upgrading in global value chains

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International fragmentation of production has become pronounced, with firms at specific countries carrying out specialized activities in global value chains (GVCs). China has successfully involved in GVCs and become one of the most important engines for the recent trade boom by starting from the assembly part of GVCs. However, the value-added content of such assembly activities is much lower than that of other activities. As the growth rate of Chinese economy slid down to a medium level under the so-called "New Normal" state, it has become an urgent request for China to move up the GVCs and increase its value-added share in the global production networks. In response, the main aim of this paper is to identify those important elements (coefficients) in world direct-requirements matrix for which a small change in their levels maximizes China's value-added share in GVCs. That is, to trace important coefficients for China's upgrading in GVCs. To implement this study we employ the nonlinear optimization method. The goal of this optimization is to maximize the value-added share of China in the framework of a global IO model assuming some constraints hold true (or reasonable). If there is a global solution for the optimization problem, we can identify the important coefficients according to their importance. By employing the multinational IO tables from World Input-Output Database (WIOD), we can capture not only domestic important coefficients, but also international ones. The former allows one to understand in which (important) sectors of China should competitiveness be improved in order to enhance China's upgrading, and the latter provides information about which sectors in which (other) economies most affect China's upgrading in GVCs. We conduct this study to provide answers for questions regarding what the main directions of the future macroeconomic policy of China could be in order to increase its share in global value-added.