

1 Introduction

1.1 THE ISSUES

International fragmentation of production – the cross-border splitting of the production process within vertically integrated manufacturing industries – has been a key facet of economic globalization over the past few decades. This relocation of production processes has been the main driver of the rapidly growing trade in parts and components (‘fragmentation trade’) between developed and developing countries in recent years.¹

International vertical specialization implies two important forms of structural adjustment in the manufacturing processes of developed countries. First, it brings about a notable change in the patterns of the manufacturing trade by increasing fragmentation trade. Second, it has implications for both the level and composition of domestic employment. These are important and policy relevant issues.

Over the past two decades international fragmentation of production has been reshaping the structure and performance of Japanese manufacturing, providing an excellent laboratory to investigate these issues. Despite a proliferation of research on this topic, the few existing Japanese studies have focused narrowly on the growth of international specialization without placing this in the context of the related and ongoing process of structural transformation. In addition, the findings and policy implications reported in the existing literature have been mostly derived from studies of the US manufacturing experience. However, the impact of globalization processes such as production fragmentation on industry can be quite heterogeneous across countries, depending on factors such as the specific features of industrial and labour market structures. This important point has been largely ignored in existing Japanese studies that have not addressed some unique aspects of Japanese fragmentation trade and Japanese labour market structures.

This book examines the implications of the ongoing process of international fragmentation of production for structural adjustment and performance of Japanese manufacturing, paying attention to some peculiar aspects of industrial structure and labour markets in Japan. We place the Japanese experience in a comparative perspective, comparing it with

the US manufacturing experience to gain a broader understanding of production fragmentation, which is itself a part of the wider process of globalization.

This book makes three main contributions. First, it reports on the first rigorous comparative analysis of trends and patterns of fragmentation trade between Japan and the USA. Previous studies were unable to make a proper comparison of patterns of fragmentation trade across countries because of the lack of a suitable measure of the intensity of fragmentation trade. This problem was overcome in our analysis by the development of a new and improved measure.

Second, we undertake a deeper empirical examination of the effects of fragmentation trade on the skills structure of manufacturing employment in Japan, recognizing that the geographical location of fragmentation trade may have differential effects on demand for skilled workers. This is an important aspect of fragmentation trade which had been largely overlooked in the previous literature.

Third, the study informs the policy debate on the employment effects at home of increased overseas operations by multinational firms (MNEs), which has become the subject of heated debate in industrial countries because of concerns that these reduce home employment by 'exporting jobs'.

1.2 STRUCTURE AND PREVIEW

The book consists of eight chapters. Chapter 2 provides a comprehensive interpretative survey of the theoretical literature and a discussion of measurement issues central to this study. The major focus of the survey is to place the ensuing empirical analysis in the appropriate context, and to justify the methodological approach chosen to conduct the empirical analysis. The discussion on measurement issues focuses on the selected indicators of fragmentation trade and their strengths and limitations with respect to indicators used in previous studies.

Chapters 3 and 4 are concerned with structural changes in trade patterns brought about by the emergence of international fragmentation of production. Chapter 3 surveys the major structural shifts in the manufacturing trade patterns of Japan in the context of global trends and the direction and commodity composition of trade. Against this background, Chapter 4 examines the determinants of fragmentation trade in a Japan–USA comparison, using a newly compiled three-dimensional panel data set over the period 1988–2005. The analytical framework employed is the gravity model of trade flows. The basic gravity model is enriched by

incorporating additional variables suggested by the theory of production fragmentation.

Chapters 5 and 6 examine structural adjustments in the labour market in relation to the rapid growth of production fragmentation. Chapter 5 provides an overview of the changing nature of the labour market with special emphasis on the changing skill composition of employment and wages and the process of skill upgrading. Chapter 6 undertakes an econometric analysis of the skill upgrading effects of fragmentation trade, using 52 cross-industry panel data over the period 1980–2000.

Chapter 7 describes a firm-level data investigation of the implications of production fragmentation for employment adjustment in manufacturing MNEs. The ‘working hypothesis’ of the analysis is that expansion of the overseas operations of MNEs, driven by international fragmentation of production, has occurred at the expense of their domestic (home) employment. This hypothesis is examined using newly constructed firm-level panel data drawn from unpublished returns in two firm-level surveys, ‘The Basic Survey of Business Structure and Activity’ and ‘The Basic Survey of Overseas Japanese Business Activity’, conducted by the Japanese Ministry of Economy, Trade and Industry (METI).

Chapter 8 summarizes the major findings of the study, discusses the implications for better management of modern globalization in developed countries and draws policy implication for developing countries.

The findings can be summarized as follows. First, the most striking finding in a USA–Japan comparison is that unit labour costs and geographical proximity are the most important factors explaining the modality of Japan’s fragmentation trade. This finding suggests that Japan’s fragmentation trade is driven mainly by the availability of lower labour costs and geographical proximity. This is consistent with the dominant position of East Asian countries, especially China, in Japan’s fragmentation trade. This also suggests that Japanese firms’ outsourcing decisions are driven mainly by the desire to achieve overall cost reductions by relocating labour-intensive production processes into low-wage countries.

Second, it is found that the impact of fragmentation trade on skill upgrading varies depending on the factor endowment profiles of trade partners. The expansion of fragmentation trade with developing East Asian countries has had a significant positive impact on the skills composition of Japanese manufacturing employment. In contrast, trade with high-income countries (Organisation for Economic Co-operation and Development countries) has had a skill downgrading effect.

Third, the findings do not support the hypothesis that expanded overseas operations has had any adverse effects on home employment levels

of these MNEs. Instead, there is some evidence of a complementary relationship between overseas operations of MNEs and their home employment. Thus, the concerns expressed in public debates about the negative employment effects of foreign investments by MNEs appear misplaced.

Overall, the evidence indicates that the impact of international fragmentation of production is to alter the skill composition of the manufacturing labour force in Japan, increasing its skill intensity, rather than to reduce the level of home employment in MNEs. Combined with the findings of US studies, the main argument of this book challenges the popular perception that production fragmentation, a key facet of ongoing globalization, has been growing at the cost of domestic manufacturing jobs in developed countries. On the contrary, production fragmentation strengthens the international competitiveness of the domestic manufacturing bases of the country by reinforcing the tendency towards specialization in skill-intensive processes. While it cannot be entirely ruled out that this may have adverse effects on wages and employment of unskilled workers in manufacturing, it must be recognized that there are offsetting demand effects associated with the increased profitability of manufacturing MNEs. Hence, more empirical research is needed for any firm conclusions to be drawn on the effects of product fragmentation on low skilled workers.

NOTE

1. There is a significant and growing fragmentation trade among developed countries as well.