Chapter 91
A Literature Survey on Extensive and Intensive Margins in International Trade

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ABSTRACT

Products and firms are homogeneous in traditional foreign trade theories; products show no horizontal or vertical differentiation. It is observed that growth in exports is only related to an increase in export quantity and that this is not decomposed into margins. Since Melitz's work, there has been an increase in studies that decompose the firms' heterogeneity and export growth in foreign trade into extensive and intensive margins. The concepts are addressed in the literature known as "new-new" foreign trade theories which include extensive margins, the number of exporting firms, the number of new trade partners, and the volume or variety of exported products. In brief, the growth of global trade is the result of new trade relations (extensive margin) or a rise in existing trade relations (intensive margin). As one of the rapidly developing trade theories in international economics, the main purpose of this study is to conduct a literature survey on the extensive and intensive margins of export growth.

INTRODUCTION

Recent literature on international economics focuses on the sources of trade growth. Economists divide export growth into two categories: extensive and intensive margins. "Extensive margin" is ending the export of previously exported goods, or exporting goods that were not previously exported. This margin commonly indicates that growth in exports stems from the change in diversity. On the other hand, the intensive margin explains the extent to which foreign trade grows or shrinks due to changes in currently traded goods (Gao, Whalley, & Ren, 2014). Therefore, foreign trade progresses over two different margins or is divided into these two margins. The first is the "intensive margin", which is the pre-existence of a bilateral trade relationship and its development over time. The second is an "extensive margin", which

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is the start and subsequent growth of international trade between countries that did not trade with each other in the past or the termination of existing ones (Felbermayr, & Kohler, 2006).

Theoretically, since the differences in firm-level productivity is significant in foreign trade, incorporating a firm heterogeneity into foreign trade models means that “foreign trade is decomposed into an increase in the average exports of firms that were previously exporters (“intensive margin”) and the number of exporters selling to other markets (“extensive margin”)” (Dutt, Mihov, & Van Zandt, 2013). Margins can be expressed in the equations as follows:

$$\chi^{mn} \cong \chi^{mn}_{EM} + \chi^{mn}_{IM}$$

Here, it is seen that the growth of total exports from country *m* to country *n* is decomposed into extensive and intensive margins (*EM* and *IM*), or otherwise, their sum. The extensive margin can also be decomposed into price (or quality) and quantity (Hummels & Klenow, 2005; Kehoe & Ruhl, 2013). Efforts to decompose the two margins are usually specific to an industry or firm. Trade growth is driven by quantity, but it also means that, for sustainable growth, a country needs to allocate considerable amounts of capital, labor and natural resources to produce more than would be necessary. On the other hand, while trade growth is price driven and this price also reflects the quality of the product, such export growth may require more human capital and technological innovation to achieve sustainable growth. In these conditions, export growth is analysed in terms of extensive and intensive margins, quantity, price and variety (Bingzhan, 2011).

In traditional foreign trade theories, such as the models of Ricardian and Heckscher-Ohlin, products are homogeneous; there is no horizontal and vertical differentiation, and export growth is only based on an increase in quantity. In Krugman’s (1979, 1980) new foreign trade theory, intra-industry trade product diversity is explained in the scope of choices and scale economies. In the new trade theory, export growth is based on the extensive margin since large economies will produce and export more goods under these conditions (Gao, Whalley & Ren, 2014).

In contrast to traditional theories and within the scope of new-new trade theories which assumes the existence of heterogeneous firms, Melitz (2003) mentioned the term “extensive margin” in foreign trade, which means that foreign trade grows with the emergence of new export firms, new trade partners, or otherwise an increase in the number of export firms. In new-new trade theories, the extensive margin may include the number of export firms, the number of new trading partners, and the number or variety of exported products. As a result, growth in world trade stems from new trade relations (extensive margin) or an increase in existing trade relations (intensive margin).

The main purpose of this study is to conduct a literature survey on the intensive and extensive margins of international trade. The following part of the study will provide an overview of selected theoretical and empirical studies on the subject.

BACKGROUND

Eaton and Kortum (2002), Melitz (2003) and Chaney (2005) initially examined the decrease of fixed and variable costs following the liberalisation of foreign trade and its effects on margins. The main idea of these studies was that when such costs decrease, “extensive” margins must rise in order for firms

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