



## Factoryless goods producers in Japan



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### ABSTRACT

Manufacturing firms in advanced countries are servitizing alongside the deepening of the global value chain. In this respect, “factoryless goods producers” (FGPs) are attracting attention from economics researchers. This study, using firm-level data, presents findings on Japanese FGPs. In this study, FGPs are defined as non-manufacturing firms that outsource manufacturing processes entirely to other firms. Although the large majority of FGPs are classified in ICT or wholesale industries, some FGPs belong to retail or services industries. FGPs are larger and have higher productivity and wages compared with non-FGPs, invest more intensively in intangible assets, including research and development, and have relatively larger headquarters functions.

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### 1. Introduction

In recent years, owing to reductions in trade costs and trade barriers, international fragmentation of manufacturing production and deepening of the global value chain (GVC) has been advancing rapidly. In the process of manufacturing products, various services, such as transportation, communication, finance and insurance, and legal and accounting, are used as intermediate inputs. Recent studies on value-added trade using world input–output tables have made clear that there is considerable value of indirect trade of services embodied in traded goods (for surveys, see Johnson, 2014; Timmer et al., 2014). Francois et al. (2015) analyze the structure of services embodied in international trade on a value-added basis using panel data of the global input–output tables and state that advanced economies have more service-intensive exports than developing economies.

In vertically fragmented value chains, firms in advanced countries tend to specialize in skill-intensive tasks, which are not the fabrication process, but are tasks located at both ends of the “smile curve.” Upstream (pre-production) activities, such as development and design of products and downstream (post-production) activities, including marketing and after services, are

examples of skill-intensive tasks, which are service-producing activities based on a highly educated workforce. In short, at present, international competitiveness of an advanced country in value-added trade depends heavily on the quantity and quality of the intermediate services produced in that country.

In parallel with the deepening of the GVC, manufacturing firms in advanced countries outsource fabrication processes to low-cost countries, thereby servitizing their domestic activities.<sup>1</sup> In particular, the increase in the number of so-called “factoryless goods producers” (FGPs) has attracted attention in the United States (Kamal et al., 2013; Bernard and Fort, 2015; Houseman and Mandel, 2016). Although the precise definition and boundaries of FGPs have not yet been firmly established, these firms outsource all their manufacturing processes to other firms and their own domestic activities are devoid of manufacturing. According to recent studies, these firms are generally classified as wholesalers, but they engage in the design of products, coordination of production process, marketing, and distribution of their products, which are very different from the activities of traditional

<sup>1</sup> Tomiura (2005, 2007) and Tomiura et al. (2011) present empirical findings on the offshore outsourcing of Japanese manufacturing firms, but these papers do not deal with FGPs.

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wholesalers.<sup>2</sup> Examples of FGPs include the British appliance firm, Dyson Ltd., the well-known IT firm, Apple Inc., and the US fabless semiconductor manufacturer, Mindspeed Technologies Inc.

In Japan, First Retailing Co., Ltd. (UNIQLO), Nitori Co., Ltd., and Ryohin Keikaku Co., Ltd. (MUJI) are firms with similar characteristics to FGPs. These firms are classified as retailers and their domestic activities concentrate on planning and development of products, marketing, and retailing. For example, UNIQLO, a specialty store retailer in apparel, fabricates its products by contracting factories in China. Nitori produces furniture and home fashion products in low-cost Asian countries, such as Indonesia and Vietnam.

Among policymakers, there is a widely held view that maintaining domestic “mother factories” is necessary to preserve and strengthen the ability to develop new manufacturing products. From this viewpoint, FGPs may be regarded as an undesirable form of manufacturing firms. However, empirical evidence on FGPs has been scarce in most countries and Japan is no exception.

Against this background, we present empirical facts about Japanese FGPs using firm-level micro data from the Basic Survey of Japanese Business Structure and Activities (BSJBSA) conducted by the Ministry of Economy, Trade and Industry (METI) over the period 2009–2013. The rich information included in the BSJBSA enables us to identify FGPs and to analyze their characteristics in comparison with non-FGPs. In this study, we define FGPs as non-manufacturing firms that outsource manufacturing processes entirely to other firms. Specifically, firms (1) have no manufacturing sales from their own activity, (2) have no domestic subsidiary classified as manufacturing industry, and (3) outsource manufacturing processes to other domestic or overseas firms regarded as FGPs (“all FGPs”). As a subset of all FGPs, we define “offshoring FGPs” as firms that outsource manufacturing processes overseas. Firms that outsource manufacturing processes only domestically are defined as “domestic FGPs.”

To summarize the major findings of this study, first, although the large majority of Japanese FGPs are classified into information and communications (ICT) or wholesale industries, some FGPs belong to the retail or service industries. Second, the FGPs are larger in size and have higher productivity and wages than comparable non-FGPs. Third, the FGPs invest intensively in intangible assets, including research and development (R&D), and have relatively large headquarters functions.

The rest of this paper is structured as follows. Section 2 explains the data and defines the notion of the FGPs used in this study. Sections 3 overviews facts about Japanese FGPs, including industry classification and monetary values of outsourced manufacturing activities. Section 4 compares the productivity, wages, R&D activity, intangible investments, the size of headquarters functions, and import intensity of FGPs with comparable non-FGPs. Section 5 concludes with policy implications.

## 2. Data and definition

The firm-level micro data used in this study are from the BSJBSA conducted by METI for the fiscal years 2009–2013. The BSJBSA, an annual survey launched in the early 1990s, has been frequently used in empirical studies on productivity, international trade, and foreign direct investment of Japanese firms. The purpose of the BSJBSA is to provide a comprehensive picture of Japanese firms, including their basic accounting information, such as sales, profits, costs, wages, and book value of capital, numbers of employees,

numbers of domestic/overseas establishments, R&D expenditure, and foreign direct investments.

The BSJBSA provides representative official statistics for *all* Japanese firms with 50 or more regular employees and with capital of 30 million yen or more engaged in mining, manufacturing, electricity and gas, wholesale, retail, and several services industries. Approximately 30,000 firms are surveyed every year. Specific services industries covered by the BSJBSA are designated at the three- or four-digit industry classification levels. The designated service industries include credit card, installment finance businesses, eating and drinking services, information services, goods rental and leasing, scientific research, professional and technical services, and amusement and recreational services.

It should be stressed that firms have legal obligations to report back, because the BSJBSA is one of the Fundamental Statistical Surveys designated as such by the Statistics Act. The response rate of the BSJBSA is more than 85%. It should be mentioned that 1) small firms of less than 50 regular employees and 2) firms that have no establishment classified in mining, manufacturing, electricity and gas, wholesale, retail, and the designated service industries are not covered by the BSJBSA. Therefore, the total number and characteristics of FGPs reported in this study cannot be interpreted as representing all FGPs in Japan, including small firms. However, the sample of this study includes almost all medium and large firms active in industries covered by the BSJBSA.

In the BSJBSA, both the sales of goods and services and the number of subsidiaries (separately for domestic and overseas) by three-digit industry classifications are available.<sup>3</sup> Importantly, the BSJBSA collects information on firms' outsourcing of manufacturing activity (i.e., purchases of contract manufacturing services). Specifically, the survey asks whether a firm outsources manufacturing processes domestically or to overseas and the amount of total and the subtotal of overseas-outsourced values. The form and wording of the questionnaires are shown in [Appendix A](#). Although the total amount of outsourced value has been surveyed since the launch of the BSJBSA, the amount of manufacturing and service outsourcings was not clearly separated until the 2008 survey. In addition, the separate values for domestic and overseas outsourcing were not available until then. However, from the 2009 survey, the amounts of domestic and overseas outsourcing of manufacturing activities are available. This is why we use data starting from 2009.

In this study, FGPs are defined by utilizing the following information included in the BSJBSA: (1) the amount of sales from the firm's own manufacturing activity, (2) whether the firm has subsidiaries classified as manufacturers, and (3) the amounts of domestic and overseas outsourcing of manufacturing processes. In addition, three-digit industry classification, major accounting information (e.g., sales, costs, profits, book value of capital), and the number of employees are used to calculate labor productivity and total factor productivity (TFP). In addition, the R&D expenditure, intangible investments, ratio of employees working in headquarters functions, and amounts of imports are used for to compare the characteristics of FGPs with non-FGPs.<sup>4</sup>

<sup>3</sup> In the BSJBSA, a “subsidiary” is defined as a firm in which a parent firm owns more than 50% of the voting rights and an “affiliated firm” is a firm in which a parent firm owns no less than 20% but no more than 50% of the voting rights. In this study, subsidiaries and affiliated firms are aggregated and called “subsidiaries.”

<sup>4</sup> The “headquarters functions” is different from the “headquarters” in the BSJBSA. As the subsets of the headquarters establishments, “headquarters functions” include “planning,” “information processing,” “research and development,” “international affairs,” and “other (general affairs, personnel, and accounting)” functions. In this study, we define the size of the headquarters functions as the ratio of workforce engaged in the headquarters functions defined by the BSJBSA. The detail of the headquarters functions in the BSJBSA can be found in [Morikawa \(2015\)](#).

<sup>2</sup> [Houseman and Mandel \(2016\)](#) present a collection of recent studies on FGPs. [Byrne et al. \(2013\)](#) document the growth of FGPs in the semiconductor industry.

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