



From global factory to global mall? East Asia's changing trade composition and orientation



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ABSTRACT

This paper examines East Asia's changing trade composition and geographical orientation from 1999 to 2014 and draws implications for the region and beyond. Over the last two decades, East Asia has been one of the most successful regions in the world to build and connect cross-border supply chains. Introducing a new and simple analytical tool, we show that since 1999, East Asia has been successful in consolidating its role as a global manufacturing hub and is sourcing an increasing share of intermediate and capital goods directly from the region. Being a thriving manufacturing hub has also triggered rising demand for consumption goods. All East Asian countries, except the PRC, are selling an increasing share of their consumption goods within the region. Furthermore, more consumption goods from outside the region are also being attracted to East Asia. If these trends were to continue, East Asia has the potential to transform into one of the world's largest "malls".

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1. Introduction

Countries in East Asia have been particularly successful in building and connecting regional as well as global supply chains. As a consequence, their share of world trade in intermediate goods increased rapidly from 14% in 2000 to over 50% in 2014. The growing share of intermediate goods also reflects that East Asian economies are increasingly responsible for the production of manufactured goods worldwide. Baldwin and Kawai (2013) labeled the resulting trade pattern as "triangle trade." Advanced countries in East Asia export sophisticated parts and components to developing and emerging countries in the region where they are assembled into final goods and then shipped to high-income countries, particularly the United States (US), the European Union (EU), and Japan. East Asia was also described as "Factory Asia" (Baldwin, 2008) or the "Global Factory", since the majority of

world's final consumption goods originated from this region. Several studies have confirmed these findings. For example, studying gross trade flows in East Asia between 1992 and 2008, Athukorala (2014) observes a rapid increase of cross-border trade in parts and components and a high dependence on extra-regional demand for final goods. Analyzing trade in value-added,¹ Pula and Peltonen (2009) find that about one-third of East Asia's trade (excluding Japan) was determined by external demand. Furthermore, the authors note that developing East Asia's dependence on extra-regional export markets had steadily increased between 1995 and 2006.

Most studies on the topic of East Asia trade composition and orientation have focused on the time periods before the 2008

¹ Existing literature on East Asia's trade patterns studied the evolution of gross trade (e.g., Ng and Yeats, 2003; Athukorala, 2010) as well as trade in value-added (e.g. Mori and Sasaki, 2007; Matto et al., 2013). Despite the differences between the two approaches, proponents of both methods have reached largely similar conclusions regarding the prevailing patterns of trade in East Asia.

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global financial crisis (GFC). There are surprisingly few empirical works that examine in detail the impact of the global financial crisis (GFC) on East Asia's trade patterns. This paper retraces and analyzes the evolution of East Asia's trade patterns from 1999 to 2014. We are particularly interested in the question of how East Asia's trade has changed in its composition and geographical outreach.

In order to answer the first question of changing composition, we divide goods trade into four commodity groups (primary goods, intermediate goods, capital goods, and consumption goods) and analyze East Asia's trade flows from 1999 to 2014. In order to better understand how the geographical patterns of East Asia's trade have changed, we develop a simple tool that measures how far East Asia's trade has traveled. Additionally, we apply a gravity equation approach to gauge the geographical bias in East Asia's trade. Applying these different tools, we find evidence that trade in intermediate and capital goods within the region surged since 1999. Equally interesting is that, since 2011, an increasing share of trade in consumption goods has become reoriented: More and more final goods are now being exported to countries within the region and to the rest of Asia. It seems that East Asia's sustained economic growth has been translating into stronger demand for consumption goods.

The transformation of East Asia's trade pattern holds two important implications for the region. First, East Asia will be able to capture an increasing share of high value-added downstream value chain activities such as distribution, marketing, and customer services, which have been traditionally undertaken in major final markets, such as the EU and the North American Free Trade Agreement (NAFTA). Second, the average lead times for East Asia's exports to reach end-consumers would fall. Increased exports to nearer destinations may translate into lower transportation and inventory costs and eventually higher margins for companies or lower prices for consumers. These two consequences could be expected to further enhance the economic growth of East Asia and further accelerate the region's transformation into a global mall.

The paper is structured as follows: After a brief literature review, Section 3 introduces the goods typology and describes how East Asia's trade with the rest of the world has developed from 1999 to 2014; Section 4 introduces a simple tool to measure the distance traveled by goods and applies it to a trade data set of East Asia; and in Section 5, we specify a standard gravity model and run regressions that show how East Asia's trade patterns have changed.

2. Evolution of East Asia's trade patterns

2.1. Definition and source of trade data

Since 1999, East Asia was able to expand trade (exports and imports) with the region and the rest of the world 4.5 folds (from \$2.18 trillion in 1999 to \$9.76 trillion in 2014). As a corollary, East Asia's share in world trade has grown from 19.3% in 1999 to 28.1% in 2014. However, the expansion of East Asia's trade volume has not been smooth. The crash of the dot-com bubble in 2000–2001 as well as the GFC led to contractions of both imports and exports. The rapid growth of East Asia's share in global trade was not due to an equal expansion of trade in all commodity groups. In order to better understand how trade in certain commodity groups has evolved, we divide all export flows into four broad commodity groups, namely:

- i Primary goods, including food and beverage, fuel, lubricants, and primary industrial supplies for industry.

- ii Intermediate goods, including processed goods mainly for industry and parts, components for capital goods and transport equipment.
- iii Capital goods, including machinery and equipment used by producers as inputs for production.
- iv Consumption goods, including household goods and government final product purchases.

These commodity groups are based on the United Nations (UN) Broad Economic Categories (BEC) classification (developed by the UN) which classifies traded goods by stages of production.² The exact definition of the four commodity groups can be found in [Appendix](#).

We consider this typology particularly pertinent in our research context. As explained in the introduction, trade in East Asia has been driven by regional production networks. The production of many manufactured goods is divided up among East Asian countries according to their comparative advantage in performing certain processes or tasks. As a result, intermediate goods become intensively traded within East Asia. Apart from intermediate goods, the production of goods requires two major inputs: primary goods, such as industrial supplies, as well as capital goods, such as machinery. We have therefore singled them out as additional product groups. The last product group consists of consumption goods, which are the main output of the production process.

The trade flow data used for our research was downloaded from the UN Comtrade database.³ To increase the reliability of trade data, we downloaded the bilateral trade data in terms of imports for the four commodity groups listed above using the UN Broad Economic Categories classification. Our main sample therefore consists of the bilateral trade flows between 13 East Asian economies (ASEAN + 3)⁴ and 190 economies (the 13 East Asian economies). The time period covered is 1999–2014. In total, our main sample holds 28,525 positive trade flows.

After an initial analysis of this rich data, we have decided to divide East Asia into three groups: Group 1 consists of Japan and the Rep. of Korea, Group 2 of the PRC and Group 3 of ASEAN 10. The reason for this grouping is that the economies in these three groups are at different levels of economic development and display distinctive export patterns. In addition to dividing all exporters into three groups, we have further facilitated the analysis by creating five geographical groups for the destination of the exports: East Asia (ASEAN members, the PRC, Japan, and the Republic of Korea), Rest of Asia (all Asian countries, including the Middle East, see [Appendix Table A2](#)), 27 countries of the European Union,⁵ NAFTA, and the rest of the world (ROW).

² The trade data for the four commodity groups are computed via rearranging BEC codes at the 3-digit level referencing the methodologies recommended by the UN (2002) and ADB (2012).

³ As the focus of this study is on where intermediate and final goods are produced, and where they are going over time, rather than the contribution of economies to total product value created in production networks, the gross trade approach is adopted instead of the value-added trade. This is because the data coverage in terms of both time series and economies are also more complete for gross trade data than for value-added trade.

⁴ The ASEAN members are Brunei Darussalam, Myanmar, Cambodia, Indonesia, the Lao PDR, Malaysia, the Philippines, Singapore, Thailand, and Viet Nam. Our sample further includes Japan, the Republic of Korea, the PRC (including Hong Kong, China).

⁵ At the time of writing this paper the EU had 28 Members. The last member is Croatia, which joined in July 2013, but which is not included as EU Member in our sample.

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