DEINDUSTRIALISATION IN ADVANCED ECONOMIES

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BASIC RESEARCH QUESTION

How has Germany maintained its manufacturing sector while other First World economies have not been able to?

KEY PAPER(S)

Clark, C. (1957). *The conditions of economic progress* (3rd. ed.). Lond on: Macmillan.

Kollmeyer, C. (2009). Explaining deindustrialization: How affluence, productivity growth, and globalization diminish manufacturing employment. *American Journal of Sociology*, 114(6), 1644-1674.

Paparrizos, J., & Gravano, L. (2015, May). k-shape: Efficient and accurate clustering of time series. In *Proceedings of the 2015 ACM SIGMOD International Conference on Management of Data*, 1855-1870. New York City, United States of America: ACM.

Rowthorn, R., & Coutts, K. (2004). De-industrialisation and the balance of payments in advanced economies. *Cambridge Journal of Economics,* 28(5), 767-790.

MOTIVATION/PUZZLE

Over recent decades, a worldwide pattern has emerged of the relative decline in the contribution that the manufacturing sector makes to the economies of the advanced, industrial nations. This pattern of decline is termed deindustrialisation. Germany appears to be an exception. Germany has maintained its manufacturing sector with no noticeable decline in its contribution to the national economy over the past two decades. Why Germany is exceptional is worthy of investigation.

THREE CORE ASPECTS OF ANY EMPIRICAL RESEARCH PROJECT

THE IDEA

Three studies are undertaken. The first study will empirically investigate Germany's apparent variance with other advanced, industrial economies. In the second study, a model of deindustrialisation in advanced economies will be conceptualised and estimated. This model will identify those variables that are significant in explaining the deindustrialisation process in advanced economies. In the third study, those variables from the model in Study 2 will be interrogated to highlight significant differences between advanced economies and the Germany case.

THE DATA

The primary sample consists of 29 national economies, all of which are currently classified as advanced economies by the IMF and have been considered high-income economies by The World Bank for the entirety of the data set. The final sample used for estimation purposes will comprise 21 economies after 8 are removed due to incomplete data. For each variable, annual data are to be assembled from 1995 to 2015 (1985-2015 for Study 2). All data will be collected from three online, publicly available databases: World Bank Databank, UNCTADStat and OECD.Stat. All databases are judged to conform to the requirements of data quality.

THE TOOLS

Study 1 will evaluate relative manufacturing patterns using the k-shape clustering algorithm.

Study 2 will conduct a fixed effects regression (with the effect fixed on the country and German reunification being accounted for using adjustment dummies). The regression is tentatively specified as follows:

$$MSPEA = x_0 + x_1 \log_e Y + x_2 (\log_e Y)^2 + x_3 TBD + x_4 Lib + x_5 TBDi + x_6 FC + x_7 PD + x_8 UPD + error$$

where: MSPEA = Manufacturing sector output as a proportion of economic activity for a specific country, Y = GDP per capita, TBD = trade balance with developed countries, TBDi = trade balance with developing countries, Lib = degree of trade openness, MFDI = inward – outward FDI flows, PD = relative price difference (manufacturing to services), and UPD = unbalanced productivity growth (manufacturing to services).

Study 3 will use two techniques; first, the k-shape clustering algorithm to evaluate each significant variable from Study 2; second, k-means clustering algorithm with the variables calculated as a difference over 5 and 10 year periods (unless structural breaks have been discovered).

All studies will be analysed using R in conjunction with the XLConnect and dwtclust packages

TWO KEY QUESTIONS

WHAT'S NEW

The phenomenon of deindustrialisation has been studied in the past. However, in the progression of an economy through economic development, deindustrialisation has been taken as inevitable. This research takes a new approach by analysing how countries can maintain their manufacturing sector as they develop economically.

SO WHAT

As of the 9th February 2017, Germany has the largest current-account surplus in the world, recording an almost US$300bn surplus. Meanwhile, the US has the world's largest deficit. Manufacturing is the backbone of economies, generating a higher output demand multiplier than any other sector. The decline in manufacturing is evidenced not only in output, but also in employment. The loss of employment has not always been taken up in other sectors, resulting in social dislocation with consequent political ramifications.

ONE BOTTOM LINE

THE CONTRIBUTION

The primary contribution of Study 1 is to the economic development literature, in that maintaining a manufacturing sector with economic development is not consistent with the assumption held in the literature since Clark (1957). Study 2 furthers the discussion in the deindustrialisation literature by considering relative output. Study 3 contributes to both the scholarly literature and to industry policy. This study contributes to the economic literature by furthering the discussion on deindustrialisation and economic growth. It also contributes to the international business literature because macroeconomic effects are the culmination and aggregation of individual firm decisions. The study contributes to government policy on industry development.

OTHER CONSIDERATIONS

Scope:

Advanced economies - deindustrialisation is present in some developing economies. However, conceptually, deindustrialisation in developing economies is different from deindustrialisation in advanced economies.

Risks:

The initial risk was that Germany did not exhibit a pattern different in relative manufacturing over time. However, after conducting the first study it was found that Germany did exhibit a different pattern.

Target Journals:

Study 1 – Journal of Economic Perspectives

Study 2 – Journal of Economic Perspectives

Study 3 – Journal of International Business Studies