

# Heterogenous Participation of Developing Countries in Global Value Chains

*A Mixed-Methods Analysis with  
Focus on the Philippines*

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## Abstract

This thesis is an empirical investigation of the engagement of the Philippines in cross-border production networks known as global value chains. *Heterogenous Participation of Developing Countries in Global Value Chains* addressed the research puzzle of heterogeneous or diverse modes of global value chain participation by developing countries. The study was guided by the central research question: How do developing countries participate in global value chains? The organizing principle of the research was a mixed methods strategy that enabled the inquiry into global value chain participation in both the manufacturing and service sectors of the Philippines, including the digital service sector of video game development. The quantitative methodologies were applied to the latest gross and value added trade databases (TiVA 2021) to achieve a more current assessment of global value chain participation after the Great Recession. The qualitative method known as the Global Value Chain framework structured the case study on the Philippine game development industry which is a contribution to the still nascent research on digital services value chains. The mixed methods approach further facilitated a methodological and data triangulation beyond the conclusions reached by the investigation of four dimensions of heterogenous global value chain participation in individual chapters.

The four dimensions correspond to the research sub-questions and are examined using distinct methodologies in a progressive order. First, the impact on firm productivity of global value chain participation is differentiated between developing and advanced countries through a meta-regression analysis performed on 1,083 firm productivity estimates. Second, participation in manufacturing global value chains is surveyed on a regional level using intra-industry trade indices, value added trade indicators, and revealed comparative advantage. The performance of five developing countries in East Asia, namely Indonesia, Malaysia, the Philippines, Thailand, and Vietnam, is assessed. Third, the participation of the Philippines in global manufacturing and service value chains is examined using Constant Value Added Share analysis, a novel application of the constant market share decomposition method. Finally, the participation of the Philippine game development industry in the game production global value chain is analysed as a case study using the Global Value Chain framework.

The overall findings of the thesis present a nuanced discussion of global value chain participation in response to the central research question: there is a heterogeneity of participation between developing and advanced countries, among developing countries in a region, between sectors in a developing country, and within the digital service value chain of game production. Several factors influence heterogeneity and confirm the complexity of developing country participation. Firms from developing countries tend to report lower productivity effects from global value chain participation compared to firms from advanced countries. The results of the meta-regression analysis suggest that the reported estimates are affected by severe publication bias and show evidence of a positive, but slight, genuine productivity effect for advanced countries. Global value chain participation among the five East Asian countries in manufacturing sectors differed between countries that had joined global value chains in the 1990s and 2000s. Further differentiation uncovered by the cross-validation of Grubel-Lloyd indices, value added trade indicators, and revealed comparative advantage showed mixed results for strong manufacturing sectors. Although its other manufacturing sectors registered gains, the Philippines was an outlier in its sluggish growth and the predominance of the computer and electronics sector where its participation has decreased.

The Constant Value Added Share analysis decomposed the performance of the Philippines in global value chains as domestic Value Added content of gross manufacturing exports and showed the loss of Value Added share. This result validated the findings for the Philippines in Chapter 3 where the lack of growth in participation was observed. Further application of Constant Value Share analysis to the domestic Value Added of Philippine gross manufacturing and service exports showed an improvement in the Value Added share effect. The increase was attributed to the information and communication sector, specifically the IT-business processing management service. The case study on the Philippine game development industry, a subsector of the information and communication sector, revealed the power asymmetry between lead firms in the pre-production and post-production segments and supplier firms in the Philippines which are mostly in the lower-value production segments. Upgrading in the game production global value chain would mean a shift to the higher-value production segments and greater presence in the pre-production and post-production segments. Progressing up the value chain requires addressing gaps in technology and technical skills, funding for original games, and greater support from the government.

This thesis attempted to address a gap in the literature on the participation of developing countries in global value chains with methodological and empirical contributions. The methodological contribution consists of the multi- method strategy and the use of gross trade and value added trade databases that allow for a more nuanced understanding of heterogeneity and, by bringing forward the discussion from manufacturing to digital services, offers a fresh perspective on the global value chain participation of developing countries. The focus on the Philippines, a developing country with heterogeneous global value

chain participation, is part of the empirical contribution as each developing country's path to progress could provide some lessons for other developing countries. While the findings of the thesis are not necessarily applicable to other developing countries, the use of complementary methodologies and a progressive approach to investigating a research puzzle could be offered not as a template but rather as guideposts for similar global value chain analysis in a different setting. Similarly, while the policy recommendations may be specific to the Philippines, the policy dilemmas that the methodological and data triangulation have surfaced may resonate and provide useful perspectives.