## Firms' Export Growth: Product Mix and Destination Portfolio

## May 2015

## Yanling Wang\*

School of International Affairs, Carleton University. Ottawa, ON, K1S 5B6. Canada. E-mail: Yanling.Wang@carleton.ca. Phone: 1(613)520-2600 ext. 2626; Fax: 1(613)520-2889. And School of Economics, Henan University.

Acknowledgement: I benefited from comments from the seminar participants at the Guangzhou meetings of the Chinese Economists Society, Henan University and the Trade Forum in Carleton. Financial support from the Research Development Grant from Carleton University is greatly acknowledged.

Firms' Export Growth: Product Mix and Destination Portfolio

Abstract

This paper studies the joint importance of product-destination mix for firms' export

growth. Utilizing a very detailed panel data on Chinese firms' export transaction at the firm-

product-destination level from 2000 to 2006, the paper decomposes Chinese export growth of the

ordinary trade at the intensive and extensive margins, emphasizing the role of firms, products

and destinations. To that end, the paper groups firms, firms' products and firms' destinations into

five exclusive categories: new, continuing, exiting (dropped if for products/destinations), one-

time and occasional. We find that continuing firms are the major driving forces for China's

export growth of ordinary trade, accounting for nearly 90%. For *continuing* firms, their export

growth largely derives from their *continuing* products (88%) or *continuing* destinations (86%),

not much from variations in products or destinations. However, Continuing firms maintain an

active product mix for their new and continuing destinations, and an active destination portfolio

for their new and continuing products. For multi-product or multi-destination exporters, they

maintain a top product or a top destination export strategy.

Keywords: Products Mix, Market Penetration, Multi-Product, Multi-destination, Exporters

JEL Codes: F1

2

#### 1. Introduction

In recent years, international trade theory has focused increasingly on the heterogeneity within firms to account for the fact that exports by multi-product firms dominate world trade flows (Nocke and Yeaple, 2006; Helpman, 2006; Feenstra and Ma, 2008; Eckel and Neary, 2010; Arkolakis and Muendler, 2010; Bernard et al., 2011; Mayer et al., 2014;). The theories allow for the heterogeneity in product attributes within firms for multiple-product, multiple-destination exporting firms (with Arkolakis and Muendler, 2013 for a review of empirical regularities). At the heart of exporters' decision making, choosing a product mix for a certain destination portfolio is the core. This joint product-destination decision is a complex process, and is the result of the combination of factors.

This study takes a full empirical approach and focuses on the joint destination and product strategies of product/destination mix in driving firms' export growth. We aim to uncover the micro-level dynamics of exporting firms along the product and the destination dimensions and the joint mix of the two. To that end, we tackle simultaneously all three export entries: firm entry, destination entry, and product entry, and define a new trade relationship at the firm-product-destination level. It includes: a firm becoming an exporter for the first time; and existing firms' subsequent entry of: (a) exporting a new product to the same market, (b) exporting the same product to a new market, or (c) exporting a new product to a new market. We proceed to describe firms' product mix for its different destination portfolio, and the destination mix for exported products, and the interaction of the two. This leads to a decomposition of firms' export growth at the extensive and intensive margins along both product and destination dimensions.

The study builds on the knowledge in explaining exporters' product and geographic expansions. For the determinants of the geographic expansion of exporters, Eaton and his coauthors have produced insightful studies (Eaton et al., 2004, 2007, 2011). In particular, Eaton et al. (2011) examine the sales of French manufacturing firms in 113 destinations, and find that over half the variation across firms in market entry can be attributed to firm efficiency heterogeneity. The product dimension of exporting is explored by studies including Arkolakis and Muendler (2010), Bernard et al. (2007); Bernard et al. 2010 and Iacovone and Javorcik (2010), exploring product heterogeneity among exporting firms. For instance, Iacovone and Javorcik (2010) document intense product churning within firms in Mexican exporters and confirm the existence of within-firm product heterogeneity. This paper explores product

heterogeneity, destination heterogeneity and analyzes their relative contribution to China's export growth of ordinary exports<sup>1</sup>, along the extensive and intensive margins.

The analysis of the relative contribution of each margin has been done for several economies (Bernard et al., 2009 for the US; De Lucio et al., 2011, and Amador and Opromolla, 2013 for Spanish exports; Fabling et al., 2012 for New Zealand). This paper analyzes the intensive and extensive margins at the product dimension, the destination dimension, and the product-destination dimension, using the Chinese export firm-level data from 2000 to 2006.

The paper starts by quantifying the role of firm margin, destination margin and product margin in explaining the annual growth rate of China's total ordinary exports. We group firms, products and destinations each into five categories as *new*, *continuing*, *exiting* (*dropped* for products and destinations), *one-time* and *occasional* (defined in Section 2) depending on their export history, and analyze the different contributions from each subgroup. Next, it focuses on the choices of multi-product, multi-destination firms. In addition, the paper provides insights on product and destination switching, and the choice of products for their destinations and the choice of destinations for their products. It also analyzes firms' destination and product ranks.

Overall, a set of stylized facts is provided. We find that *continuing* firms account for not only the largest share of exporting firms, but also export the largest volume—the driving force for China's export growth. Similarly, for *continuing* exporters, their export growth is largely derived from their *continuing* products or *continuing* destinations, and at the core their *continuing* products exported to their *continuing* destinations. Thus, only to a minor extent, *continuing* firms' export growth comes from variations in product churning, destination churning or product-destination churning. Nonetheless, the data have shown constant and active dynamics in firms' entries, and *continuing* firms' introduction of product-destination mix.

#### 2. Firms, Products and Destinations

The analysis of product mix and destination mix at the firm-level is made possible by the availability of a database that combines detailed information on exports and imports of firms operating in China. The database includes all monthly import and export transactions from 2000 to 2006. A transaction record includes firm identification number, firm name, firm location, HS

<sup>&</sup>lt;sup>1</sup> Chinese Customs differentiate China's exports as ordinary and processing. Processing exports are those goods that relied predominantly on imports, and whose production in China involved mainly assembling of the imported materials.

(harmonized system) 8-digit product code, firm ownership type, trade type (imports or exports), nature of trade (ordinary versus processing trade), export value, volume and year, port name and location. For the purpose of this study, we focus on ordinary exports, because ordinary exports actively reflect firms' export expansion strategy through the product and destination dimensions, while processing trade is part of the global production chain, and firms might be on the receiving end of production orders, not necessarily active searchers for product-destination growth sources.

Powered by the rich panel data, we group firms/firm-products/firm-destinations into the most detailed and logical five categories. The analyses here are all carried out at this detailed level, a nice departure from the literature. Take firms to illustrate the point. For a given year t, we group exporting firms as continuing exporters (FC), new exporters (FN), exiting exporters (FE), one-time exporters (FONE) and occasional exporters (FOCC). A firm is termed as a continuing exporter in year t if it exported in the previous year, t-1, exported in year t, and would export in the next year, t+1. Exiting exporters in year t are firms that exported in the previous year, t-1, and exported in t, but stopped exporting completely thereafter. For entrants in year t, we put them into three groups, depending on firms' export history: new, one-time and occasional exporters. To be a *new* exporter in year t, the firm did not export in the previous year, t-1, exported in year t, and would export in the next year, t+1. One-time exporters in year t are those firms that did not export in t-1, exported in t, but stopped exporting completely during the sample period. Finally, occasional exporters in year t are those that exported during the sample period at least two years but never consecutively. For instance, if a firm exported in year t, but did not export in year t+1, and only re-emerged after year t+1, but then stopped again or re-emerged at least two years later. It is clear that the difference between new and one-time firms is that new firms are successful entrants as they stay in the export market for at least two consecutive years upon entry, but onetime firms are not. New firms capture the successful rate of entrants, while one-time firms the failure rate—this reflects firms' efforts of experiments either on products or on destinations or the combination of the two. The categorization of *occasional* firms emphasize that some firms constantly search for the right product-destination combination to stay as exporters, but are not successful. Similar groupings are done for firms' products and for firms' destinations, as new, continuing, dropped (exiting), one-time and occasional. With this most refined differentiation of firms, firm-products and firm-destinations, we can effectively delineate the respective contributions to China's ordinary export growth from each component and at the same time,

provide new stylized facts for future theoretical modelling, especially for the dynamic joint determination of product-destination mix.

#### **2.1. Firms**

In the sample period, there are 213,485 unique exporting firms engaging in ordinary trade, with 614,164 firm-year observations. Table 1 lists the number of active exporters by type in each year (however, truncations in the beginning and the end year make it impossible for the classifications for either year). Clearly, there is a very active dynamics (sorting) going on among exporters. Each year, there are a large number of successful entrants breaking into the exporting markets, accounting for mid 20s percentage points (new firms) while unsuccessful rate of entry is small. The numbers of *one-time* and *new* firms reflect respectively entrants' failing and successful experimentation in exporting, but most entrants are successful in that they would continue exporting the next year. For instance, in 2001, there are a total of 15266 entrants (the sum of new, one-time and occasional firms), and 12192 or 79.86% would continue exporting the next year, with 1019 or 6.67% would export at least once though not consecutively later in the sample. Every year, many firms exit the exporting markets for good (around 10 percentage points). Continuing firms are the largest group of exporters every year, accounting for around 60%. Taken together, continuing firms and new exporters account for around 85% of all exporting firms each year, indicating that the overwhelming majority of firms would export in the next year. New and continuing exporters also increase significantly on a yearly basis.

It is particularly interesting to compare the number of firms in each group, as that reflects the dynamics and transition among firms. The changes in the number of *continuing*, *exiting* and *occasional* firms from one year to the next are related with firms' status switching from the previous year to the next. The increase in the number of *continuing* firms in year *t* strictly comes from the switching status of some *new* firms in *t*-1 to *continuing* firms in *t*, minus the number of those *continuing* firms that exited the export markets in *t*-1. *Exiting* firms in year *t* strictly comes from the switching status of some *new* firms and/or *continuing* firms in *t*-1 to cease exporting after year *t*. The number of *occasional* firms in year *t* comes from those *one-time* that exported at least in *t*-2 or earlier, but entered again in year *t*.

Table 2 documents the average export volume per firm for years 2001 to 2005. Clearly, *continuing* firms are the largest exporters, exporting several times as large as the closest second,

new firms. Successful entrants (new firms) are much larger in export volume than unsuccessful ones (one-time firms), and occasional firms are the smallest. When firms exit the exporting markets, they decreased their exports volume significantly—exports for both new firms and continuing firms are larger than those for exiting firms. Combined with the statistics in Table 1, it is thus clear that continuing firms, absolutely the largest both in trade volume and in numbers, are the major driving force in China's ordinary exports.

#### 2.2. Firm-Products

The product codes in the data are recorded at the HS 8-digit level, a very refined category. Table 3 summarizes the number of products exported by all firms in total in the sample period at the 8-digit, 6-digit, 4-digit and the 2-digit level respectively.

At the 2-digit or 4-digit level, there are not much variations in product numbers exported across years. While at the 6-digit level, the number of products exported increases dramatically: from a total of 1252 at the 4-digit to a total of 5363. Working with over 12 hundred products does not give the same freedom to study product switching/churning as working with over 53 hundred products. From the 6-digit to the 8-digit, the number of products exported increases from 5363 to a further 7989, or a 49% increase. We will carry out our analysis for product-destination mix at the 6-digit level so that the sufficient large product numbers gives us enough freedom to examine the core issues, but at the same time, to avoid being too micro-focused with the 8-digit level of related products.

For each firm, we count the total number of unique products exported during the sample—a product is counted as long as it is exported once by the firm. Even at the chosen 6-digit level, there are a big range of the number of products exported by firms, with a minimum of 1 and a maximum of 2056. We group firms into 8 groups according to the number of products they exported as: 1, 2, 3, 4-10, 11-25, 25-50, 51-100, and 101+.

Table 4 reports the number of products firms exported. For the unique 213,485 exporting firms, some firms only export 1 product, accounting for 19.63% (41,903 firms), while 10.93% of firms (23,342 firms) exported at least 51 products. The majority of firms export a good number of products: 26.64% export 4 to 10 products and 14.90% export 11 to 25 products. Overall, over 68% of firms exported at least 3 products, indicating that the overwhelming majority of exporters are multi-product exporters.

#### 2.3. Firm-Destinations

Chinese firms export to 236 countries/economic entities in the world during the sample period, and the number of markets entered are relatively stable each year. As to individual firms, there is a wide range of variations in the number of markets they entered (Table 5), with a min of 1 and a maximum of 182. We divide firms into 7 groups according to the number of markets they exported as: 1, 2, 3, 4-10, 11-25, 26-50 and 51+.

While it is not surprising to see that there are a quarter of firms export their products only to one market, and 12.59% only to two markets, but there are a quarter of firms exporting to 4-10 markets, and 17% to 11-25 markets, with another 12.44% of firms exporting to at least 26 markets. Together, 62.49% of firms exported products to at least 3 markets—indicating that the majority of firms are multi-destination exporters. Although multi-product firms are not necessarily multi-destination exporters and vice versa, we will show later that a good portion of exporters is multi-product and multi-destination firms.

## 3. Multi-product and Multi-destination Exporters

Since the majority of firms are either multi-product or multi-destination exporters, it will be interesting to examine more fully the product and destination mix of exporters. To that end, we carry out a two-dimensional tabulation for all the unique exporting firms with the number of products exported and the number of destinations entered, in Table 6. A few interesting observations emerge.

First, only a small fraction of firms are single-product and single destination exporters (27,417 firms, accounting for only 12.84%). The overwhelming majority of firms (accounting for more than 81%) exported either at least two products or to at least two markets. Second, even for single product exporters, nearly 35% of them exported that product to at least two markets, and nearly 21% of them to at least 3 destinations (single product but multi-destination exporters). That says that some firms introduce the same product to more markets to increase their export volume—expansion occurs at the extensive margin. Similarly, for single-destination exporters, nearly 48% exported at least 2 products to that market, and more than 31% exported at least three products—multi-product firms. Third, only 22.76% of all exporters exported one or two products to one or two destinations. Fourth, about 31% of all firms are multi-product and multi-destination exporters, indicating that they exported at least 3 products to at least 3 destinations. Finally, there

are only 2.5% of all firms, or 5,338, exporting over 100 products to over 50 destinations. However, they are the very might few among exporters, as indicated by the export volume per firm in Table 7.

Table 7 reports the average export volume per firm during the sample period by product-destination mix (the average trade volume for each product-destination group during the sample period is the average total trade volume for that group divided by the number of firms in that group). Clearly, firms with fewer products and fewer destinations have smaller export volumes. Firms' exports increase both with adding products or adding destinations or both. The export volumes for these multi product and multi destinations firms (with at least three products and at least three destinations) are much larger than those single-product and single destination exporters. At the extreme, the average exports per firm for those with only one product and one destination is not even .05% of those firms with over 100 products and over 50 destinations.

Taken Table 6 and Table 7 together, it is easy to get the importance of the mighty few. The number of firms that have over 100 products exported to over 50 different destinations account for only 2.5% of all firms but their export volume account for 36.11% of the total ordinary exports. On the other hand, the single-product and single-destination exporters (12.8% of total firms) account for only 0.87% of total exports. Obviously, China is no exception that its exports are driven by multi-product, or multi-destination firms, with multi-product and multi-destination firms leading the way.

#### 3.1. Firms' Top Products

The majority of firms export more than one product. It thus remains of research interests to examine the relative importance of firms' products within firms—this will help uncover whether firms have core products in terms of export volume. To that end, we first get the export volume for each firm-year, and for each firm-product-year. Then, we calculate the average export volume for each firm over the number of years that firm stays as an exporter. For each firm-product, we calculate the average export volume for the firm-product over the number of years the product was exported by the firm. The ranking of the products within a firm is done by comparing the average export volume of the different products. We keep the focus on the top 6 products. To get the export share for each of the top 6 products, we divide the average firm-

product export volume by the average firm export volume. We do this for each product-destination mix, documented in Table 8.

The information embedded in Table 8 is very rich. First, firms have a top product, and the top product is the driving force for firms' exports. Firms expand their exports around their core product by either introducing them to more destinations or introducing new products or both. For firms with fewer than 5 products, the top product accounts for the vast majority of firms' exports. Even for firms that export 11 to 50 products, the top product still accounts for roughly half. The next important product sits with a distant second. Second, for those firms over 50 different products, the importance of the top product is still dominant, with export volume twice as large as the second important one. Third, the share of the top product falls with the increase of firms' exported products. Firms' top product pattern also reflects firms' efforts in seeking a dynamic destination mix for their products.

### 3.2. Firms' Top Destinations

When firms export many products, firms tend to export their products to many destinations. Unlike fostering a top product, maintaining a top destination might be challenging. It is either that the market is large for a firm's product(s), or firms have to keep sending new products to the destination. Using the similar method to calculate the export shares for firms' top product, we get the export shares for firms' top destinations in Table 9.

Interestingly, Table 9 reveals that firms have their top destination as well. And the importance (the export share) of the top destination has a similar pattern as firms' top product. Although it is not clear how firms keep their top destinations, it will not be surprising if dynamic analysis reveals that multi-destination firms keep the right product mix for their top destinations to keep their status and to serve as a testing ground for firms' new products.

### 4. The Product-Destination Mix for Continuing Firms

As shown earlier, *continuing* firms are the largest in firm numbers and in export volumes. Although it is clear that the majority of firms export either multi products or to multi destinations, it remains of interests to see how *continuing* firms actively form their product mix, destination mix and product-destination mix. We will look at each in detail below.

#### 4.1. Product Mix for *Continuing* Firms

On average, each *continuing* firm exports around 20 products, consisting of all categories of products (Table 10). This also helps explain why continuing firms record the largest volume.

A few observations merit discussions. First, the number of *continuing* products is the largest—reflecting undoubtedly the important status these products posses for *continuing* firms. Second, the numbers for *one-time* and *new* products are very close and large. This indicates that *continuing* firms introduce new products to markets—while some are successful and become *new* products, and some are not and thus are dropped (*one-time* products). The successful rate is lower than the failure rate—reflecting firms' constant innovation and efforts to bring in new and successful products to the market. Third, *continuing* firms also annually drop some products, and keep trying for their *occasional* products. This delineates a vivid picture of *continuing* firms' product mix: introducing new products, dropping old products and keeping continuing products.

### 4.2. Destination Mix for Continuing Firms

On average, *continuing* firms also have a colorful destination mix, recorded in Table 11. It reveals some interesting observations. First, *continuing* firms on average have a large number of markets for their products, around 9 to 11 each. Second, *continuing* destinations are the major markets: they are the largest in number. Third, *new* destinations are important new markets for *continuing* firms, and the associated successful rate is much larger than the failure rate (from *one-time* destinations). Fourth, *continuing* firms also drop certain destinations—reflecting firms' failure to find the right product mix for those markets. Fifth, *continuing* firms try to keep their *occasional* destinations. All these point to an active destination portfolio for *continuing* firms.

#### 4.3. Firm-Product-Destination Mix

This is the finest level of the analysis. We will focus on the destination mix for *continuing* firms' *new* and *continuing* products, because the former represent growth potential, and the latter is an important existing force. Analyzing this leads to a firm-product-destination mix that will paint the colorful picture for firms' export expansion path along the product-destination path.

First, for the successfully added products—new products, continuing firms send them to all sorts of destinations in their portfolio (Table 12), though on average, they only have 1-2

markets. It is also clear that *continuing* firms send their *new* products mainly to their *continuing* destinations—reflecting their efforts in keeping their *continuing* destinations strong. Interestingly, *continuing* firms also send their *new* products to their *new* markets—the *new-new* combination. At the same time, *continuing* firms take every opportunity to expand the market potential for their *new* products by also sending them to *dropped* destinations, *one-time* destinations and *occasional* destinations.

A similar pattern can be observed for *continuing* firms' *continuing* products, though the importance of *continuing* destinations became even more obvious (Table 13).

On average, each *continuing* firm has on average 3-5 markets for its *continuing* products. Among which, *continuing* destinations are the most important markets. Firms also export their *continuing* products to *new* destinations, *one-time* destinations and *occasional* destinations, and even the *dropped* destinations in the effort to keep those destinations. It is also clear that *continuing* and *new* destinations are the major markets for *continuing* firms' *continuing* products—these two types of markets are relatively stable.

### 4.4. The Firm-Destination-Product Mix for Continuing Firms

Finally, we turn to the product mix for *continuing* firms' *new* and *continuing* destinations. We first discuss the product mix in firms' *new* destinations (Table 14). *New* destinations are tomorrow's potential continuing ones, and the statistics can reflect firms' underlying strategy for them in their product mix. It is apparent that *continuing* firms mainly export their *continuing* and *new* products to their *new* destinations—sending successful products to *new* markets to secure them. They also export unsuccessful products (*one-time* products), *dropped* products, and even *occasional* products to *new* destinations—reflecting firms' continuous efforts in experimentation for their product-destination mix.

For continuing firms' continuing destinations, the product mix pattern is similar but with a larger magnitude (Table 15). For each continuing destination, a continuing firm exports around 6 to 8 products on average. While continuing products are the major export products in these markets, continuing firms also export their new products, in addition to the dropped, one-time and occasional products. What is revealing is that aside from the overwhelming importance of continuing products, continuing firms put similar emphasis to export their other product mix to

their *continuing* destinations—reflecting firms' efforts to save the *dropped* products, and test their newly developed products in safe markets.

Either for firm-product-destination expansion path or for firm-destination-product path, it is clear that *continuing* firms constantly and actively carry out a product mix for their markets, and a market mix for their products, and the combination of the two. This reflects firms' dynamic product-destination mix to expand their export growth—there are active product switching, destination churning and product-destination selection.

#### 4.5. Upstream and Downstream Product Mix

Here, we present firms' product mix from the upstream and downstream angels to highlight firms' product web in related industries. Table 16 and Table 17 give simple tabulations to summarize the number of industries exporting firms operate respectively in the HS 2-digit and HS 4-digit sectors.

HS 2-digit level is the most aggregate, and thus it is not surprising to notice that nearly a third of firms operate only in one HS 2-digit industry, and 17.9% for firms only in two HS 2-digit level. Nonetheless, there are nearly half of the exporting firms operate in at least three HS 2-digit level, sending a strong signal that firms not only export a large number of products but also across industries even at the very aggregate level. On average, exporting firms operate in 6 to 7 HS 2-digit industries, with maximum of 90, indicating that many multi-product firms are also multi-sector firms.

At a more detailed HS 4-digit sector classification level, the picture does not change much at the lower end, but does change significantly at the higher end: 48% of firms operate within three sectors, but nearly a third of firms operate in at least 11 sectors, with a maximum of 2147 sectors. On average, firms operate in 17 sectors. These statistics indicate that firms produce a large number of products from many different industries, reflecting firms' strategy to develop a related product line of different but related products.

### 5. Export Growth at the Intensive and Extensive Margins

We now decompose China's export growth contributions from different angels. Over the years, total ordinary exports from China have increased steadily. In 2000, all firms in the sample exported US\$105 billion; and the export volumes have increased steadily and fast during the next

few years: they are US\$112 billion for 2001, US\$136 billion for 2002, US\$182 billion for 2003, US\$244 billion for 2004, US\$315 billion for 2005 and US\$416 billion for 2006, with an yearly average of US\$234.2 billion for the sample. In the later analysis, we apply the concept of intensive and extensive margins in each step to uncover at each stage, the importance of the intensive and extensive margins to China's export growth, paying particular attention to the product, destination and product-destination mixes.

## **5.1. Export Growth Contribution from Firms**

For export growth contribution from firms, we decompose China's export growth from the five types of firms, as below:

$$\Delta Y_t = \left\{ \sum_{f \in FN} \Delta Y_{ft} + \sum_{f \in FE} \Delta Y_{ft} + \sum_{f \in FONE} \Delta Y_{ft} + \sum_{f \in FOCC} \Delta Y_{ft} \right\} + \sum_{f \in FC} \Delta Y_{ft} \quad (1)$$

 $\Delta Y_t$  is the change in Chinese ordinary exports from year t-1 to year t. FN, FE, FONE, FOCC and FC are respectively the set of *new* firms, *exiting* firms, *one-time* firms, *occasional* firms and *continuing* firms. The first four components in the bracket capture aggregate export change at the extensive margin, and the last one at the intensive margin. For each year, the growth rate is calculated as the change in exports divided by the average exports of the two consecutive years in each category. This calculation has the advantage of smoothing out big fluctuations in growth rates. We calculated the relative contributions from each type of firms on a yearly basis and also over the sample period. Table 18 gives the associated results.

The table reveals the following. One, Chinese ordinary exports grow at a very fast rate: a growth rate of 23.74% from 2001 to 2005, with yearly growth rate ranging from 19.19% to nearly 29%. Two, *continuing* firms are the largest and most significant contributor in China's fast export growth: on average, close to 90% of China's export growth come from *continuing* firms. Combined with the previous statistics, this unequivocally implies that *continuing* firms are not only in absolute terms the largest exporting group with the largest exporting volume, but also have the fastest export growth. This has unequivocally sealed the important status of *continuing* firms in exports. Three, *new* firms (successful entrants) are the largest contributor for export growth at the extensive margin. Four, *one-time* firms contribute very little to China's export growth and so is the case for *occasional* exporters, while *exiting* firms exit the markets with a positive contribution to China's export growth, though small. Points three and four are also consistent with the previous analysis that *new* firms are the active players in exports.

### 5.2. Product/Destination Contributions to Export Growth for Continuing Firms

We now put the undivided focus on *continuing* firms to analyze their growth source. We consider their export expansion both at the product and at the destination dimensions. The first path focuses on firms' efforts to introduce products to markets, and the second one emphasizes firms' efforts to search destinations for their products.

For firm-product growth path, the decomposition is:

$$\sum_{f \in FC} \Delta Y_{ft} =$$

$$\sum_{f \in FC} \left[ \left\{ \sum_{p \in PN} \Delta Y_{fpt} + \sum_{p \in PD} \Delta Y_{fpt} + \sum_{p \in PONE} \Delta Y_{fpt} + \sum_{p \in POCC} \Delta Y_{fpt} \right\} + \sum_{p \in PC} \Delta Y_{fpt} \right]$$
(2A)

For firm-destination growth path, the decomposition is:

$$\sum_{f \in FC} \Delta Y_{ft} =$$

$$\sum_{f \in FC} \left[ \left\{ \sum_{d \in DN} \Delta Y_{fdt} + \sum_{d \in DD} \Delta Y_{fdt} + \sum_{d \in DONE} \Delta Y_{fdt} + \sum_{d \in DOCC} \Delta Y_{fdt} \right\} + \sum_{d \in DC} \Delta Y_{fdt} \right] \tag{2B}$$

Similarly, the first four components in each equation capture *continuing* firms' growth at the extensive margin, and the last one the intensive margin, while PN, PD, PONE, POCC and PC indicate respectively the set of *new*, *drooped*, *one-time*, *occasional* and *continuing* products. Parallel definitions are for DN, DD, DONE, DOCC and DC for destinations. In each equation, the four components in the big brackets capture export growth at the extensive margin, and the last component in the square bracket for the intensive margin. The associated growth rates are reported in Table 19.

Table 19 says that *continuing* firms' export growth largely comes from either their *continuing* products or their *continuing* destinations. For the long-term growth rate from 2001 to 2005, *continuing* products account for over 88% of their firms' export growth, and *continuing* destinations 86%. For products, the statistics imply that firms' product churning (introducing and dropping of products) only account for at the maximum 12% of *continuing* firms' export growth. Thus, *continuing* firms' export growth does not come from product variations, but rather from

their *continuing* products. Similar conclusions can be drawn regarding destinations that *continuing* firms' export growth does not come from destination variations, but rather from their *continuing* destinations. The slight difference is that the growth rate at the extensive margin arising from destinations does not fluctuate as much as that from products, and the contributions from *new* destinations are relatively stable; while those from *new* products are not. This tends to suggest that there are some challenges and thus bumps in introducing successful *new* products to markets, while for *new* destinations, firms could export the whole spectrum of their products to keep those destinations alive.

### 5.3. Decomposition along Firm-Product-Destination Path

This is the finest level. Firms could pursue a firm-product-destination growth path in that they introduce their products to different destinations and the emphasis is on products; or they pursue a firm-destination-product growth path to keep these destinations by exporting different products to them. Although *continuing* products and destinations are the leading and driving forces in *continuing* firms' export growth, we will also decompose for their *new* products and *new* destinations to uncover firms' strategy in developing and advancing their *new* products/destinations.

For firm-product-destination expansion path, the decomposition is:

$$\sum_{p \in \{PN, PC\}} \Delta Y_{fpt} = \sum_{p \in \{PN, PC\}} \left[ \left\{ \sum_{d \in DN} \Delta Y_{fpdt} + \sum_{d \in DD} \Delta Y_{fpdt} + \sum_{d \in DONE} \Delta Y_{fpdt} + \sum_{d \in DOCC} \Delta Y_{fpdt} \right\} + \sum_{d \in DC} \Delta Y_{fpdt} \right]$$
(3A)

Again, the four components in the big brackets capture export growth at the extensive margin, and the last component in the square bracket for the intensive margin. The extensive margin captures the growth from *new*, *dropped*, *one-time* and *occasional* destinations, while the intensive margin captures the growth from the *continuing* markets both for *continuing* firms' *new* and *continuing* products. The associated growth decomposition results are presented in Table 20.

For *continuing* firms' *new* products, the intensive margin has the largest impact on their annual export growth, for better or worse. It is evident that *continuing* firms exported their *new* products to every component of their destination portfolio: *new*, *dropped*, *one-time*, *occasional* and *continuing* destinations. This also reflects *continuing* firms' expansion strategy for their *new* 

products: to reinforce their old destinations (*dropped* and *continuing*), and to explore new destinations with new products (*new* destinations and *one-time* destinations). In fact, *new* destinations prove to be important growth source for *new* products at the extensive margin, reflecting *continuing* firms' new growth potential in *new* products-*new* destination mix. In particular, *continuing* firms also experiment with their *new* products to *occasional* destinations, apparently in efforts to keep them.

For *continuing* firms' *continuing* products, the pattern is crystal clear that exports in *continuing* destinations (the intensive margin) are the major growth source. The extensive margin for *continuing* products' export growth is positive, but with a much small magnitude. It is not apparent as to which channel affects the most in the extensive margin, though in general, the *new* and *dropped* destinations are the two largest growth sources.

For firm-destination-product expansion path, the decomposition is:

$$\sum_{d \in \{DN,DC\}} \Delta Y_{fdt} =$$

$$\sum_{d \in \{DN,DC\}} \left[ \left\{ \sum_{p \in PN} \Delta Y_{fdpt} + \sum_{p \in PD} \Delta Y_{fdpt} + \sum_{p \in PONE} \Delta Y_{fdpt} + \sum_{p \in POCC} \Delta Y_{fdpt} \right\} + \sum_{p \in PC} \Delta Y_{fdpt} \right]$$
(3B)

Similarly, the four components in the big brackets capture export growth at the extensive margin, and the last component in the square bracket for the intensive margin. The extensive margin captures the growth from *new*, *dropped*, *one-time* and *occasional* products, while the intensive margin captures the growth from the *continuing* products both for *continuing* firms' *new* and *continuing* destinations. Table 21 reports the associated results.

For *continuing* firms' *added* destinations, their export growth comes undoubtedly from *continuing* products—the intensive margin. *New* products are the most important component to drive export growth at the extensive margin for *continuing* firms' *new* destinations, though it is not that clear vice versa as indicated before.

For *continuing* firms' *continuing* destinations, although firms export the whole array of their product mix to these destinations, their export growth predominantly comes from *continuing* products. Exports from *new*, *dropped*, *one-time* and *occasional* products in *continuing* destinations reflect firms' diversification and expansion strategy, but their export growth contribution is limited.

Taken all together, we can conclude that *continuing* firms are the major driving forces in China's ordinary export growth, though there is an ongoing dynamic and active entry/exit at the firm, firm-product, firm-destination and product-destination level. On average, close to 90% of China's ordinary export growth is driven by *continuing* firms. For *continuing* firms, they derive their export growth mainly ( and overwhelmingly) from either *continuing* products (more than 88% on average) or their *continuing* destinations (more than 86% on average), though there is an active product (destination) mix at the extensive margin including *new*, *dropped*, *one-time* and *occasional* products (destinations). This implies that the intensive margin of continuing firms' continuing products or continuing destinations explain nearly 80% of China's ordinary export growth during 2000-2006. Product churning and product transition, as well as destination churning and status switching contribute to *continuing* firms' portfolio of *continuing* products and *continuing* destinations. Thus product variation and destination variation do not in themselves contribute significantly to China's export growth, however, they play an important role in adding new products and new destinations to continuing firms' portfolio of continuing products and continuing destinations respectively.

#### 6. Conclusions

This paper studies an important phenomenon of firm export expansion at the joint product-destination dimension. Utilizing a very rich panel data on Chinese firms' export transaction data at the firm-product-destination level from 2000 to 2006, the paper decomposes Chinese export growth at the intensive and extensive margins, emphasizing the roles of firms, products and destinations. To that end, the paper groups firms, firms' products and firms' destinations into 5 categories: *new*, *continuing*, *exiting*, *dropped* and *occasional*. We find that *continuing* firms are the major driving forces for China's export growth: for the five year export growth, continuing firms account for close to 90% of the 23.77% growth rate, with yearly growth contributions ranging from a low of 82.6% to a high of 94.5%.

For *continuing* firms, their export growth is largely derived from their *continuing* products or *continuing* destinations, not that much from variations in products or destinations, though the latter represent the essence of the extensive margin. Interestingly, *continuing* firms maintain an active destination portfolio for their *new* and *continuing* products, and an active product mix for their *new* and *continuing* destinations.

#### References

- Amador, J. and L. D. Opromolla. 2013. "Product and Destination Mix in Export Markets," *Reivew of World Economics*, 149:23–53
- Arkolakis, C. and M. Muendler, 2013. "Exporters and Their Products: A Collection of Empirical Regularities", *CESifo Economic Studies*, 59(2), 223-248.
- Arkolakis, C. and M. Muendler. 2010. "The Extensive Margin of Exporting Products: A Firmlevel Analysis", CESifo Working Paper Series 3309.
- Bernard, A. B., J. B. Jensens, S. J. Redding and P. K. Schott. 2009. "Trade, Product Turnover and Quality: The Margins of US Trade", *American Economic Review Papers and Proceedings*, 99(2): 487-493.
- Bernard, A. B., J. B. Redding and P. K. Schott. 2011. "Multiproduct Firms and Trade Liberalization", *The Quarterly Journal of Economics*, 126(3): 1271-1318.
- Bernard, A., Jensen, J., Redding, S., & Schott, P. 2007. "Firms in International Trade", *Journal of Economic Perspectives*, 21(3), 105–130.
- Bernard, A., Redding, S., & Schott, P. 2010. "Multi-product Firms and Product Switching", *The American Economic Review*, 100(1), 70–97.
- De Lucio, J., R. M ínguez-Fuentes, A. Minondo and F. Requena-Silvente. 2011. "The Extensive and Intensive Margins of Spanish Trade", *International Review of Applied Economics*, 25(5): 615-631.
- Eaton, J., Eslava, M., Kugler, M., & Tybout, J. 2007. Export Dynamics in Colombia: Firm-level evidence (NBER Working Paper 13531). Cambridge, MA: National Bureau of Economic Research.
- Eaton, J., Kortum, S., & Kramarz, F. 2004. "Dissecting Trade: Firms, Industries and Export Destinations", *American Economic Review: Papers and Proceedings*, 94(2), 150–154.
- Eaton, J., S. Kortum and F. Kramarz. 2011. "An Anatomy of International Trade: Evidence from French Firms", *Econometrica*, 79(5): 1453–1498.
- Eckel, C. and J. P. Neary. 2010. "Multi-product Firms and Flexible Manufacturing in the Global Economy", *Review of Economic Studies*, 77(1): 188–217.
- Fabling, R., A. Grimes and L. Sanderson. 2012. "Whatever Next: Export Market Choices of New Zealand Firms", *Papers in Regional Science*, 91(1): 137-159.
- Feenstra, R. C. and H. Ma. 2008. "Optimal choice of product scope for multiproduct firms under monopolistic competition", In Helpman E., D. Marin and T. Verdier (Eds.), *The Organization of Firms in a Global Economy*, Cambridge and London: Harvard University Press. Pages: 173-199.
- Helpman, E. 2006. "Trade, FDI and the Organization of Firms", *Journal of Economic Literature*, 44(3): 589-630.

- Iacovone, L. and B. S. Javorcik. 2010. "Multi-Product Exporters: Product Churning, Uncertainty and Export Discoveries", *The Economic Journal*, 120: 481–499.
- Mayer, T., M. Melitz and G. Ottaviano. 2014. "Market Size, Competition and the Product Mix of Exporters", *American Economic Review*, 104(2): 495–536.
- Nocke, V. and Yeaple, S. 2006. "Globalization and Endogenous Firm Scope", PIER Working Paper Archive No. 06–015, Penn Institute for Economic Research, Department of Economics, University of Pennsylvania.

**Table 1: Exporting Firms (Figures in Parentheses Are Percentages for Every Year)** 

	New		Exiting	One-time	Occasional	
	Firms	Continuing	Firms	Firms	firms	
	(FN)	Firms (FC)	(FE)	(FONE)	(FOCC)	total
2000						46,985
2001	12192	30988	5647	2055	1019	51,901
	(23.49)	(59.71)	(10.88)	(3.96)	(1.96)	(100)
2002	16290	36666	5135	1818	1701	61,610
	(26.44)	(59.51)	(8.33)	(2.95)	(2.76)	(100)
2003	20156	45871	6503	2413	2026	76,969
	(26.19)	(59.6)	(8.45)	(3.14)	(2.63)	(100)
2004	28641	57071	8776	4433	2114	101,035
	(28.35)	(56.49)	(8.69)	(4.39)	(2.09)	(100)
2005	30153	74845	11901	5823	1408	124,130
	(24.29)	(60.3)	(9.59)	(4.69)	(1.13)	(100)
2006						151,534
lo. of uni	ique exportin	g firms 2000-20	006			213,485

Table 2: Average Exports per Firm (unit: US\$' 000)

	New Firms	Continuing Firms	<i>Exiting</i> Firms	<i>One-time</i> Firms	Occasional firms
2001	7900	36200	3910	2740	1380
2002	8210	37600	3520	711	1200
2003	7090	40600	3500	2560	1710
2004	5080	41900	5900	2300	1560
2005	4390	40300	4430	4220	2230

**Table 3: Number of Products Exported in Total** 

Year	HS 8-digit level	HS 6-digit level	HS 4-digit level	HS 2-digit level
2000	6522	4889	1231	98
2001	6546	4870	1219	97
2002	6741	4978	1224	97
2003	6860	4965	1228	97
2004	6894	4968	1225	97
2005	7016	4985	1228	97
2006	7060	4986	1225	97
2000-2006	7989	5363	1252	98

**Table 4: No. of Products Exported by Firms** 

Number of Products	Frequency	Percent	Cumulative
1	41,903	19.63	19.63
2	26,027	12.19	31.82
3	18,360	8.6	40.42
4-10	56,880	26.64	67.06
11-25	31,814	14.9	81.97
26-50	15,159	7.1	89.07
51-100	10,278	4.81	93.88
101+	13,064	6.12	100
Total	213,485	100	

**Table 5: No. of Destinations Exported by Firms** 

Number of Destinations	Frequency	Percent	Cumulative
1	53,213	24.93	24.93
2	26,868	12.59	37.51
3	17,201	8.06	45.57
4-10	53,364	25.00	70.57
11-25	36,288	17.00	87.56
26-50	18,353	8.60	96.16
51+	8,198	3.84	100
Total	213,485	100	

**Table 6: Multi-product, Multi-destination Firms** 

Number		Number of Destinations							
of Products	1	2	3	4-10	11-25	26-50	51+	Subtotal	
1	27,417	5,727	2,544	4,670	1,294	229	22	41,903	
2	9,049	6,397	2,766	5,594	1,805	382	34	26,027	
3	4,617	3,665	2,460	5,266	1,874	434	44	18,360	
4-10	8,582	7,524	6,237	20,334	10,477	3,255	471	56,880	
11-25	2,535	2,462	2,170	10,847	9,082	3,851	867	31,814	
26-50	718	747	641	4,061	5,511	2,772	709	15,159	
51-100	240	283	317	1,918	3,970	2,837	713	10,278	
101+	55	63	66	674	2,275	4,593	5,338	13,064	
Subtotal	53,213	26,868	17,201	53,364	36,288	18,353	8,198	213,485	

Table 7: Average Exports per Firm by Product-destination Group (Unit: US\$000)

No. of			No.	of Destina	tions		
products	1	2	3	4-10	11-25	26-50	51+
1	68.6	108	161	332	896	1330	3020
2	70.7	102	141	306	787	1390	3530
3	92.1	123	168	321	1420	1750	4800
4-10	146	186	229	427	938	2450	4270
11-25	239	357	373	515	1090	2330	5510
26-50	391	550	555	682	1160	3120	7790
51-100	629	601	729	683	947	2590	8350
101+	845	1130	742	812	1040	2030	14600

**Table 8: Export Share of Firms' Top Products** 

	No. Products Exported								
Rank	1	2	3	4-10	11-25	26-50	51-100	101+	
1	1	0.824	0.743	0.631	0.491	0.464	0.255	0.154	
2		0.176	0.197	0.204	0.189	0.177	0.120	0.078	
3			0.060	0.090	0.102	0.098	0.077	0.053	
4				0.043	0.064	0.063	0.057	0.041	
5				0.026	0.043	0.043	0.045	0.039	
6				0.016	0.030	0.032	0.037	0.035	

**Table 9: The Export Share of Firms' Top Destinations** 

	No. Destinations Entered								
rank	1	2	3	4-10	11-25	26-50	51+		
1	1	0.816	0.722	0.58	0.409	0.308	0.231		
2		0.184	0.207	0.205	0.172	0.139	0.114		
3			0.07	0.103	0.105	0.09	0.076		
4				0.056	0.073	0.067	0.058		
5				0.036	0.054	0.053	0.047		
6				0.025	0.041	0.043	0.04		

Table 10: Average Number of Products Exported per Continuing Firm

Year	Continuing Prod	<i>Added</i> Prod	<i>Dropped</i> Prod	<i>One-time</i> Prod	Occasional Prod	Total
2001	6.05	5.06	2.47	5.38	0.77	19.73
2002	6.30	5.05	2.70	5.42	1.37	20.84
2003	6.66	4.11	3.03	5.05	1.36	20.21
2004	6.53	3.55	3.24	5.00	1.17	19.49
2005	6.07	2.75	3.70	5.70	0.60	18.82

**Table 11: Average Number of Destinations Entered per** *Continuing Firm* 

year	Continuing Dest	<i>Added</i> Dest	<i>Dropped</i> Dest	<i>One-time</i> Dest	Occasional Dest	Total
2001	4.62	2.40	0.85	1.21	0.46	9.54
2002	4.82	2.34	1.01	1.21	0.79	10.17
2003	4.99	2.12	1.13	1.26	0.80	10.30
2004	4.97	2.03	1.28	1.41	0.72	10.41
2005	4.91	1.76	1.63	1.83	0.36	10.49

Table 12: Average No. of Destinations per New Product per Continuing Firm

	Continuing		Dropped	One-time	Occasional	
year	Dest	New Dest	Dest	Dest	Dest	Total
2001	1.12	0.36	0.02	0.06	0.02	1.58
2002	1.18	0.37	0.02	0.06	0.05	1.68
2003	1.12	0.35	0.03	0.07	0.05	1.62
2004	1.08	0.38	0.03	0.09	0.05	1.63
2005	1.10	0.38	0.05	0.14	0.03	1.70

Table 13: Average No. of Destinations per Continuing Product per Continuing Firm

Year	Continuing Dest	New Dest	Dropped Dest	<i>One-time</i> Dest	Occasional Dest	Total
2001	3.11	0.42	0.13	0.14	0.09	3.89
2002	3.26	0.41	0.16	0.15	0.16	4.14
2003	3.27	0.38	0.18	0.16	0.16	4.15
2004	3.24	0.37	0.22	0.19	0.16	4.18
2005	3.32	0.37	0.32	0.27	0.09	4.37

Table 14: Average No. of Products per New Destination for per Continuing Firm

	Continuing		Dropped	One-time	Occasional	
year	Prod	New Prod	Prod	Prod	Prod	Total
2001	1.06	0.77	0.07	0.35	0.03	1.06
2002	1.09	0.79	0.05	0.31	0.06	1.09
2003	1.18	0.68	0.06	0.31	0.06	1.18
2004	1.18	0.66	0.06	0.31	0.05	1.18
2005	1.28	0.60	0.10	0.39	0.03	1.28

Table 15: Average No. of .Products per *Continuing* Destination per *Continuing* Firm

year	Continuing Prod	New Prod	<i>Dropped</i> Prod	One-time Prod	Occasional Prod	Total
2001	4.08	1.23	0.62	0.87	0.22	7.02
2002	4.26	1.23	0.60	0.87	0.40	7.36
2003	4.37	0.92	0.65	0.78	0.38	7.10
2004	4.26	0.77	0.69	0.77	0.33	6.82
2005	4.10	0.62	0.79	0.83	0.18	6.52

Table 16: Firms' Product Span across Sectors at HS 2-digit Level

No. of HS 2-digit Industries Operated	Frequency	Percent	Cumulative
1	71,806	33.64	33.64
2	38,220	17.9	51.54
3	21,865	10.24	61.78
4	14,407	6.75	68.53
5	10,035	4.7	73.23
6-10	24,108	11.29	84.52
11+	33,044	15.48	100
Total	213,485	100	

Table 17: Firms' Product Span across Sectors at HS 4-digit Level

No. of HS 4-digit Industries Operated	Frequency	Percent	Cumulative
1	52,361	24.53	24.53
2	29,995	14.05	38.58
3	20,003	9.37	47.95
4	14,238	6.67	54.62
5	10,875	5.09	52.03
6-10	32,084	15.03	67.06
11-25	31,814	14.9	81.96
26+	38,501	18.04	100
Total	213,485	100	

Table 18: Export Growth: Contribution from Different Types of Firms (%)

	Overall			Intensive Margin			
	Growth		New	Exiting	One-time	Occ'l	Con'g
	Rate	Net	Firms	firms	firms	firms	firms
2001-2002	19.20	2.20	2.25	-0.26	-0.01	0.21	17.00
2002-2003	28.79	2.21	1.36	0.57	0.14	0.13	26.58
2003-2004	28.95	5.05	3.34	1.15	0.45	0.11	23.90
2004-2005	25.51	1.41	0.43	1.06	-0.02	-0.06	24.10
2001-2005	23.77	2.43	1.55	0.69	0.13	0.06	21.31

Table 19: Continuing Firms' Export Growth: Product/Destination Dimension (%)

## **Continuing Firms' Export Growth: Product Dimension**

					Intensive Margin		
	Con'g Firms	Net	New Prod	<i>Dropped</i> Prod	One-time Prod	Occ'l Prod	Con'g Prod
2001-2002	17.00	2.66	4.07	-2.51	0.03	1.07	14.34
2002-2003	26.58	0.36	-1.86	1.43	0.30	0.49	26.22
2003-2004	23.90	3.39	1.42	1.05	0.46	0.46	20.52
2004-2005	24.10	3.27	0.88	1.47	1.21	-0.29	20.83
2001-2005	21.31	2.36	0.89	0.64	0.57	0.27	18.84

# **Continuing Firms' Export Growth: Destination Dimension**

					Intensive Margin		
	Con'g			Extensive N Dropped	One-time		Con'g
	firms	Net	New Dest	Dest	Dest	Occ'l Dest	Dest
2001-2002	17.00	2.12	0.51	0.70	-0.01	0.93	14.88
2002-2003	26.58	3.40	1.06	1.22	0.47	0.65	23.19
2003-2004	23.90	2.97	1.22	0.90	0.47	0.38	20.94
2004-2005	24.10	3.60	1.32	1.66	0.93	-0.32	20.50
2001-2005	21.31	2.86	1.01	1.10	0.51	0.25	18.43

Table 20: Continuing Firms' Export Growth: Product-Destination Dimension (%)

# **Growth Decomposition for** *Continuing Firms' Added Products*

	Con'g Firms'		Extensive Margin						
	Added			Dropped	One-time		Con'g		
	Prod	Net	New Dest	Dest	Dest	Occ'l Dest	Dest		
2001-2002	4.07	0.55	0.22	0.04	0.05	0.23	3.52		
2002-2003	-1.86	0.07	0.07	0.00	0.01	0.00	-1.94		
2003-2004	1.42	0.62	0.46	0.04	0.07	0.05	0.80		
2004-2005	0.88	0.13	0.05	0.03	0.07	-0.01	0.75		
2001-2005	0.89	0.29	0.18	0.02	0.05	0.04	0.60		

## **Growth Decomposition for** *Continuing Firms' Continuing Products*

	Con'g Firms'		Extensive Margin						
	Con'g			Dropped	One-time		Con'g		
	Prod	Net	New Dest	Dest	Dest	Occ'l Dest	Dest		
2001-2002	14.34	1.64	0.44	0.47	0.04	0.69	12.70		
2002-2003	26.22	2.66	0.89	0.92	0.33	0.52	23.56		
2003-2004	20.52	1.69	0.62	0.47	0.29	0.31	18.83		
2004-2005	20.83	2.57	1.10	1.19	0.48	-0.20	18.26		
2001-2005	18.84	1.99	0.74	0.74	0.30	0.21	16.92		

**Table 21: Continuing Firms' Export Growth: Product-Destination Dimension (%)** 

# **Growth Decomposition for** *Continuing Firms' Added Destinations*

	Con'g Firms		Extensive Margin						
	Added			Dropped	One-time		Margin Con'g		
	Dest	Net	New Prod	Prod	Prod	Occ'l Prod	Prod		
2001-2002	0.51	0.06	0.22	-0.12	-0.09	0.06	0.44		
2002-2003	1.06	0.17	0.07	0.04	0.02	0.03	0.89		
2003-2004	1.22	0.60	0.46	0.02	0.08	0.03	0.62		
2004-2005	1.32	0.21	0.05	0.06	0.13	-0.01	1.10		
2001-2005	1.32	0.26	0.18	0.01	0.05	0.02	0.74		

## **Growth Decomposition for Continuing Firms'** Continuing Destinations

	Con'g Firms'			Intensive Margin			
	Con'g			Dropped	One-time	Occasional	Con'g
	Dest	Net	New Prod	Prod	Prod	Prod	Prod
2001-2002	14.88	2.18	3.52	-2.37	0.09	0.93	12.70
2002-2003	23.19	-0.37	-1.94	1.04	0.18	0.34	23.56
2003-2004	20.94	2.11	0.80	0.68	0.24	0.39	18.83
2004-2005	20.50	2.24	0.75	1.04	0.67	-0.22	18.26
2001-2005	18.43	1.99	0.74	0.74	0.30	0.21	16.92