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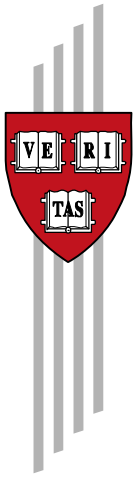


Working Papers

Center for International Development at Harvard University

Decomposing World Export Growth and the Relevance of New Destinations

Andres Zahler

Abstract

Looking to understand what drives countries' export growth in practice, I provide a decomposition of world export growth at the product variety level between new destinations, new products, and growth in value of old varieties. New destinations play a significant role, accounting for 37 percent of the growth in developing countries. By comparison, entry into new product categories—a margin that has received considerable attention—explains just 7 percent of export growth. Exploring tha nature of destination expansion reveals it is neither automatic nor permanent. Even relatively competitive sectors face difficulties penetrating new destinations, and these difficulties are negatively correlated with population size and GDP per capita. Consistent with pervasive experimentation and failure, more than a third of all products in new destinations exported only once to a destination in the sixteen years studied.

JEL codes: F14, F15, F19

Key words: International trade, export growth, destinations, export growth decomposition.

1 Introduction

This paper explores simple but empirically important question: what explains world export growth? In particular, how relevant are new destinations, new products, and growth in value? And, do successful exporters exhibit a different pattern of growth within these dimensions

than those that struggle? Rather than focusing on the theory or causal mechanisms behind export growth, I attack these questions from a measurement perspective. This approach reveals a number of stylized facts that emphasize the role of destination discovery over product discovery and the crucial but difficult journey of geographic exploration. Given the increasing importance of 'export led' growth as an applied concept, particularly in developing economies, understanding what drives exports shines light on the potential payoffs and pitfalls of engaging in different strategies for export growth.

Both the empirical and policy-oriented trade literature devotes considerable attention to export determinants such as the patterns and impact of structural transformation, the role R&D and technology adoption, and the capacity to sustain comparative advantages vs. expand productive capabilities. With this focus on obvious forms of innovation, market penetration has usually been relegated to part of 'exporting more of the same'—an area of less active research. Recent microlevel data and the surge in theoretical research that tries to explain it has changed this situation somewhat by highlighting that market penetration is not automatic. Together with gravity there seem to be important fixed and sunk costs of exporting and, in particular, of exporting to specific destinations. These costs inhibit firms' product expansion into foreign markets. But how important, really, is the destinations dimension?

This paper decomposes export growth along the dimensions of (a) products number, (b) destination diversity, and (c) product value (or quality). Analyzing exports in this way is not only methodologically interesting but conceptually enlightening. The type of innovations required for firms to increase value, say, are distinct from the ones required to produce new products or the ones required to enter a given geographic market. Selling coffee in a new market is different from making coffee for the first time or improving an existing brand. Moreover, the policies required to solve potential market or coordination failures in these three dimensions are also different—compare, for example, R&D incentives with export promotion agencies and free trade agreements. The multidemensional reality of innovation that drives export growth is widely recognized and studied. This paper extends earlier efforts by focusing on a less explored empirical dimension—the importance of new destinations for specific products.

To do this analysis, I first present a simple decomposition framework that separates new destinations, new products, and the growth of the value in the initial variety structure of exports. This framework is then used to decompose export growth for each country for the period 1984-2000 into the contribution of initial 1984 varieties (the value of products

that were exported in specific destinations in 1984 and which are still being exported in 2000 to those destinations), the contribution of new products (the value of products that were not exported in 1984 and were exported in 2000 to any country), and the contribution of new destinations (the value of products that were exported in 1984 but in destinations which were not served in that year).

Using Feenstra et al's (2005) robust world bilateral trade database, I find that for the period 1984-2000 the main source of export growth is the growth in the value of exported varieties that were already exported in 1984. For developing countries as a whole, value growth within existing products and destinations accounts for 55 percent of overall export growth. New destinations are the second most important dimension, accounting for an additional 37 percent, which is highly significant. New products—a dimension that has received tremendous empirical attention—accounts for only 7 percent of growth, which is surprisingly small. The basic stylized fact that emerges is clear: entering new countries is crucial to export growth.

Looking closer at the data, I find that countries whose exports grow fastest tend to grow faster in every export component than countries whose exports grow slower, but differentially faster in new destinations, particularly when compared to the slowest growers. Digging deeper into the destination margin exposes two additional stylized facts: First, even relatively competitive sectors of each country face difficulties penetrating new destinations, and these difficulties are negatively correlated with population size and GDP per capita. Second, more than a third of all new varieties introduced by any country are one-shot exports (products that are exported only once to a destination and never again in the period studied). This result suggests that experimentation and failure may be a pervasive phenomenon in the decision to export to a new destination. While not easily explained by recent trade theories, cost uncertainty in new destinations may play an important role. Together, these findings highlight again that importance of understanding destination decisions.

The rest of the paper is organized as follows. Section 2 summarizes the current state of relevant theoretical research related export decomposition techniques. Section 3 explains the decomposition methodology used in this paper. Section 4 describes the database used and provides some preliminary descriptive statistics. Section 5 details the main results of the paper. Section 6 provides additional insights on the relevance of new destinations. Finally, section 7 concludes and provides several potential lines of further research.

2 Literature Review

2.1 Trade Theory

Destinations have recently become a prominant issue since new microlevel data that showed that only a small percentage of firms export (and only the most productive ex-ante do[1]), that they export in every economic sector (in developed economies) and that they export typically to very few places. These issues, which were not able to be explained by 'new' trade theories, motivated a prolific recent wave of new theories of trade at the firm level, which have increasingly specific predictions with respect to destinations.

Previously almost no trade theories had anything to say about the relevance or the structure of trade with respect to destinations. The models that dealt with bilateral trade were gravity models, which were accurate in explaining the level of trade between countries but not complex patterns of growth. These models, and the traditional or new trade theory models that produced them, typically could not predict why countries do not trade many of their products with other countries or why they do not trade at all. They implicitly or explicitly implied that countries would trade all products to all the world (i.e.: new trade theories with love for variety) or that they would specialize in the products in which they have a comparative advantage and the extent of trade with other countries would depend on the difference in relative factor endowments (traditional Heckscher-Ohlin theory).

With the shift towards the firm, modeling of fixed costs of exporting, together with firm heterogeneity, new theories have been able to predict why some firms do not export, and why others export only to some countries. If we aggregate this within product categories or at the country level these microeconomic barriers help explain why countries export some products and only to some countries. Exporting a specific product to a countries that is farther away and smaller is typically less profitable. In the limit, this increases the likelihood that the fixed/sunk costs tirms have to pay to enter are high enough so as to make it unprofitable to export in a given market. Only the most productive firms will have a higher chance of reaching more 'difficult' markets[2]. These costs are

[1] Bernard and Jensen (1999) and Clerides, Lach and Tybout (1998) found that exporters self select being the most productive ex ante, and not due to exporting, and provided a base for the theories of firm heterogeneity, explained in the following lines.

[2] These costs seem to be high enough to generate hysteresis effects associated with the decision of majority of firms not to export. See for example Roberts and Tybout (1997), Also Das Roberts and Tybout (2006) estimate these costs to be more than $300,000 for Colombian firms.

therefore modelled as firm specific, in some papers. In others, if there are sunk costs specific to individual destinations, and if destinations vary in terms of their profitability, relatively more productive producers will export to more destinations. If there are sunk costs specific to individual products, and if products vary in terms of their profitability for a firm, relatively more productive exporters will also export a wider range of products (Bernard et al 2007).

Besides this general prediction, the most known models have different assumptions and features that yield particular explicit and implicit implications for destinations. In general the extent of the importance of new market penetration is not predicted explicitly by any theory. Rather, what some of the recent theories do provide is basic predictions on the order of country penetration and on the relation between size and number of products exported and countries served. Within this new strand of research a few papers are worth summarizing briefly.

Melitz (2003) builds a general equilibrium model based on monopolistic competition and increasing returns, productivity heterogeneity, sunk costs of entry, and where the main source of uncertainty is in the productivity a firm will have prior to entry into an industry. He assumes sunk and variable costs of exporting, but the firms decide to export knowing their productivity and the fixed cost they have to incur. This means that exporting is not an uncertain activity. Only firms that draw the productivity above a threshold will find it profitable to export.

As Eaton et al (2005) indicate, the major cost of exporting in this model is getting out of the home market, since fixed costs are not destination specific. There are no specific predictions in the model about the importance of destinations. In the simplest setting of the original model, since all countries are of equal size firms do not export or export to all markets, so there is broad penetration of markets once you export. Bigger countries of have the same distribution of productivity, but a higher average productivity levels, higher relative number of firms, and a higher welfare due to more varieties. Dynamics are centered on reallocation of production between firms and the effect in the amount firms export, not the countries to where they do[3]. Like most recent models that seek to explain the cross-sectional patterns of product diversity and market entry, this paper therefore does not explain dimensions of export *growth*—the primary issue studied in this paper.

[3]In extensions, such as Melitz and Ottaviano (2005), where they introduce endogenous markups bigger economies have more high productivity firms, which together with variable export costs besides fixed costs makes the penetration of markets differential for the higher productivity firms being able to reach smaller markets.

Bernard et al (2003) use a multicountry Ricardian model with stochastic firm heterogeneity. They do not introduce fixed costs of exporting but the standard iceberg costs, which together with international competition for similar varieties result in some countries exporting certain goods to certain (or all) countries. A firm will export "only when its cost advantage over its competitors around the world overcomes geographic barriers." One of the main implications of the model is that as a source country becomes more competitive in a given market (greater average efficiency, lower input costs or lower costs of delivery), it will export a wider range of goods to that market.

Eaton Kortum and Kramarz (2004, 2005) build a model with fixed costs of entering an individual market and variable costs of exporting. That is, costs have a destination country component that applies to all goods exported to that country and a component specific to the good. There is no component specific to the exporting country.

Their model predicts that there should be a ranking of export destinations. A firm should first sell to the most popular market in a given year, then to the second, etc. The most efficient firms are able to produce and export to lower popular destinations, but to be able to do this they must sell more in popular markets in order to lower costs (however, this prediction is not sustained by the data).

This is the only model that I studied that has a specific prediction of the number of countries to be served for a firm: if a firm sell to a market n it must sell to all markets more popular than n and in increasing quantities. Put another way, the model has a specific production of the sales in any given market by knowing how much is sold in less popular markets.

Calibrating the model with French data they find a clear relationship between the size of firms' sales in France and the number of markets served. It seems that to sell to unpopular markets firms must be big in their own country.

Helpman, Melitz, Rubinstein (2006) provide one of the most recent extensions to Melitz model to incorporate destination specific fixed, variable costs and generate a gravity equation. These costs are source and destination-country specific rather than firm specific, and do not depend on the productivity level of the producer as in previous models. .

Moreover, their empirical framework includes fixed trade barriers imposed by the importing country to all exporters and fixed export costs common across all destinations.

The power of their model is that it allows to predict from the model zero bilateral trade, one way and two-way bilateral trade.

2.2 Export Decomposition Literature

The second relevant literature for this paper is the export decomposition literature. Export decompositions have been carried out along several dimensions and using various techniques. While the basic idea is old, decompositions that take into account destinations are relatively recent. This paper builds on some of these exercises.

Two decompositions for export levels are worth mentioning. First, Hummels and Klenow (2005) examine why bigger economies export more than small ones. In doing so, they decompose exports into the number of goods exported (extensive margin) and the value per good (intensive margin). Using cross section trade data for 126 countries they find that the extensive margin accounts for 60% of greater exports of larger economies.

Second, Bernard, Jensen, Redding and Schott (2007) touch on destinations and analyze the product-destination margin, but at the firm level and for a single year. They decompose exports per country in the number of firms that export to that country, the number of products exported and value per firm/product, testing the effect of distance through firm participation. They find a significant effect of distance and GDP on the three, but a positive impact (distance) on the value exported per firm and product. They also find that firms that export many products also export to many destinations and account for the bulk of US exports. Also, the firm's decision of the number of markets to serve (and products) is systematically correlated with its characteristics [4].

Additionally, four papers from recent literature decompose particularly export growth.

Evenett and Venables (2002) decompose export growth from a small set of developing economies between 1970 and 1997, using 3 digit trade data. Using a similar methodology to this paper, they analyze products and destinations separately and seek to understand the reduction in the number of zeros in trade matrices. They find that new products account for 10 percent of export growth, while new destinations close to 30 percent. The remaining 60 percent of export growth can be attributed to products exported to destinations in 1970 which were still exported in 1997[5].

[4] These two papers provide methodologies that are not strictly comparable to the one used in this paper, mainly because their decompositions compares export levels between countries and this paper analyzes export growth within countries. Thus the extensive and intensive margins have different meanings. In the case of Hummels and Klenow to compare bigger exports of bigger countreis with smaller countries the extensive margin is defined as *more products* as compared to *new products* used in this paper.

[5] Their paper also uses gravity and dummies for distance between a market and

Eaton, Eslava, Kuegler and Tybout (2007) do a dynamic analysis of Colombian export growth between 1996 and 2005, decomposing it by entering, exiting and continuing firms in a year-to-year decomposition. They find that continuing firms drive most of year-to-year fluctuations. But taking a larger time frame (1996-2005) they find that continuing firm structure represents only 53 percent of growth (decomposed in 74 percent of surviving firms and -21 percent of dead firms), while new firms account for 47 percent of export growth[6]. They also find that in any year around 67 percent of new exporters last only one year exporting.

Helpman, Melitz and Rubinstein (2006) seeking also to explain and understand two-way or one-way zero trade, decompose export growth between exports from countries that already traded in 1970 in both directions and those who did not, finding that more than 90 percent of the growth of exports comes from trade relations that were two-way in 1970[7]. They show that the volume of trade of countries that traded with one another was significantly determined by the percentage of firms that engaged in international trade, more than from the value exported per firm. They conclude that the classical gravity estimations bias upwards the importance of distance on trade flows because it attributes to the volume of trade effects that affect the number of firms exporting.

Broda and Weinstein (2006) analyze the increase in product variety in US imports in the last 30 years, looking at the relevance of new categories and 'dead' categories between 1990 and 2001. Their analysis is focused on the number of varieties imported by the US, finding that almost half of the increase in the number of varieties seems to be due to an increase in the number of goods imported and the other half coming from more countries exporting to the US. The explanation for this last issue, according to the authors, is globalization plus value of variety. They also find that the countries that export more varieties are typical larger high income economies.

The methodology of decomposition of this paper is based on the Eaton et al (2007) decomposition which, as them, analyzes contribu-

its closest serving market to search for geographical spillovers in the probability of exporting a product.

[6]Their treatment of dead firms is different from this paper. Since they use firms as unit of analysis they include deaths in the extensive margin, substracting them from entering firms to get a net entry of firms. In this paper I substract dead varieties to continuing varieties to get the net growth of the original variety structure. See section 3 for details.

[7]Since their paper also analyzes export growth, compare their results with Evenet and Venables (2002), finding important differences. They conjecture that their sample is not representative and that what they name 'new destinations' are in many cases countries that traded with each other before possibly in other products.

tions to export growth between two point in time. In contrast to Eaton et al, I modify the unit of analysis to a *variety* (a product of a country in a specific destination) instead of a firm. This analysis is also similar to the decomposition of Evenett and Venables (2002), but the methodology that leads to those results takes together products and destinations (they analyze them separately) and thus this papers allows for richer interactions, looks at a broader country spectrum, and does a more robust analysis.

The product level focus on this paper allows for comparisons with other decompositions that use products as unit of analysis. In particular I will compare the results with Evenett and Venables (2002) and Helpman et al (2006).

3 Methodology

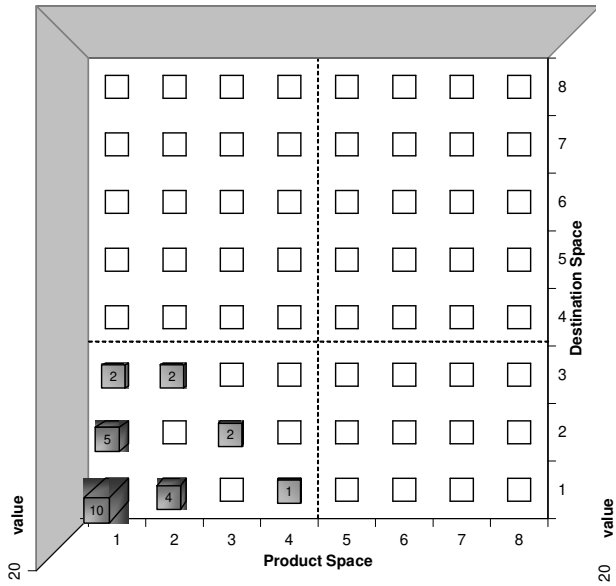
The basic idea of the methodology is to analyze exports from three dimensions: products, destinations, and value within those combinations of products and destinations. Each unique combination, which I call *varieties* or *product-destinations (PD)*[8] are the basic unit of analysis of the decomposition[9]. This will allow to decompose the **growth** of exports between two points in time into the contribution of new products, new destinations, and the growth in value of previously exported varieties.

The logic of the decomposition is very simple and is explained using Graphs 1 and 2 as examples. Graph 1 shows the exports of a hypothetical country in the base year, t_0, in the three dimensions described above. The X axis measures the number of potential different products the country can export; the Y axis measures the number of destinations it can export to; and the Z axis shows the value exported of each PD[10]. Each bar then represents a particular variety or PD exported.

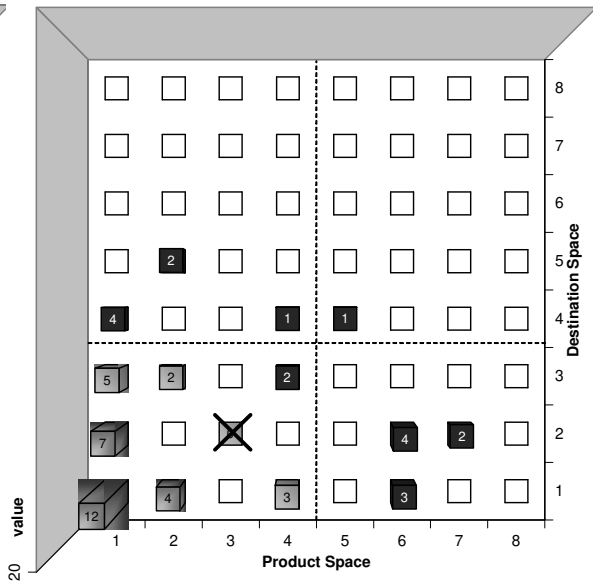
[8] For example, shoes exported to Canada from a given country are a different variety from shoes exported to New Zealand from the same country, from the exporters perspective.

[9] This idea of variety is analogous to Armington (1969) but from an exporter perspective. Even though the product might be identical, I want to argue that exporting a product to one country is a different thing from exporting the same product to another country because of the potential different costs, externalities, uncertainties, etc. which I discuss in the rest of the paper.

[10] The maximum number of products and destinations is fixed and represents the total product-destination space available in a year. In the example of the graph each space has 8 components.



Graph 1



Graph 2

At t_0 the country exports 4 products in 3 destinations . It doesn't export every product into every destination, but exports each of the 4 products in a subset of the 3 countries. In the example, the country export 7 varieties. I call the potential number of varieties (12) the country *potential PD space* in the base year, and is shown by the vertical and horizontal dashed lines in the graph, as the lower left quadrant drawn by those lines. Total exports correspond simply to the sum of the values exported of all the varieties where value is greater than zero. This is \$26 in Graph 1.

The dashed lines that define the t_0 potential PD space allow us to separate the product space into 4 quadrants, which define the logic of possible paths of export growth. These are shown in Graph 2 which represents export structure at t_1 and allows us to understand where and how much exports have grown between t_0 and t_1. It shows that exports have increased to \$52 (100 percent increase). First, looking at the original varieties, some of them continue to be exported in t_1 at higher (or lower) values and some disappear or 'die'. So part of the growth in exports is due to net growth of the *base year variety structure*. In the example, there are 6 surviving varieties that increase their value from \$24 to \$33. To this we subtract the value in t_0 of the *death* of varieties and which are not counted in t_1, which in the example is 2[11],

[11] In the case of this example the death of product 4 in destination 2 also represents

and is shown in Graph 2 with a cross. The net growth of the base structure is then \$7. I call this growth of the base variety structure the *intensive margin of growth.*

Second, exports grow through the 'colonization ' of new varieties. These are shown with dark bars in Graph 2. I call the value of the new varieties the *extensive margin of growth,* which is basically the value of **new** PDs that were not exported in the base year.

Furthermore, one can decompose the extensive margin into 4 different cases, using the four quadrants defined by the base year variety space. First countries can populate empty spaces in the lower left quadrant. This means that countries expand existing products to new destinations **for that product** but an already **known destination for the country**. In graph 2 product #4 in destination #3 with a value of \$2 represents that case. Second, the country can expand their exports of existing products to new destinations for that product *and* for the country. This is seen in the upper left quadrant. In the example there are 3 new varieties in that case, with a value of \$7. The expansion into the two left quadrants will be defined as *new destinations*, since it is the expansion of existing products into new export markets for the product, be it known or new for the country as a whole. This accounts for for \$9 in the example. Third, exports can be expanded into new products but into countries already colonized by other products of the country. This is seen in the expansion to the lower right quadrant in Graph 2. The country produces 2 new goods (#6 and #7) into existing markets, but they correspond to 3 varieties, worth \$9. Finally, the country can expand to new products which are exported to new destinations, which can be seen in the upper right quadrant. The sum of the two right quadrants will be defined as **new products**[12].The extensive margin can then be understood as the expansion of exports into new products, new destinations, or both.

3.1 Decomposition methodology

The graphical decomposition from above can be formalized in the following way: a country c's exports to the world in period t_1 can be thought

the death of the whole product 4.

[12]One can easily argue that *new products* are in fact new destinations too, because the new products are exported in novell destinations for that product. Despite this issue I will call the right cuadrant of expansion *new products* because it is the differencing characteristic of this part of the expansion.

of as the following

$$\sum_{pd \in PD_{t_1}} X_{pd,c,t_1} = \sum_{pd \in PD_{t_0} \wedge PD_{t_1}} X_{pd,c,t_0} \times (1 + \Delta\% X_{pd,c,t_1/t_0}) + \quad (1)$$

$$+ \sum X_{newpd,c,t_1}$$

where

$$\Delta\% X_{pd,c,t_1/t_0} = \frac{\sum_{pd \in PD_{t_0} \wedge PD_{t_1}} X_{pd,c,t_1} - \sum_{pd \in PD_{t_0} \wedge PD_{t_1}} X_{pd,c,t_0}}{\sum_{pd \in PD_{t_0} \wedge PD_{t_1}} X_{pd,c,t_0}} \quad (2)$$

and

$$\sum X_{newpd,c,t_1} = \sum_{\substack{p \in P_{t_0} \wedge t_1, d \in D_{t_0} \wedge t_1 \\ pd \notin PD_{t-k} \wedge pd \in PD_t}} X_{pd,c,t_1} + \sum_{\substack{p \notin P_{t_0} \wedge P \in P_{t_1}, \\ d \in D_{t_0} \wedge d \in D_{t_1}}} X_{pd,c,t_1} + \quad (3)$$

$$+ \sum_{\substack{p \in P_{t_0 \wedge t_1}, \\ d \notin D_{t_0} \wedge d \in D_{t_1}}} X_{pd,c,t_1} + \sum_{\substack{p \notin P_{t_0} \wedge p \in P_{t_1}, \\ d \notin D_{t_0} \wedge d \in D_{t_1}}} X_{pd,c,t_1}$$

Equation 1 shows that the sum of the value of each variety 'pd' (product p and destination d, belonging to the positive value variety set PD) exported in by country c in $t_1$is the sum of two terms. The first term is the value in t_0 of the varieties that had positive values in t_0 **and** that are still exported in t_1, times one plus its growth between t_0 and t_1 (which is shown in equation 2). The second term is the exports of new varieties, which, as already explained, can be decomposed into 4 different groups (equation 3). The first term of 3 includes varieties where the product and the destination were exported in t_0 but the combination wasn't in t_0 but was in t_1. For example, watches were exported in t_0 to USA and chocolates were exported to Japan, but there were no exports of chocolates to the US or watches to Japan. But if in t_1, the country starts exporting chocolates to the US this is counted in the first term. The second term is composed of completely new products exported to destinations existing in t_0. The third term captures exports of existing products in t_0 but to completely new destinations. Finally the fourth term includes new products exported to new destinations.

Next, the exports in t_0 can be decomposed as follows:

$$\sum_{pd \in PD_{t_0}} X_{pd,c,t_0} = \sum_{pd \in PD_{t_0} \wedge PD_{t_1}} X_{pd,c,t_0} + \sum_{pd \in PD_{t_0} \wedge pd \notin PD_1} X_{pd,c,t_0} \quad (4)$$

Equation 4 simply separates the total value of exports in t_0 of country c in the sum of the value in t_0 of varieties that survive in t_1 plus the varieties that *died* (varieties that were positive in t_0 but not in t).

Taking together 1 and 4, the percentage change in exports of country c between t_0 and t_1 yields

$$\frac{\sum_{pd\in PD_{t_1}} X_{pd,c,t_1} - \sum_{pd\in PD_{t_0}} X_{pd,c,t_0}}{\sum_{pd\in PD_{t_0}} X_{pd,c,t_0}} = \frac{\sum_{pd\in PD_{t_0}\wedge PD_{t_1}} X_{pd,c,t_0}\times(1+\Delta\%X_{pd,c,t_1/t_0}) +}{\sum_{pd\in PD_{t_0}} X_{pd,c,t_0}}$$

$$\frac{+\sum X_{newpd,c,t_1} - \left(\sum_{pd\in PD_{t_0}\wedge PD_{t_1}} X_{pd,c,t_0} + \sum_{pd\in PD_{t_0}\wedge pd\notin PD_{t_1}} X_{pd,c,t_0}\right)}{\sum_{pd\in PD_{t_0}} X_{pd,c,t_0}}$$

$$= \frac{\sum_{pd\in PD_{t_0}\wedge PD_{t_1}} X_{pd,c,t_0}\times\Delta\%X_{pd,c,t_1/t_0} + \sum X_{newpd,c,t_1} - \sum_{pd\in PD_{t_0}\wedge pd\notin PD_{t_1}} X_{pd,c,t_0}}{\sum_{pd\in PD_{t_0}} X_{pd,c,t_0}} \tag{5}$$

Equation 5 shows the decomposition of this paper. Percentage export growth can be explained then by the growth of surviving varieties (first term in the right hand side), by new varieties in each of the 4 quadrants of the Graphs 1 and 2 (second term), and subtracting deaths that occurred between t_0 and t_1, all divided by the exports in the initial period as a point of comparison[13].

The advantages of this methodology are its simplicity; it is additive, which makes further decompositions and recompositions easy; it takes into account the weights in countries ' world exports of each product and destination effectively into each margin, and allows to capture the varieties effectively exported. Its main disadvantage is that the part of the extensive margin $\sum X_{newpd}$ that accounts for effective new products and destinations (the second, third and fourth component of equation 3) is sensitive to the product and destination space occupied by the country at t_0. For example, if a country in year t_0 exported to every single and country, even though it exported each product to a single

[13]Evennet and Venables (2002) weight the importance of each dividing the growth of each component by total export growth instead of doing it with respect to the base year of exports. The problem of doing that ratio separately for each country is that when export growth is close to zero or negative, the contribution of each component to growth losses meaning both to compare each component and to compare between countries. In this paper the contribution of each component to growth is only used for world or country aggregates to avoid this problem.

country (assuming that the number of countries is equal to the number of product categories) and in a small amount, the only way it can grow is by producing more of the same or by expanding to new destinations of already colonized countries and products. The contribution of new destinations and products would be by definition zero. This tends to be the case of developed economies, which are occupying almost all the product and destination space since 1984[14].

Another issue is that it does not weight the space with its importance in world trade, so if for example the space remaining is 50 percent of countries and products, the space to grow in exports into those countries and products can be small if they are small countries and if the products are scarcely demanded worldwide, even though a variety map would indicate that it has a lot of places to jump to[15].

4 The data

This paper uses the publicly available Feenstra et al (2005) World Trade Flows database[16]. This database provides bilateral trade flows for more than 170 countries. It is the most consistent database created in terms of exporter flows checked with importer flows, multiple sources of data, etc.

Unfortunately, the database is disaggregated to 4-digit SITC rev.2, which impedes us to see a more detailed picture of the decomposition, particularly of product diversification.

The higher the aggregation the more likely that a new product in a more disaggregated definition will be classified as an existing product and thus its value computed as higher value of the existing product. Also some new products at a higher level of disaggregation that begin to be exported to different destinations from the rest of the aggregated 4 digit product will be categorized as new destinations and not as part of new products[17].

[14] Table A.2.2 in the Appendix shows this in the second and third to last columns.

[15] A way to solve that would be to make the length and size of each square in the map proportional to the importance of each country and product to world trade, so we would have rectangles of different size that would allow us to better understand the opportunities of growth or the space occupied by a country's exports. Hummels and Klenow (2005) decomposition, corrects for this issue.

[16] See http:\\cid.econ.ucdavis.edu/data/undata/undata.html and Feenstra et al (2005) to access the database and the paper that explains in detail its construction.

[17] The second 'bias ' should be smaller than the first one because the new product at the 6 or 8 digit must be exported to a destination not exported before under the 4 digit definition to be counted as new destination . Otherwise it would be simply counted as higher value of an old variety.

This database is initially treated so as to eliminate exports and imports from territories that are not real territories and those which are administrative territories of other countries. Also, to eliminate insignificant exports and to make product classifications and values of data comparable through time, any export less than $100,000 is eliminated, the export value of each variety is transformed into constant US dollars of 2000[18], and only data starting from 1984 is considered for the analysis. Finally, to keep the consistency of the destination space, the countries that were split or merged in the period 1984-2000 are treated as a single country. This affects Germany, the former Soviet Union, former Yugoslavia and former Czechoslovakia[19].

This leaves the decomposition with 145 countries and a product space of between 772 and 909 product categories, depending on the year[20]. Finally, to make the comparison of different countries and groups of countries more tractable and relevant, countries that have less than US$50 million of exports in 1984 or which had less than 2 million inhabitants were dropped[21], leaving the most of the analysis with 112 countries.

5 Main Results

The main results of the decomposition are presented from the most aggregate level to a most detailed level. First, Graph 3 and Table 1 show the result of the decomposition for aggregate of developing economies exports [22]. The continuous black line shows overall exports per year. The dashed line indicates the contribution of the 1984 structure to the growth in exports. The grey line adds the contribution of new destinations as defined in this paper, so the difference between the two lines reflects the

[18] Nominal exports of each year are deflacted by US CPI, from the World Bank WDI 2006.

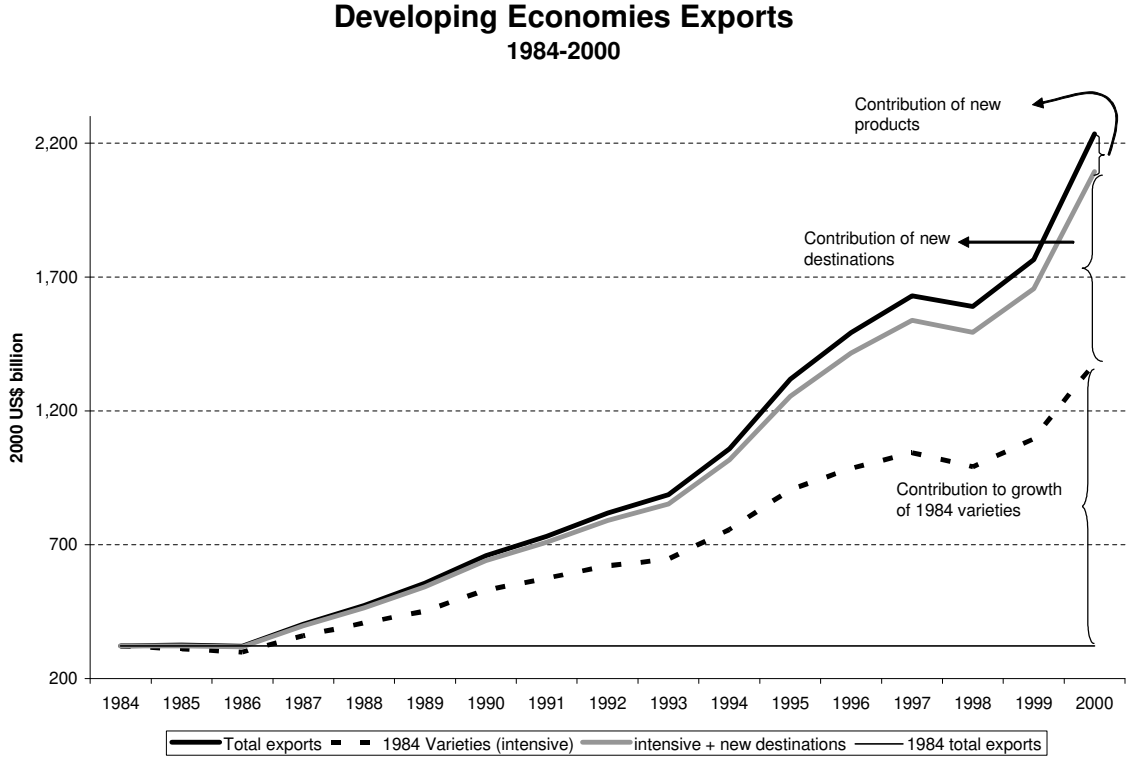
[19] See Appendix 1 and Tables A1, A2 and A3 for a list of eliminated countries and details on the database treatment.

[20] For a list of countries see Table A2 in the appendix.

[21] Nevertheless the exports to these countries included for most of the calculation. Also for robustness the decomposition is also made with all 145 countries, holding the basic results almost identical.

[22] Graph 3 vis constructed from table A.2.1 by weighting the growth of each component for each country by the importance of that country's export in 1984 world's exports. The sum of the weighted averages are then divided by world's export growth to get the contribution of each component to world's exports. I took out developed economies (using the WDI definition of high income economy) since their large weight in world's exports biases the decomposition away from the extensive margin, as explained in the previous section. The Appendix shows the same graph and table for the world sample, including the developed countries.

contribution of destinations Finally, the difference between the black and grey lines represents the contribution of new products. Each year in the graph corresponds then to the value of developing economies' exports, and export grown in value between 1984 and in any year can be seen by the vertical distance of total exports in that year with the horizontal line of 1984 exports.



Graph 3

year	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	**2000**
84 structure	-322.0%	4522.4%	47.1%	56.4%	55.5%	62.2%	61.8%	60.3%	57.4%	59.1%	58.6%	56.7%	55.2%	52.8%	53.7%	**55.3%**
new destinations	353.4%	-3821.8%	46.2%	37.9%	38.7%	32.6%	33.1%	33.9%	36.4%	35.4%	35.0%	36.8%	37.8%	39.6%	38.8%	**37.4%**
new products	68.6%	-600.6%	6.7%	5.7%	5.8%	5.2%	5.2%	5.8%	6.2%	6.3%	6.4%	6.5%	7.0%	7.5%	7.5%	**7.4%**
Total Exp Growth	1.1%	-0.2%	25.2%	47.3%	73.2%	104.9%	127.7%	155.0%	176.1%	229.5%	310.5%	364.7%	407.4%	395.0%	449.6%	**596.0%**
Avg Year Growth	1.1%	-0.1%	7.8%	10.2%	11.6%	12.7%	12.5%	12.4%	11.9%	12.7%	13.7%	13.7%	13.3%	12.1%	12.0%	**12.9%**

Table 1

The result for the full period of analysis can be observed in the last column of Table 1. From 1984 to 2000 world exports have grown on average about 13 percent per year. Of that growth, the structure of 1984's exports— the *intensive* margin—represents the bulk of that

growth at 55.3 percent. Penetration of new destinations and products—the *extensive* margin—account for 44.7 percent of the growth of exports. Thus, exporting more of what you were exporting in 1984 and in the same places has had the highest importance in the growth of developing economies' exports.

What is even more remarkable is that the most important component of the extensive growth is new destinations, and the apparently low importance of new products in the growth of exports. Of the 44.7 percent of relevance of the extensive margin, 37.4 percent corresponds to new destinations and only 7.4 percent to new products[23]. More than highlighting the apparent low relevance of new products, the clear message seems to be that new destinations are crucial in export growth.

But there are two important caveats: the level of aggregation and the time frame. On the first issue, the database used in this paper is built at the 4 digit level, which is relatively aggregated, considering that there are other world databases available at 6 or 8 digit level of disaggregation. The higher the level of product aggregation the higher the chance that a country has some export in a product of each category to begin with, and so what are new products in higher levels of disaggregation would be considered intensive margin or new destinations at lower levels[24]. The only way to solve this issue is doing the same analysis with a more disaggregated database. It would be interesting to test the same analysis at the 6 or 8 digit level to check for robustness of the results.

The other sensitive issue is the time frame. Sixteen years might be a short time frame to capture the productive transformation of some economies and thus reduce the effect in export growth of new products compared to longer periods[25].

Additionally, when comparing the contribution of new products and new destinations one can argue that it is not 'fair' to compare them in the way done in the decomposition, because the new product margin only includes product categories new to the country (the right two

[23] At a world level these results are even more extreme. The extensive margin accounts for only 27.2%, of which 24.6% corresponds to new destinations and only 3% to new products. See the first two groups in Table 2, Table A.2.4 and Graph A.2.1 in the Appendix.

[24] Given the extremely low importance of varieties of new products in new destinations (as I will show later), one can argue it is much more likely that new products will be classified in the extensive margin relative to new destinations, compared to higher levels of dissagregation.

[25] Even though Feenstra's database covers exports since 1962, as explained in the appendix there is a reclassification problem that affects several product lines which artificially increases new products starting in 1984. Using a different database or accepting to work with even less products can allow a calculation using a longer timeframe.

quadrants in Graphs 1 and 2), while new destinations include 'old' destinations for the country as well (lower left quadrant of Graph 1 and 2). While conceptually the expansion within the lower left quadrant of graph 1 can be perfectly understood as a new destination for a given product, the argument can have validity for the sake of comparing effectively new products never produced before with effectively new destinations, never reached before, particularly if one assumes that there can be positive information or network externalities of some kind at the country level, so exporting into known territory for the country makes it easier for the firm compared to when no one in the country knows the new market. So an alternative would be to define new destinations as being new to the country as a whole. This would imply understanding new destinations in way similar to Helpman et al (2006). In the framework of this paper, new products would be defined as the right two quadrants and new destinations the top two quadrants[26]. The comparison between the two under this definition can be seen in Table A.4 and A.5 in the Appendix (last column of each table). The tables show that the importance of new destinations in growth significantly decreases, compared to the basic definition used in the paper. Nevertheless except for the case of the worst performing countries, new destinations still explain about two times more of growth than new products.

Going back to the analysis of results, another interesting issue is that the relevance of each component is relatively robust to comparing 1984 with previous years, that is, taking shorter periods of growth. This can be seen in Table 1 . The contribution of growth of the extensive margin increases mildly since 1988[27]. One could expect that as we move ahead in time since 1984 the contribution of new products and destinations should increase steadily since there is more time for productive transformation and searching new markets if one assumes that as countries open their frontiers, develop (or implode) there is a higher chance of adjusting their productive structure, which takes time[28] This does not

[26]This would imply that for the sake of the comparison the top right quadrant should be counted in both new destinations and new products. This makes sense since that quadrant corresponds to new products in new destinations.

[27]The numbers of the comparison of 1984 with 1985 and 1986 do not have much meaning since the overall export growth was close to zero or negative. Also the same growth decomposition starting in every year from 1985 (1985 compared with every year, 1986 compared with every year, etc) one finds very similar results as the ones reported after 1986 the table, that is a mild increase in the importance of new products. These results are not shown in the paper but are available upon request.

[28]For example, Helpman (2004), argues that a small country which does not affect its terms of can take advantage of exporting in its competitive advantage sectors and increase productivity while the capital labor ratio in that sector increases, up to a point where it is profitable to switch to products that are more capital and human

seem to happen intensively, at least not relative to the importance to the intensive margin.

At one more level of dissaggregation, Table 2 analyzes margins by groups of countries. Each component of the decomposition can be seen in columns (2) to (7). There are three things to highlight. First, there is a consistent order of importance of the different components of the decomposition, the most important being the growth of the 1984 structure, then growth into new destinations in known products and destinations for the country, followed by new destinations in existing products, new products in existing destinations and new products in new destinations[29].

It seems to be easier for countries to grow in 'known territory' since almost with no exception the highest rates of growth within components are from the existing varieties that survived. In second place the penetration of new (already colonized) markets in existing products, and far below, new destinations and products. Also, the contribution of new destinations is consistently high, particularly for developing economies, although lower than the intensive margin growth.

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capital intensive. Thus, small countries should expect to diversify to these physical and human capital intensive sectors.

[29] Countries have almost no growth in new products in new destinations.

1984-2000	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(2) - (3)	(4) + (5)	(6) + (7)
	Real Export Growth	growth of surviving varieties	death of 1984 varieties	new destinations of known countries and products	new destinations, existing products	new products, known destinations	new products and destinations	**net growth of 1984 varieties (intensive)**	**new destinations (extensive)**	**new products (extensive)**
	$\frac{\sum_{pd \in PD_t} X_{c,pd,t} - \sum_{pd \in PD_{t-k}} X_{c,pd,t-k}}{\sum_{pd \in PD_{t-k}} X_{c,pd,t-k}}$	$\frac{\sum_{pd \in PD_{t-k} \wedge PD_t} X_{c,pd,t-k} \times M\%X_{c,pd,t-k}}{\sum_{pd \in PD_{t-k}} X_{c,pd,t-k}}$	$\frac{\sum_{pd \in PD_{t-k} \wedge pd \notin PD_t} X_{c,pd,t-k}}{\sum_{pd \in PD_{t-k}} X_{c,pd,t-k}}$	$\frac{\sum_{p \in P_{t-k} \wedge c \in D_{t-k} \wedge c \in D_t \wedge pd \in PD_t \wedge p \notin P_{t-k} \wedge pd \in PD_t} X_{c,p,d,t}}{\sum_{p d \in PD_{t-k}} X_{c,p,d,t-k}}$	$\frac{\sum_{p \in P_{t-k} \wedge c \in D_{t-k} \wedge c \in D_t \wedge d \in D_t} X_{c,p,d,t}}{\sum_{p d \in PD_{t-k}} X_{c,p,d,t-k}}$	$\frac{\sum_{p \notin P_{t-k} \wedge p \in P_t \wedge d \in D_{t-k} \wedge c \in D_t} X_{c,p,d,t}}{\sum_{p d \in PD_{t-k}} X_{c,p,d,t-k}}$	$\frac{\sum_{p \notin P_{t-k} \wedge p \in P_t \wedge d \in D_{t-k} \wedge d \in D_t} X_{c,p,d,t}}{\sum_{p d \in PD_{t-k}} X_{c,p,d,t-k}}$			
Full Sample *										
total [1]	479%	357%	10%	88%	30%	13%	2%	**347%**	**118%**	**14%**
contribution to (1) [2]	-	74.5%	2.1%	18.3%	6.2%	2.7%	0.3%	**72.4%**	**24.6%**	**3.0%**
Filtered sample										
total [1]	486%	365%	11%	87%	30%	13%	2%	**354%**	**118%**	**14%**
contribution to (1) [2]	-	75.0%	2.2%	18.0%	6.2%	2.6%	0.3%	**72.8%**	**24.2%**	**3.0%**
Developing economies										
total [1]	596%	346%	16%	164%	59%	39%	5%	**329%**	**223%**	**44%**
contribution to (1) [2]	-	58.0%	2.7%	27.4%	9.9%	6.5%	0.9%	**55.3%**	**37.4%**	**7.4%**
Developed economies										
total [1]	428%	362%	7%	55%	17%	1%	0%	**355%**	**72%**	**1%**
contribution to (1) [2]	-	84.7%	1.7%	12.8%	4.0%	0.3%	0.0%	**82.9%**	**16.7%**	**0.3%**
Top 20 Developing										
total [1]	1169%	689%	11%	310%	110%	63%	9%	**678%**	**419%**	**72%**
contribution to (1) [2]	-	58.9%	1.0%	26.5%	9.4%	5.4%	0.7%	**58.0%**	**35.9%**	**6.2%**
Rank 21-40 Developing										
total [1]	437%	217%	20%	137%	51%	46%	5%	**197%**	**189%**	**51%**
contribution to (1) [2]	-	49.7%	4.5%	31.5%	11.7%	10.6%	1.0%	**45.1%**	**43.2%**	**11.7%**
Rank 41-60 Developing										
total [1]	244%	143%	20%	78%	20%	18%	3%	**124%**	**99%**	**21%**
contribution to (1) [2]	-	58.8%	8.0%	32.1%	8.3%	7.5%	1.3%	**50.8%**	**40.4%**	**8.8%**
Worse 20 Developing										
total [1]	87%	64%	29%	32%	8%	11%	2%	**35%**	**40%**	**13%**
contribution to (1) [2]	-	73.1%	33.0%	36.7%	8.9%	12.4%	2.0%	**40.1%**	**45.5%**	**14.4%**

* without country filters of population or minimum export value in 1984. For the rest of the calculation the filter is applied unless stated.

[1] To aggregate countries I weighted the growth of each by its importance to the 1984 exports of the relevant full group being compared

[2] contribution to (1) simply divides each column by column (1)

Note: The values for USA correspond to 1999, due to an error in the Feenstra Database for the 2000 values, which account for less than half of the countries exported by the US in previous years

Table 2

Second, when comparing developed and developing economies, the former have grown faster in the old structure than the latter. However, developing economies grew much faster in new destinations and products. As already explained, this is probably partly due more to statistical reasons than economic or technological, given that developed economies have little chance to expand into new products or destinations [30]. Overall, the importance of the extensive margin is substantially higher in developing economies.

[30] The exception to this is the expansion in known destinations and products but in new combinations, where again developing economies grow much faster than developed ones (column (4) in the table).

Finally, comparing groups in terms of their export growth, fastest growing countries grew faster in every component than other lower growing groups and have lower death rates as a percent of 1984 exports. The highest export growth countries grew on average more in every component than the second 20, those that were 20-40 grew more in everything than those in positions 40-60 and the latter grew more than the worse performing countries. Looking in more detail one can see the better performing countries had less deaths (in value) and more growth of surviving and new varieties. Another interesting issue is that although growing faster in more successful exporters, the relative relevance of new products is lower in more successful economies. This can be seen in the second row of the last column of the table of each of the four groups.

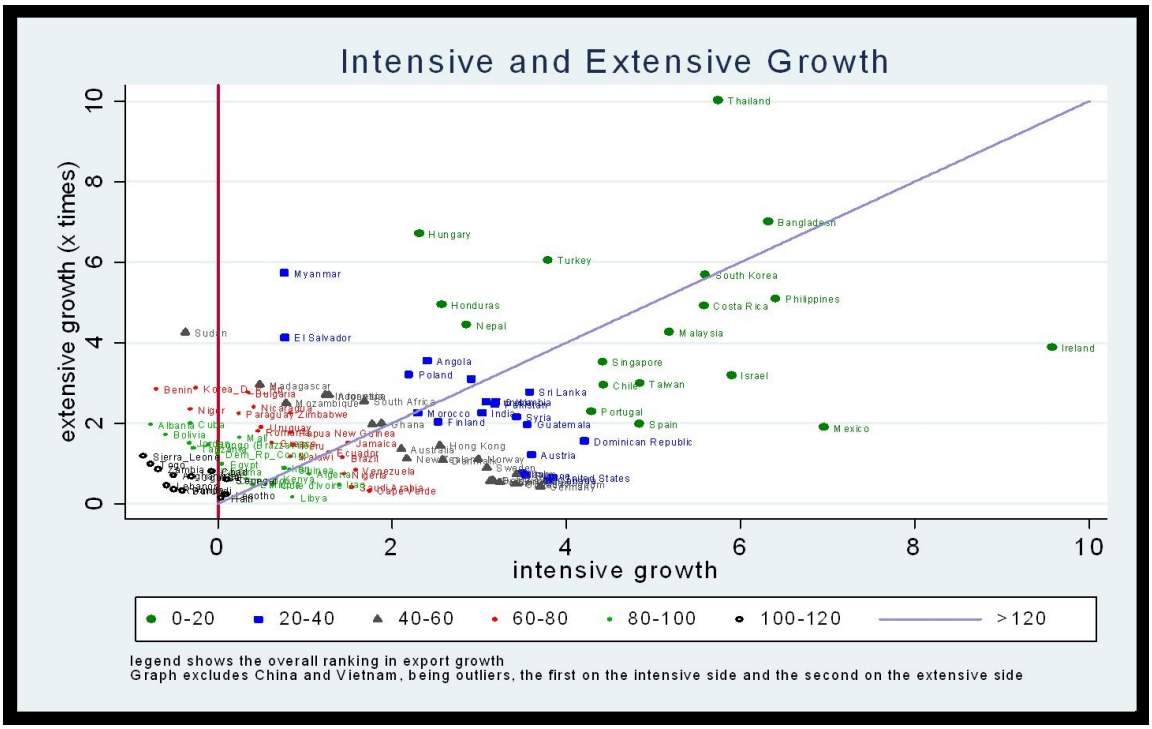
A more detailed comparison can be seen in table 3, which takes the ratio of the growth of each component of the best 20 performers and compares it with the other groups in the ranking. For example, column (1) shows that the best performers' total exports grew 2.7 times faster than those in the rank 20-40 and 13 times faster than the worst performing group. These ratios allow us to assess which component of the decomposition had a higher differential growth and thus a higher differential contribution to export growth when comparing the best performing countries with the rest. Intuitively one might think that the countries with fastest growing exports should have grown differentially faster in new products, but the data doesn't show this. Looking at the individual components of the decomposition (columns (1) - (7)) surviving varieties (column (2)) and particularly completely new destinations (column (4)) had a higher differential growth when compared to the lower performing countries. When compared to the worse performers what made the most difference was the growth in new destinations. When one aggregates to the 3 dimensions used in the paper (last 3 columns of Table 2), one can assess that the net growth in 1984 structure made the highest difference in growth, while new destinations grew differentially faster than new products, again confirming the importance of new destinations in export growth.

Relation of decomposition components of Top 20 Developing economies with lower perfoming groups

		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(2) - (7)	(5) + (6)	(3) + (4)
		total exports	surviving varieties	new varieties in old destinations and products	new dest, old products	new prod, known dest	new prod, new dest	death of varieties	1984 structure	New Products	New Destinations
	average yearly growth	17.2%	13.8%	9.2%	4.7%	3.1%	0.5%	11.3%	13.7%	3.4%	10.8%
Relation with	20-40	2.68	3.18	2.25	2.15	1.36	1.90	0.57	3.44	1.41	2.22
	40-60	4.79	4.81	3.95	5.43	3.45	2.76	0.58	5.47	3.35	4.26
	worse 20	13.39	10.79	9.68	14.21	5.85	4.99	0.39	19.36	5.74	10.56

Table 3

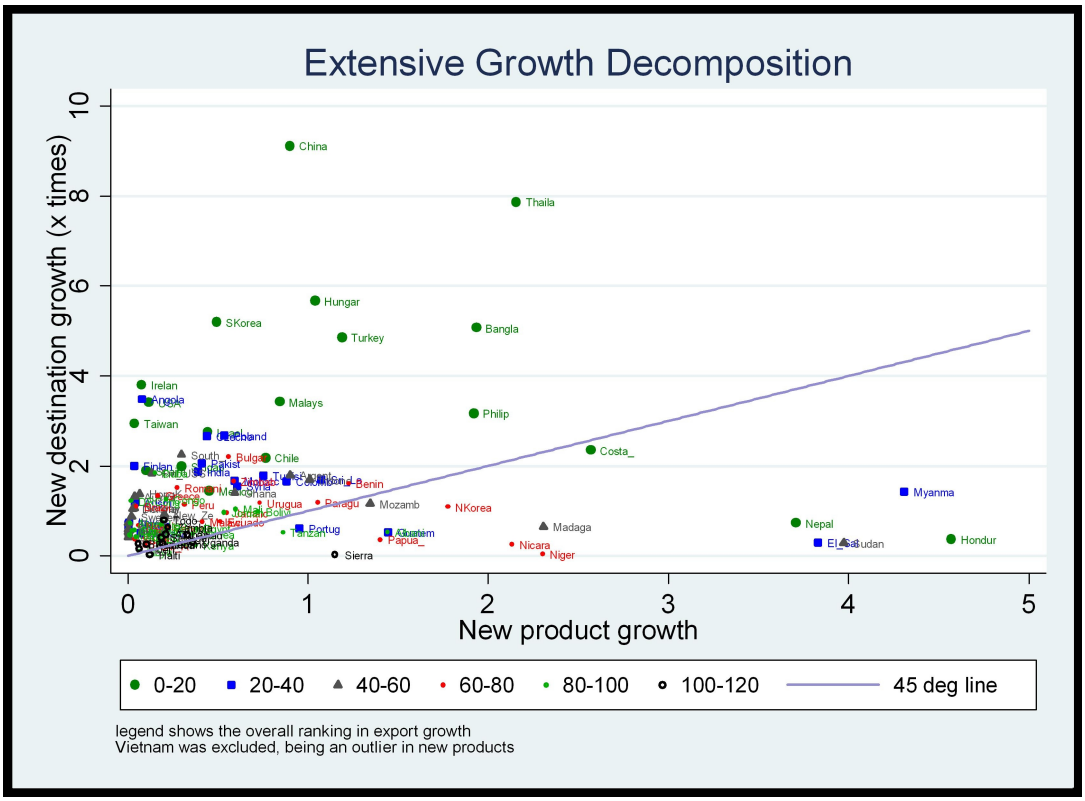
Finally, we can analyze this decomposition at the country level. Tables A2.1 and A2.2 show them in detail, but a clearer one shot picture can be seen in graphs 4 and 5. [31].



Graph 4

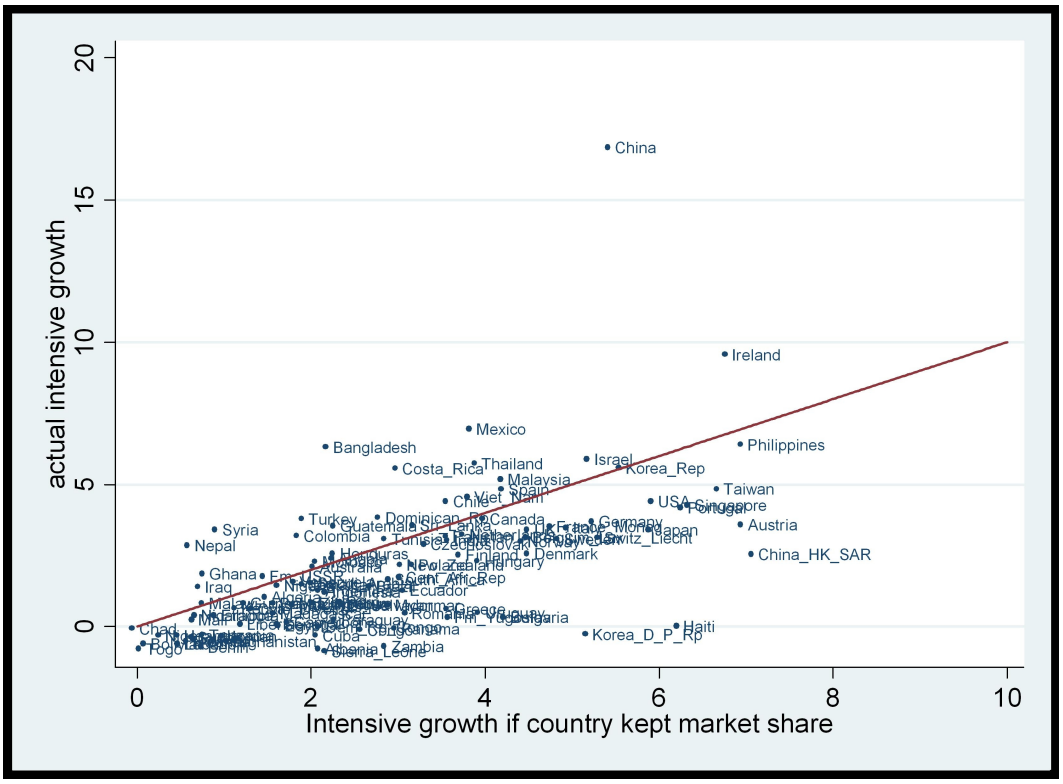
Graph 4 compares the extensive and intensive margin of growth. The main regularity observed is that there is no regularity. Fast growing countries as well as slow growing countries in exports achieve their outcome, some more through the intensive and others through the extensive margin. However, when decomposing the extensive margin (Graph 5) we see that the vast majority of countries grow more through new destinations compared with new products, as already been shown in the country group and world tables.

[31] Table A2.1 and A2.2 show the same decomposition but using different bases. The former simply account for overall growth of each component with respect to the 1984 export level of each country. Table A2.2 weights that growth by the overall growth of the country, and makes the different components easier to compare, but makes the cases of countries that overall grow little or decline less interpretable.



Graph 5

Finally, given the high relevance of the intensive margin, one can provide a hypothetical exercise to analyze this determinant in particular. One possible reason for different growth rates in old varieties could have simply been that there was a different dynamism in those markets between countries. So one way to analyze how the intensive growth was achieved is to decompose the intensive growth between what that growth would have been had the country kept its 1984 market share in each of the varieties it was exporting to the effective growth in the intensive margin. The difference can be attributed to a 'market share increasing effort'. If a country grew more than what its 1984 market share implied, there is a positive contribution of effort, or an average increase in market share. If it grew less, there was 'negative' effort. This exercise is shown in graph 6. The position in the X axis indicates how fast would 1984 exports (the intensive margin) grow simply if countries kept the market shares they had of the products they exported in the countries they did. So the position is an indicator for the country of how dynamic was its 1984 export market in the next 16 years. The Y axis shows how much did the intensive margin grow in practice.



Graph 6

Note: the line is a 45 degree line, so if a country is above the line, it means it increase its weighted average market share. The vertical distance with the 45 degree line shows the part of the intensive margin attributable to 'effort' or an increase in the average market share.

The graph shows two things. First, countries who were 'better located' tend to grow faster in intensive growth. That is, simply keeping the market shares of 1984 allows some countries to grow much faster in exports than others. For example, maintaining its 1984 market share, Korea grew much faster than Iraq which also kept its market share. The difference is that Korea's varieties were much more dynamic than Iraq's. Had Iraq wanted to grow in the intensive margin as much as Korea it would have had to significantly increase its market share in its product-destinations so as to grow more than several times faster than what it did, which in all likelihood would be something much more difficult than it was for Korea. Given the positive correlation in the graph, it suggests that on average countries took the advantage of more dynamic sectors of export allowing them to grow faster in the intensive margin. So one reason the countries that grew faster in the intensive margin were able to achieve that growth was because the markets where they were selling

their products experienced faster growth, and just keeping their market share allowed them to grow much faster in the extensive margin than less 'lucky' countries.

Additionally, the graph shows that some countries kept their market shares, some did an extra 'effort' and some wasted the opportunity and made a 'negative effort'[32] Among the countries that increased their average market share in their old varieties, growing even faster than what the market share would indicate, China outperforms all others.

In sum, the main findings of the decomposition are the following:

- At a (developing) world average, original varieties represent the bulk of the cause of export growth. New destinations are a very relevant source of growth, even more important than new products. This is robust to different definitions of new destinations and to different country groups .Moreover, aggregating across the world and in country groups there is a consistent order of relevance of different components of the extensive margin of the decomposition for explaining growth.

- New products account for a small percentage of export growth. Within them, new destinations are even more seldomly colonized as compared to existing destinations. Nevertheless this can be sensitive to the level of aggregation of data and the time frame used in the paper.

- The fastest export growing countries grow faster in every component but differentially faster in destinations as compared to lower export growth countries.

- The growth of markets in the varieties originally exported by each country seems to have contributed in an important way to the intensive growth of countries' exports.

How do these results compare with the relevant empirical literature?

[32] In practice, this clearly depends on each particular country. Some countries that transformed their productive structures (because of economic liberalization) and moved into new products could be below the 45 degree line because they stop exporting products that where the country did not have a comparative advantage. That could be the case of former Yugoslavia.

These results, particularly the aggregated ones, can be directly compared to two papers in the literature.

First, the findings are similar to Evenett and Venables (2002), who find that new products account for close to 9 percent, new destinations 34 percent and the remaining 57 percent in intensive margin. These values are very similar to the values I obtain for the developing economy sample. This is impressive taking into account that the Evenett paper uses a very different time frame, a much smaller sample of countries, and more aggregated data.

Second, we can compare the results to Helpman et al (2006) paper, where they acknowledge that a small percentage of export growth comes from new destinations, and criticize the Evenett results as being non representative and considering many more cases into new destinations than what they should considering Helpman et al methodology. First, using the full sample of 145 countries (first result in Table 2) one still find that 25 percent of export growth is attributable to new destinations, so in this sense the critique is not valid. Moreover, the sample of Evennet and Venables (2002) is not representative but still the results hold in the sense that destinations are important with a more representative sample. Second, Helpman's methodology assumes that new destinations are the proportion of export growth that belongs to countries that didn't have two way trade in 1970. That is countries who did not export between them in 1970 or where only one side did. New destinations in their definition are thus exports of my country to new countries that were not present in my export basket in 1970. If my country didn't export any product with a certain country in 1970 and later did (not mattering if the other country did or did not export to mine), this would be extensive margin for Helpman. If my country did export to another country but the other country did not this would also be extensive margin. Using the decomposition of this paper we can modify what 'new destinations' mean and define it as the upper quadrants of Graph 1, that is, export to completely new destinations, be they of old or new products, one has a very similar definition to Helpman's[33] Moreover, given that Evenett's results for 1970-97 are similar to mine, I use my adjusted results and compare them with Helpman's. This is shown in table A.5 in the appendix[34]. . The extensive-new destinations margin under Helpman's

[33]However, compared to Helpman's definition, the one used here biases the results against new destinations because it takes one way trade exports in the base year (with no imports from that country) as extensive, while I take them as intensive or at least not part of new destinations.

[34]The relevant comparison is seen in the first two rows, under the full sample results, and under the fifth column ('new destinations (extensive)')

more restrictive definition using this paper's database accounts for only 6.6 percent of export growth of 1984-2000. This is very similar to what he finds out to be the extensive growth of exports, and suggests that their conjecture was right in the sense that a lot of what Evenett considered new destinations were already countries trading with one another in other products, and thus part of Helpman's intensive margin.

How do these results compare with the theory?

From a trade theory perspective new destinations at the product or country level can be explained most straightforwardly with the most recent firm level models when you have gravity and fixed costs of exporting. Helpman's model is the most complete model that fits different findings about destinations. Their model includes home and destination country specific fixed costs of exporting. If destination market size is small and distant, the profitability of entering that market for a given product will be smaller than larger and closer markets. It is then possible for a country simply not to trade with another or to trade only some products if the fixed costs are high enough relative to the profitability of exporting there before those fixed costs are incurred. From a dynamic perspective, however, what would make a country enter new markets? Ceteris paribus, if the home country grows, the bigger size (which for a Melitz (2003) model would imply higher aggregate productivity, for example) can allow marginal firms to enter new destinations that didn't enter before if they overcome the corresponding threshold of that country. If this firm is the first in a product category to enter a country, that would be observed in my results. Also, if other markets grow, the bigger size of that market will make profitable for some firms to start exporting there, given their productivity, after incurring in the fixed costs. Also, it is possible that the home or foreign countries change policies that make the fixed or variable costs of exporting there lower. So, in principle, recent theories of trade can explain patterns of export growth penetration.

But over time, variables that affect gravity change slowly, particularly country size, which makes it difficult to reconcile it with the relevance of new destinations for export growth found in this paper. If, as most recent models assume, firms draw a certain productivity ex ante, they will know to which markets to export given the cost of entering them, and so they will enter the most profitable ones immediately (typically the larger and closer ones). Thus when you measure an existing product it should be the case that product has entered the most important markets for that product, so it is strange to find a very important relevance

of new destinations if firms only colonize the next marginally inferior market as compared to the previous ones. Moreover, the importance of new destinations also holds on average for short periods of time (5 years for example) as Table 1 shows, so for all the world, country groups and most individual countries the variables in these models should have moved rapidly in order for the contribution of growth of new destinations to be significant. This is unlikely. One can conjecture that something else might ease the process of entering new markets.

One hypothesis is that some these fixed costs have important information externalities. As expressed in Melitz (2003) there are several informational (and explicit) and coordination costs firms must incur to successfully start exporting a product in a new country, which makes this costs significant[35]. But it is possible to think that several of them can have positive externalities. For example, once consumers begin to know and buy products from a given country (if they are good) it is more likely that they will buy similar products from that country. The information about regulation, idiosyncrasy, ways of doing business, etc., many times is shared among exporters (particularly in developing economies that are not too large and where exporters do not compete between them for the exact same market share)[36]. Some of these costs are probably country specific, others sector or product specific and others firm specific. Probably the existence of such externalities are higher for country or sector level common costs and less for firm level fixed costs.

The existence of such externalities would have policy implications and would allow to disentangle a second dimension to the idea of 'self discovery costs' proposed by Hausmann and Rodrik (2003). In their paper they argue for several cost of both discovering a new product and exporting it successfully[37]. In that sense, Hausmann and Rodrik mix

[35] "A firm must find and inform foreign buyers about its product and learn about the foreign market. It must then research the foreign regulatory environment and adapt its product to ensure that it conforms to foreign standards (which include testing, packaging, and labeling requirements). An exporting firm must also set up new distribution channels in the foreign country and conform to all the shipping rules specified by the foreign customs agency." (Melitz (2003)).

[36] For example, Vettas(2000) models foreign demand for new products as endogenous, in that it is an increasing function of past sales due to learning on the part of consumers. However, the initial investment required to penetrate a new market, stimulate demand, and learn the market's potential size will suffer similar appropriability problem as Hausmann and Rodrik (2003) 's self discovery: imitators can free ride, leading to underinvestment by entrepreneurs. But once someone makes the investment it is cheaper for all to enter. This type of model has not been tested yet.

[37] This, from a developing economy perspective.

both issues[38]. Exporting a completely new product involves exporting to a new destination, thus it would entail both costs and externalities of discovering a new product and a new destination for that product The nature and the characteristic of those costs of exporting are might be policy relevant. Connecting this with the framework of this paper, self discovery would be located in the right 2 quadrants of Graph 1 and 2, because it entails exporting a new product. However, if this hypothesis is true, entering the top right quadrant should be harder than entering the bottom right, because you have to completely discover both the product and the destination. The left two quadrants would only have the component of discoveries that have to do with penetrating markets with your product, which are can argue has a smaller cost and uncertainty than discovering a product. An alternative (although not necessarily substitute) explanation could simple be that the new potential markets are also the most distant and small and that would explain why those regions explain less export growth than the lower quadrants.

Thus, one interpretation of the export growth decomposition could be that it seems that introducing new products is much more difficult than introducing old products, and that introducing products in new markets is easier than doing it in already colonized ones, and this could be explained in part by costs of discovery and market penetration which have positive externalities, together with gravity. Then, efforts should be taken to understand those difficulties better, particularly if, as some papers show, what you export and the range of variety that you export matters. Disentangling these costs for destinations is beyond the scope of this paper but would be interesting as follow up work, and could allow for more specific policy implications.

[38]For example, Hausmann and Rodrik (2006) with respect to self discovery costs argue that "coordination failures and spillovers are more acute for new activities than for already established ones. In the first place (...) new activities are hard to develop unless their suppliers are present, but why would the suppliers exist if they have nobody to sell to. Secondly, by definition, new activities must incur self-discovery costs. And finally, they cannot find workers with experience in the new activity, since the activity has not been in existence and hence has not been hiring and training workers for it. "

At the same time, Hausmann and Rodrik (200?) claim that "A firm must find and inform foreign buyers about its product and learn about the foreign market. It must then research the foreign regulatory environment and adapt its product to ensure that it conforms to foreign standards (which include testing, packaging, and labeling requirements). An exporting firm must also set up new distribution channels in the foreign country and conform to all the shipping rules specified by the foreign customs agency. "

6 Additional facts about destinations

Given the relevance that I find for new destinations, I would like to extend my analysis in that direction, still in a descriptive dimension, showing 2 extensions partly based on my methodology of decomposition

a) reaching significant number of markets seems to be more difficult for small and less developed countries, even in relatively competitive products.

Hummels and Klenow (2005) estimate a relation between GDP size and a weighted average of destinations per product[39]. But can we extend this relation if we are looking at the products that have some level of comparative advantage of each country? In other words, should products for which the country is relatively good at producing also reach a different number of destinations depending on the size and wealth of that country? Using simple estimates the answer seems to be yes. Taking all the products for which each country has a *revealed comparative advantage (RCA)* greater than one, the size of the country measured by total GDP in the corresponding year as well as the level of development and overall productivity, measured by GDP per capita in each year are significant[40]. The following table shows the estimates

[39] They found that there was a positive elasticity of 0.1 with respect to size.

[40] RCA is defined as the importance of a given product in the exports of country i, divided by the importance of world exports of that product into total world exports.

dependent variable: log number of destinations of products with RCA>1

	2000			1995			1990			1985			panel
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
lpib	0.524	0.175	0.135	0.496	0.167	0.132	0.457	0.124	0.098	0.422	0.111	0.088	0.116
	(109.25)**	(38.82)**	(27.81)**	(108.26)**	(40.47)**	(29.14)**	(90.31)**	(29.55)**	(21.69)**	(79.84)**	(24.35)**	(18.70)**	(100.05)**
lpibpc		0.132	0.112		0.123	0.102		0.135	0.104		0.173	0.151	0.116
		(19.21)**	(17.64)**		(18.44)**	(15.82)**		(19.41)**	(19.41)**		(21.96)**	(20.57)**	(68.66)**
lvalueporprod		0.364	0.392		0.379	0.404		0.41	0.43		0.428	0.442	0.414
		(106.94)**	(84.05)**		(108.53)**	(85.16)**		(114.89)**	(89.78)**		(103.76)**	(83.39)**	(343.1)**
Product fe	no	no	yes	no	no	yes	no	no	yes	no	no	yes	no
Product*Year fe	no	no	no	no	no	no	no	no	no	no	no	no	yes
Observations	12296	12296	12296	12155	12155	12155	11574	11574	11574	11056	11056	11056	199866
Adj R-squared	0.49	0.76	0.85	0.49	0.77	0.86	0.41	0.76	0.84	0.37	0.71		0.85

Absolute value of t statistics in parentheses
* significant at 5%; ** significant at 1%

dependent variable: log effective number of destinations of products with RCA>1

	2000	1995	1990	1985	panel
	(14)	(15)	(16)	(17)	(18)
lpib	0.086	0.09	0.07	0.068	0.08
	(16.59)**	(18.98)**	(15.32)**	(14.67)**	(74.06)**
lpibpc	0.104	0.088	0.098	0.135	0.103
	(15.37)**	(13.02)**	(14.47)**	(18.89)**	(64.00)**
lvalueporprod	0.15	0.163	0.184	0.186	0.169
	(30.30)**	(32.94)**	(38.24)**	(35.88)**	(149.71)**
Product fe	yes	yes	yes	yes	no
Product*Year fe	no	no	no	no	yes
Observations	12296	12155	11574	11056	199866
Adj R-squared	0.55	0.58	0.59	0.6	0.6

Absolute value of t statistics in parentheses
* significant at 5%; ** significant at 1%

Table 4

The estimations show that countries that are twice as larger tend to export products with RCA$>$ 1 to between 7 and 13% more destinations, using the results of regressions with controls and fixed effects. This coefficients are similar to those found by Hummels and Klenow for the whole set of products. However I am controlling for GDP per capita and the value of the exported product trying to control for proxies of average efficiency and productivity in the economy (which is the typical factor that subsumes that firms in bigger countries tend to be more productive) and the scale of production, plus the use of fixed effects.The significance holds if we take as dependent variable, not the number of destinations but the effective number of destinations, using a Herfhindal index for their construction[41] (see second panel of regressions).

How can the relatively more competitive products only be sold to a

[41]For each product exported with RCA>1 for each country in every year I use the classical definition used for example in measuring the effective number of political parties in the political science literature: $effdest_j = \frac{1}{\sum\limits_{i=n}\left(\frac{x_i}{\sum\limits_{i=n} x_i}\right)^2}$ where n is the total number of destinations of product j, and i is a particular destination of product j.

fraction of markets if my economy is smaller? One possible explanation could be that some products could naturally have more value per unit of weight and developed economies might sell more of these products and they reach further markets more easily. Additionally, for some types of products it might be more profitable to sell them to some entry markets and those markets can distribute them to the rest, and for others it might be more logical to sell them to every market separately. However, I try to take that into account by introducing product fixed effects to the regression, as well as time fixed effects. [42].

Alternative hypotheses that can explain the above are that it is possible that competitive products in big and developed economies are simply more productive because of a broader distribution of productivity for the country given its size and average productivity. We might be observing products that represent the most productive draws from that distribution, and this might not be captured by the income per capita control. The average productivity and the right tail in developing economies might not be enough to reach far markets. A different explanation could be that bigger and wealthier countries probably establish more commercial relations and trade agreements with more countries than smaller and less developed because there are more countries that are trying to trade with them. This could be a type of networks effect that can have impact on information, tariff and non tariff barriers and transportation for exporting less popular countries.

An additional possible explanation can be obtained from the findings of Eaton Kortum and Kramarz (2005). Analyzing french firms they find that the number of markets a firm serves is proportional to the sales of that firm in the home market. This provides some light on why the size of the home country GDP can be significant in predicting the number of destinations reached by competitive products. On average the home sales of competitive exporting firms should be smaller in smaller countries. Moreover, in small, open and natural resource based economies, often there is almost no market for the RCA products, particularly in raw materials. The question again is why, and if it is strictly necessary for firms to be big in domestic markets. But anyway, if this relation holds for all countries, by controlling for the volume exported by the

[42] A variable that was not incorporated to the regression is distance and the destination countries GDP and wealth. However, there shouldn't be a big relation between the size of a country and the average distance with the rest of the world. Also, if I incorporate the average distance of the existing trade partners I am not taking into account the partners that the country is not trading with and which should be relevant for why the country is not exporting with them. Due to gravity and fixed costs one can expect that for any product, the countries that it is traded with are the closest and largest.

product, the estimations could be indirectly controlling by the firms size in the country, which would again indicate that there is something additional about size beyond the sales of the product that pushes to reach more destinations[43].

I am not able to tell which of if these (or other) stories are behind this regularity, but it is interesting in itself that the competitive products of most countries reach only a few destinations compared to bigger ones.

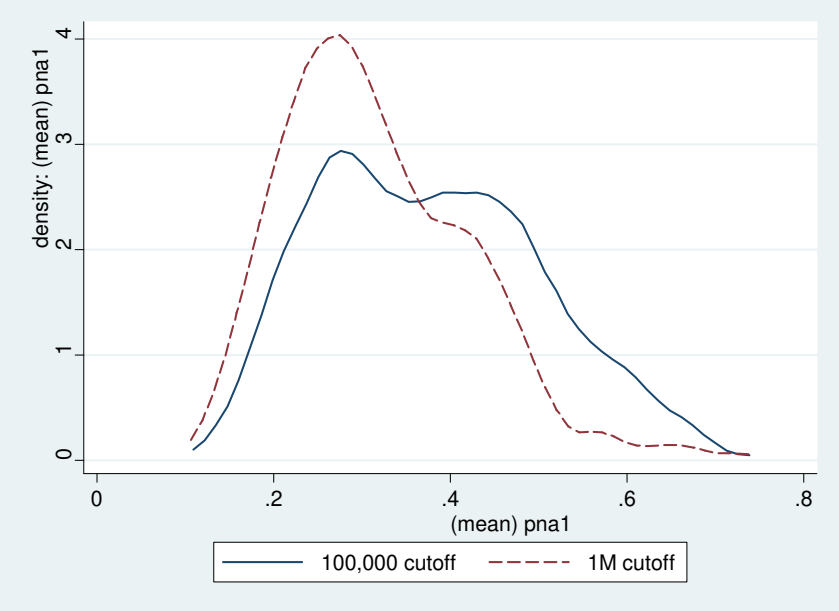
b) **An important percentage of exports of new varieties are sporadic and look like experiments.**

If we analyze the extensive margin, this is all the new varieties exported since 1984 in each country and we sort them by the number of years they were exported, a significant number of them were exported only in one occasion and never again in the database. This holds if we increase the cutoff from $100,000 to $1,000,000 per product to try to increase the significance of the export. The distribution shifts to the left but the mean is still above 30% of all new varieties exported in the period 1984-2000 (see graph 7 below). This suggests that the process of entering new markets has a significant component of trial and error and that failure is very common. Moreover, this seems a pervasive phenomenon worldwide.

Percentage of new varieties that last only one year. World data:

Cutoff	countries (obs)	Mean	Std. Dev.	Min	Max
100,000	145	.38	.12	.15	.70
1,000,000	145	.31	.10	.14	.71

[43] I am obviously assuming that products that reach more markets have on average firms that reach more markets, and thus have should have higher sales in the home market if the relation found in Eaton et al (2005) holds.



Graph 7

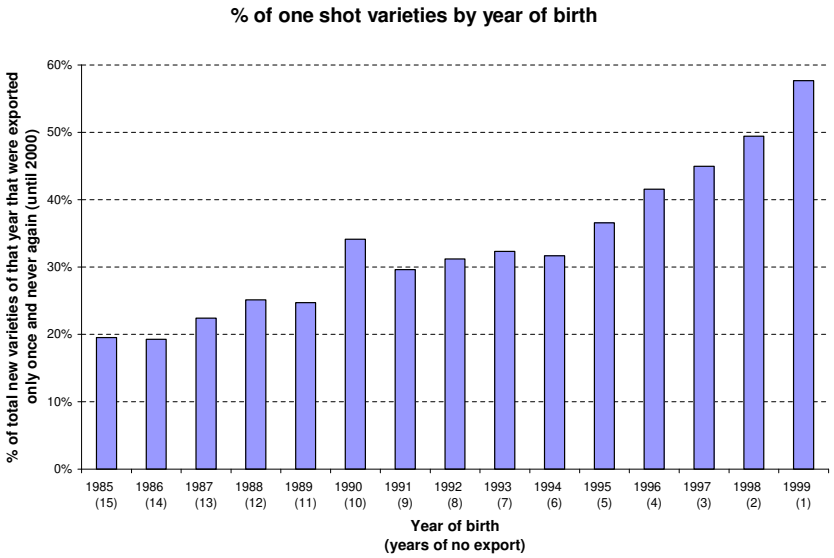
This also suggests that there might not only exist destination specific fixed costs of exporting but that they might be uncertain. Otherwise exporters would have known ex ante if their productivity was enough to penetrate a given new market with their product and be profitable. To effectively profit from new markets, a given product must often be experimented in a new market. Firms are likely to not know the real demand of their product, the tastes of consumers, the trustability of distribution channels, etc., so they probably face important uncertainties[44] Thus, to effectively establish exports of a product in a new country firms have to overcome not only the typical fixed costs but the uncertainty costs of learning if your product is viable[45].

[44] Eslava et al frame this issue as a probable learning period in which buyers try out the product in a very limited scale. The idea of a period of exploration is consistent with that of cost uncertainty. With respect to scale however, the fact that the distribution of experimentation does not change much between a cutoff of $100,000 and 1 million dollars casts some doubt into that argument.

The idea of demand uncertainty in demand has been modelled by Vettas (2000), where it is unknown ex-ante, depends on past sales (learning) and investment in knowing the demand has appropriability problems.

[45] Obviously, with the database used I cannot know or infer if the firm or firms that exported this products had other products exported in the same country, but on average this seem unlikely given the small number of firms that export more than one product (see Bernard et al 2007). This would not not be true the firms that experiment with products in new markets are those who export multiproducts. I

Graph 8 shows the same world average of the percentage one shot exporters but separated by year of occurrence. It shows that if we take a one year period (1999) close to 60% of the new varieties were not exported the following year. If we take a two year period (1998 bar) almost 50% of the new varieties in 1998 were not exported in the following two years. If we move farther away in time the lower the % of one shots. This is expected because there is more time to experiment or try again the same or a similar product under the same category, in which case the variety will not be a one shot anymore. If one assumes that an acceptable time to call an export an experiment is if the product was not exported for 3 or 4 years after a trial, the data shows that around 40% of new varieties are one-shots. It is also likely that in the cases where there is another experiment after 3 or more years, it is not the same firm the one who tries to penetrate the market again. So it is probable that if instead of analyzing products we moved to the firm level the percentages would be even higher.



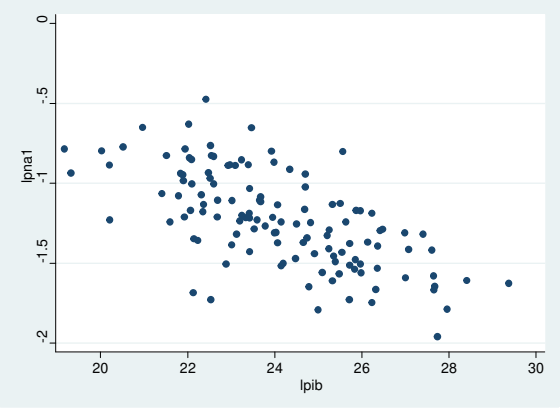
Graph 8

The high prevalence of one shot exporters (at the firm level) has already been described by Eaton et al (2007) for the case of Colombian firms in 1996-2005. They find that in every year most new exporters do not continue doing so. However they do not discriminate if the new firms are exporting new or old varieties. Since I cannot look at old What I am showing here is that not mattering if the underlying firm(s) has

don't know of any literature that has analyzed this.

exported before, there is a relatively high chance of failure when entering a new market a new or old product for the first time, which is a different finding theirs.

Finally, again, the percentage of failures of new varieties seems to be correlated with country size. A simple plot of this percentage with GDP per capita in the beginning of the period of analysis (1984) shows a negative relation. A simple regression shows also that GDP per capita doesn't seem to affect this. Again, further research is needed to disentangle among several hypothesis sustaining this relation (if robust)[46].



Graph 9

dep var: % of one shot exports 84-00	coef	t-test
log gdpv	-0.09	-8.5
log gdppc	-0.02	-0.69
N	124	
R^2-adjusted	0.43	

Current trade theory, analyzed in section 2. does not take uncertainty and experimentation into account. The uncertainty is typically about productivity before entering the industry, not about entering a new market. Firms do not export if the fixed cost of getting into a country are higher than the net profit before those fixed cost. They do not experiment. This finding suggest they do, and opens questions about the dynamics and barriers of penetration of new markets that are interesting pursuing as a potential line of research.

7 Conclusions

This paper shows that destinations matter in export growth. Moreover, the difficulties of entering markets seem to be crucial at the product

[46] Again country size in terms of the robustness of the market and the competiteveness firms face, together with network effects (better information of the markets firms are penetrating) might be a possible explanation. Also it might be possible that the type of products exported by smaller economies are less differentiable or have some other characteristic that makes them more prone to failure.

level. Decomposing export growth through a simple though insightful methodology indicates that after the growth in value of old varieties, geographic expansion at the product-destination level explains a significant percentage of world and countries' export growth in the period 1984-2000. Perhaps suprisingly typical focus on product innovation, new destinations for existing products contributes substantially more to export growth than new products. It also adds some interesting empirical facts about the apparent difficulty of entering new markets, as countries only colonize a small portion of their known product and destination space, as the most competitive products of most countries only reach a few destinations and as the process of entering a new market seems to suggest important uncertainties of success, once the decision to export is made.

The relevance of destinations for growth in this 16 year period is not easily explained by the theory, suggesting that there might be potential informational externalities to the cost of exporting, at the product and country level, that can have relevant policy implications. Although only a hypothesis, assessing the relative importance of gravity and these potential externalities on the dynamics of product penetration, testing is a natural avenue of further work. A second potential direction is an in depth analysis of the uncertainties of product penetration and how they relate to country level as well as firm level variables, together with destination firm level variables. Does the rate of failure of introduction of new varieties depend on the type of product and the quadrant of colonization of this papers framework? What is the interaction of differential costs of entering markets, externalities, and the rate of failure? And, finally, what is the role for policy?

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9 Appendix 1: Database treatment

The original Feenstra database was adjusted in the following ways to work in this paper.

1 - I dropped any observation that had less than $100,000 2000 US$ to eliminate exports that are too small to be considered exports to a given country of a given product. This threshold is introduced on the one hand to reduce the likelihood of misclassified exports or extremely low values which would not be considered economically an export of a country to another one. On the other hand, Feenstra's database for the years 1984-2000 eliminates was acquired with values of more than $100,000 per transaction, but after adjustments made to the database there were several registries of less than 100,000. The elimination of these low values helps keep consistency with that initial data problem.

2 - Another issue that significantly affected the time frame used in this paper is a reclassification of products from SITC rev.1 to SITC rev.2 that happened in 1984. When dealing with product lines, one usually has to confront the critic of how to differentiate new products from simply the opening of aggregated product categories into some more dissaggregated. While it is impossible to solve this issue with certainty given the size of the dataset used, one can look at major shifts of product lines and correct to try to make the database as consistent as possible. There is one main change in product composition and that happens in 1984, year when the product classification changed. Until 1983 the classification used was SITC rev 1, and starting from 1984 the SITC rev.2 began to be used. Despite the fact that the whole dataset has been homologated for SITC rev. 2, a simple analysis of the product categories of world exports reveals that several unique product lines were "opened" into a wider range of product categories, starting in 1984. This would account for new products in the decomposition exercise but they were simply reclassification of product categories, and thus bias the results towards new products. For example, several product categories that were simply a 3 digit category with a 0 (for example 5870) were opened into 5 or more categories (for example 5871, 5872, 5875, 5879, etc) while the original category was emptied. This process was not automatic but most of the adjustment was done in 1984. For this reason I decided to use the period 1984-2000 for my analysis. An alternative could have been the extending the analysis back to 1962, but decreasing the number of product lines. But since I am working already at the 4 digit level of dissaggregation, I thought it was too costly in terms of aggregating even more any diversification into the same categories and imputing them to existing or new varieties. What I can do to and plan to for a possible second version is doing a similar analysis for the period

1962-1983 independent of the period 1984-2000 to see if results change significantly or not.

3- Starting in 1984, year in which the classification system changed from SITC rev.1 to SITC rev.2, the database contains several exports for which the sitc4 code contains one or more X or an A, and not only numbers[47]. This is due to exports which at the 3 digit level are higher than the sum at 4 digit (the same happens accordingly between 1 and 2 digits and 2 and 3 digits). They are given an X if there are other codes at the 4 digit and an A if the only exports reported are at the 3 digit. Both types of adjustment have been erased for the effects of this study because they do not represent a particular product and add noise to the number of product categories. See Feenstra et. al. (2005) for details

3- I dropped a series of countries which were not countries but auxiliary definitions or territories which were adminstrative zones of other countries. I also dropped Yemen and its previous two separated countries.

4- I am going to assume for simplicity and for consistency through time that countries that were divided after the initial date of analysis are still the same country. This affects Czech Republic, Slovakia, all former Yugoslavia and all former USSR. This is probably a strong assumption to make because when this countries were formed, they became, well, new countries, with their own laws, legislation, barriers, government, which implies that to export to them certain innovations must be made. On the other hand if something, it biases the importance of new destinations downward. So any estimation of its relevance in world exports will be conservative under these assumptions.

5- A particular case under this adjustment is Germany. This is the opposite case, where two countries were merged into one. In this case also to keep consistency through time I am going to assume that both were one country for the whole period. The alternative would be to eliminate East Germany. The first choice also pushes results away from the relevance of new export destinations.

6- I am dropping countries that for my base year had less than $50 million in total exports and if they had a population of less than 2 million. The idea of this is to take out countries that are too small or which begin with such low exports that any opening of the economy makes their export growth look artificially enormous. I do my analysis also dropping this assumption and the results are almost identical.

The list of countries that are dropped due to each reason are presented in Table A-1. The number of observations and export value lost

[47] Also there is couple of data points that have an empty SITC code, which were eliminated.

due to this adjustments (except number 6[48]) are presented in Table A-2.

7- Important countries like France, Belgium and Switzerland have their exports added with Monaco, Luxemburg and Liechtenstein respectively. I am assuming for simplicity that the exports correspond only to the larger countries.

[48]The reason why I am not counting these countries is that I use them for all the calculations, except for the final estimations. Exports of every country include those to these countries.

Appendix Tables

Table A-1
Territories initially dropped from the analysis

Auxiliary Countries	Overseas Territories
Afr.Other NS	Bermuda
Africa N.NES	Br.Antr.Terr
Areas NES	China FTZ
Asia NES	Falkland Is
Asia West NS	Fr Ind O
CACM NES	Fr.Guiana
Carib. NES	Gibraltar
China SC	Greenland
E Europe NES	Guadeloupe
EEC NES	New Caledonia
Eur. EFTA NS	St.Helena
Eur.Other NE	St.Pierre Mq
Int Org	
LAIA NES	
Neutral Zone	
Occ.Pal.Terr	
Oth.Oceania	
US NES	

Table A-2
Final Country Adjustments to Database

Countries Included in Final Analysis

Afghanistan	Germany	Nigeria
Albania	Ghana	Norway
Algeria	Greece	Pakistan
Angola	Guatemala	Panama
Argentina	Guinea	Papua_N_Guin
Australia	Haiti	Paraguay
Austria	Honduras	Peru
Bangladesh	Hungary	Philippines
Belgium_Lux	India	Poland
Benin	Indonesia	Portugal
Bolivia	Iran	Romania
Brazil	Iraq	Rwanda
Bulgaria	Ireland	Saudi_Arabia
Burundi	Israel	Senegal
Cameroon	Italy	Sierra_Leone
Canada	Jamaica	Singapore
Cent_Afr_Rep	Japan	South_Africa
Chad	Jordan	Spain
Chile	Kenya	Sri_Lanka
China	Korea_D_P_Rp	Sudan
China_HK_SAR	Korea_Rep	Sweden
Colombia	Lebanon	Switz_Liecht
Congo	Liberia	Syria
Costa_Rica	Libya	Taiwan
Cote_Divoire	Madagascar	Tanzania
Cuba	Malawi	Thailand
Czechoslovak	Malaysia	Togo
Dem_Rp_Congo	Mali	Tunisia
Denmark	Mexico	Turkey
Dominican_Rp	Morocco	Uganda
Ecuador	Mozambique	UK
Egypt	Myanmar	Uruguay
El_Salvador	Nepal	USA
Ethiopia	Netherlands	Venezuela
Finland	New_Zealand	Viet_Nam
Fm_USSR	Nicaragua	Zambia
Fm_Yugoslav	Niger	Zimbabwe
France_Monac		

Countries Merged Into

Germany	
Fm_German_FR	
Fm_German_DR	

Fm_USSR	
Russian_Fed	
Estonia	
Latvia	
Lithuania	
Belarus	
Rep_Moldova	
Ukraine	
Kazakhstan	
Tajikistan	
Kyrgyzstan	
Turkmenistan	
Uzbekistan	
Azerbaijan	
Armenia	
Georgia	

Fm_Yugoslavia	
Yugoslavia	
Macedonia	
Slovenia	
Bosnia_Herzgovina	

Czecholovakia	
Czech_Rep	
Slovakia	

Dropped due to filters Initial Exports <50M or population < 2M

Bahamas
Bahrain
Barbados
Belize
Burkina_Faso
Cambodia
China_MC_SAR
Cyprus
Djibouti
Eq_Guinea
Fiji
Gabon
Gambia
GuineaBissau
Guyana
Iceland
Kiribati
Kuwait
Lao_P_Dem_R
Malta
Mauritania
Mauritius
Mongolia
Neth_Ant_Aru
Oman
Qatar
Samoa
Seychelles
Somalia
St_Kt_Nev_An
Suriname
Trinidad_Tbg
Untd_Arab_Em

Countries considered in initial analysis	145
Countries finaly used after filters	112

Table A-3
Observations and Export Value lost from database from Filtering

year	Export Value Lost: Dropped product codes	Initially dropped countries	$100K filter	Total loss	Observations lost: Dropped product codes	Initially dropped countries	$100K filter	Total loss
1984	0.9%	3.1%	0.4%	1.3%	1.4%	2.2%	18.1%	18.6%
1985	1.9%	5.1%	0.4%	2.2%	1.6%	2.1%	17.5%	18.0%
1986	1.5%	3.2%	0.3%	1.9%	1.1%	2.1%	15.9%	16.4%
1987	0.3%	2.4%	0.3%	0.5%	0.7%	2.1%	14.2%	14.4%
1988	0.3%	2.5%	0.2%	0.5%	0.7%	2.3%	12.5%	13.0%
1989	0.3%	2.6%	0.2%	0.5%	0.7%	2.2%	11.1%	11.5%
1990	0.3%	2.6%	0.1%	0.4%	0.8%	2.3%	9.5%	10.1%
1991	0.0%	2.5%	0.1%	0.1%	0.3%	2.2%	9.1%	9.2%
1992	0.1%	2.7%	0.1%	0.2%	0.9%	2.2%	8.7%	9.0%
1993	0.1%	3.1%	0.1%	0.1%	0.7%	2.2%	7.7%	7.9%
1994	0.0%	3.1%	0.1%	0.2%	0.5%	2.2%	6.5%	6.6%
1995	0.1%	3.0%	0.1%	0.2%	0.6%	2.2%	5.6%	5.7%
1996	0.1%	3.3%	0.0%	0.2%	1.2%	1.8%	4.8%	5.3%
1997	0.1%	2.3%	0.0%	0.2%	1.3%	1.7%	4.7%	5.2%
1998	0.1%	2.8%	0.0%	0.2%	0.8%	1.7%	3.6%	4.0%
1999	0.1%	2.4%	0.0%	0.1%	0.6%	1.6%	2.9%	3.2%
2000	0.1%	3.5%	0.0%	0.2%	1.3%	1.7%	2.3%	2.8%

Table A-4
ALTERNATIVE DECOMPOSITION
Contribution to world export growth 1984-

year	colonization of original space	new destinations	new products	new dest/ new prod
1985	45.6%	11.9%	5.3%	2.3
1986	20.6%	1.4%	2.2%	0.6
1987	12.6%	6.9%	1.6%	4.5
1988	13.1%	5.5%	1.5%	3.7
1989	15.0%	5.5%	1.7%	3.2
1990	13.8%	4.1%	1.6%	2.6
1991	14.9%	4.8%	1.5%	3.2
1992	15.1%	5.2%	1.7%	3.0
1993	16.9%	6.2%	2.0%	3.1
1994	16.4%	5.8%	2.1%	2.8
1995	16.3%	5.4%	2.1%	2.5
1996	17.2%	5.7%	2.3%	2.5
1997	18.2%	5.7%	2.5%	2.3
1998	18.7%	5.6%	2.6%	2.1
1999	18.4%	5.8%	2.7%	2.1
2000	18.3%	6.6%	3.0%	2.2

Table A.5

		Alternative Decomposition				
1984-2000	(1)	(2) - (3)	(4)	(5) + (7)	(6) + (7)	
	Real Export Growth	net growth of 1984 varieties (intensive)	Colonization of existing variety space	new destinations (extensive)	new products (extensive)	new dest/ new prod
Full Sample *						
total [1]	479%	347%	88%	31%	14%	
contribution to (1) [2]	-	72.4%	18.3%	6.6%	3.0%	2.2
Filtered sample						
total [1]	486%	354%	87%	32%	14%	
contribution to (1) [2]	-	72.8%	18.0%	6.6%	3.0%	2.2
Developing economies						
total [1]	596%	329%	164%	64%	44%	
contribution to (1) [2]	-	55.3%	27.4%	10.8%	7.4%	1.5
Developed economies						
total [1]	428%	355%	55%	17%	1%	
contribution to (1) [2]	-	82.9%	12.8%	4.0%	0.3%	11.8
Top 20 Developing						
total [1]	1169%	678%	310%	118%	72%	
contribution to (1) [2]	-	58.0%	26.5%	10.1%	6.2%	1.6
Rank 21-40 Developing						
total [1]	437%	197%	137%	56%	51%	
contribution to (1) [2]	-	45.1%	31.5%	12.8%	11.7%	1.1
Rank 41-60 Developing						
total [1]	244%	124%	78%	23%	21%	
contribution to (1) [2]	-	50.8%	32.1%	9.6%	8.8%	1.1
Worse 20 Developing						
total [1]	87%	35%	32%	9%	13%	
contribution to (1) [2]	-	40.1%	36.7%	10.8%	14.4%	0.8

* without country filters of population or minimum export value in 1984. For the rest of the calculation the filter is applied unless stated.

[1] To aggregate countries I weighted the growth of each by its importance to the 1984 exports of the relevant full group being compared

[2] contribution to (1) simply divides each column by column (1)

Note: The values for USA correspond to 1999, due to an error in the Feenstra Database for the 2000 values, which account for less than half of the countries exported by the US in previous years

Table A2.1

Export Decomposition Ranked by export growth
% growth 1984-2000

			(1)	(2)	(3)	(4)	(5)	(6)	(1) - (6)	(2) + (3) + (4) + (5)	(2) + (3)	(4) + (5)
Rank	Country	Export growth	1984 surviving varieties growth	new dest in 1984 variety space	new dest, old prod	new prod old dest	new dest new prod	deaths	Intensive	Extensive	New Destinations	New Products
1	Viet_Nam	8249%	491%	1800%	1041%	3739%	1212%	33%	457%	7792%	2841%	4951%
2	China	2687%	1693%	681%	231%	71%	19%	7%	1686%	1002%	912%	90%
3	Thailand	1577%	591%	681%	106%	192%	24%	16%	574%	1002%	787%	216%
4	Ireland	1345%	967%	379%	1%	8%	0%	10%	957%	388%	380%	8%
5	Bangladesh	1332%	649%	461%	46%	187%	6%	18%	631%	700%	507%	193%
6	Philippines	1149%	655%	274%	43%	185%	7%	15%	641%	509%	317%	192%
7	Korea_Rep	1129%	568%	327%	193%	42%	8%	8%	559%	569%	520%	49%
8	Costa_Rica	1049%	566%	215%	19%	244%	12%	8%	558%	491%	234%	257%
9	Turkey	984%	402%	351%	135%	75%	44%	23%	379%	605%	486%	119%
10	Malaysia	945%	526%	289%	53%	80%	4%	8%	518%	426%	342%	84%
11	Israel	909%	603%	231%	45%	42%	2%	13%	590%	320%	275%	44%
12	Hungary	902%	268%	538%	29%	100%	4%	36%	231%	671%	567%	104%
13	Mexico	885%	704%	117%	27%	44%	1%	9%	696%	190%	145%	45%
14	Singapore	794%	458%	292%	48%	11%	0%	16%	442%	352%	341%	12%
15	Taiwan	783%	494%	136%	159%	3%	1%	9%	485%	298%	294%	4%
16	Honduras	751%	274%	22%	15%	455%	2%	17%	257%	494%	37%	457%
17	Chile	737%	453%	149%	69%	74%	3%	10%	443%	294%	218%	76%
18	Nepal	730%	344%	41%	32%	341%	30%	58%	286%	444%	73%	371%
19	Spain	683%	501%	184%	5%	10%	0%	17%	484%	199%	189%	10%
20	Portugal	658%	445%	198%	1%	30%	0%	16%	429%	229%	199%	30%
21	Myanmar	649%	124%	84%	59%	394%	37%	48%	76%	573%	143%	431%
22	Sri_Lanka	635%	371%	150%	20%	105%	3%	13%	358%	277%	170%	107%
23	Czechoslovak	600%	308%	258%	8%	43%	1%	17%	291%	310%	266%	44%
24	Angola	597%	263%	94%	254%	7%	1%	23%	240%	356%	348%	8%
25	Dominican_Rp	577%	450%	52%	9%	94%	1%	29%	420%	157%	61%	95%
26	Colombia	572%	335%	161%	4%	88%	0%	16%	319%	253%	165%	88%
27	Pakistan	565%	339%	159%	48%	36%	5%	21%	318%	248%	206%	41%
28	Tunisia	562%	331%	167%	12%	73%	2%	23%	308%	254%	178%	75%
29	Syria	559%	365%	60%	95%	51%	10%	22%	343%	216%	155%	61%
30	Guatemala	552%	373%	36%	16%	143%	1%	18%	355%	197%	53%	144%
31	Poland	540%	247%	259%	9%	53%	0%	28%	219%	321%	268%	54%
32	India	529%	330%	165%	22%	36%	3%	27%	303%	226%	187%	39%
33	El_Salvador	490%	102%	7%	22%	378%	5%	25%	77%	413%	30%	383%
34	Austria	482%	373%	118%	0%	4%	0%	13%	360%	122%	118%	4%
35	Finland	457%	263%	171%	30%	3%	0%	10%	253%	204%	200%	4%
36	Morocco	456%	251%	152%	16%	57%	3%	22%	229%	227%	168%	59%
37	USA	450%	391%	39%	26%	0%	0%	6%	385%	65%	65%	0%
38	Canada	437%	387%	45%	7%	7%	1%	9%	379%	59%	52%	7%
39	Italy	425%	357%	68%	7%	1%	0%	7%	349%	75%	75%	1%
40	France_Monac	425%	362%	63%	7%	0%	0%	8%	354%	71%	71%	0%
41	South_Africa	422%	179%	144%	81%	13%	17%	11%	168%	255%	225%	30%
42	Japan	416%	350%	32%	41%	0%	0%	7%	343%	74%	73%	0%
43	Germany	413%	375%	32%	10%	0%	0%	5%	370%	43%	42%	0%
44	Norway	410%	308%	107%	1%	4%	0%	9%	299%	111%	107%	4%
45	Hong Kong	399%	262%	59%	79%	4%	3%	8%	255%	144%	138%	7%
46	Sweden	398%	321%	72%	16%	2%	0%	12%	309%	90%	88%	2%
47	Argentina	397%	156%	156%	24%	90%	1%	28%	127%	270%	180%	90%
48	Indonesia	394%	131%	138%	31%	94%	6%	7%	124%	270%	169%	101%
49	UK	391%	349%	42%	6%	0%	0%	7%	342%	49%	48%	0%
50	Sudan	389%	-9%	26%	2%	143%	255%	28%	-37%	426%	29%	397%
51	Ghana	387%	207%	107%	33%	50%	10%	19%	188%	199%	140%	59%
52	Netherlands	376%	330%	50%	3%	0%	0%	6%	323%	53%	53%	0%
53	Belgium_Lux	374%	322%	54%	5%	0%	0%	7%	316%	59%	59%	0%
54	Fm_USSR	374%	202%	97%	87%	12%	1%	25%	177%	197%	184%	13%
55	Switz_Liecht	370%	320%	48%	8%	1%	0%	8%	313%	57%	56%	1%
56	Denmark	366%	268%	99%	6%	3%	0%	10%	258%	108%	105%	3%
57	Australia	346%	225%	97%	35%	4%	0%	15%	210%	136%	132%	4%
58	Madagascar	344%	62%	35%	30%	221%	9%	14%	48%	296%	65%	231%
59	New_Zealand	329%	230%	72%	20%	20%	0%	13%	217%	112%	92%	20%
60	Mozambique	329%	146%	41%	75%	42%	93%	68%	78%	250%	116%	134%
61	Bulgaria	310%	97%	171%	49%	38%	18%	63%	34%	276%	220%	56%
62	Zimbabwe	307%	106%	76%	90%	31%	27%	23%	83%	224%	165%	59%
63	Jamaica	301%	160%	78%	18%	53%	2%	10%	150%	151%	96%	55%
64	Nicaragua	280%	91%	24%	2%	193%	20%	50%	41%	239%	26%	213%
65	Korea_D_P_Rp	261%	19%	80%	29%	112%	65%	44%	-25%	287%	109%	178%
66	Papua_N_Guin	260%	98%	12%	24%	116%	24%	14%	84%	176%	36%	140%
67	Brazil	258%	163%	99%	11%	4%	0%	19%	144%	114%	110%	5%
68	Ecuador	255%	137%	63%	13%	50%	2%	9%	128%	127%	76%	51%
69	Paraguay	248%	72%	109%	10%	105%	0%	48%	24%	224%	118%	105%
70	Venezuela	241%	169%	60%	2%	21%	1%	11%	158%	83%	62%	21%
71	Uruguay	241%	69%	94%	24%	72%	1%	19%	50%	191%	118%	73%
72	Peru	233%	104%	82%	33%	31%	1%	17%	87%	146%	114%	31%
73	Romania	226%	100%	127%	25%	22%	6%	54%	47%	180%	152%	28%

Table A2.1 Continued

Export Decomposition Ranked by export growth
% growth 1984-2000

			(1)	(2)	(3)	(4)	(5)	(6)	(1) - (6)	(2) + (3) + (4) + (5)	(2) + (3)	(4) + (5)
Rank	Country	Export growth	1984 surviving varieties growth	new dest in 1984 variety space	new dest, old prod	new prod old dest	new dest new prod	deaths	Intensive	Extensive	New Destinations	New Products
72	Peru	233%	104%	82%	33%	31%	1%	17%	87%	146%	114%	31%
73	Romania	226%	100%	127%	25%	22%	6%	54%	47%	180%	152%	28%
74	Nigeria	219%	152%	10%	57%	5%	1%	7%	145%	73%	67%	6%
75	Greece	214%	91%	131%	4%	17%	0%	28%	63%	151%	134%	17%
76	Benin	213%	9%	21%	141%	55%	67%	80%	-71%	283%	161%	122%
77	Cent_Afr_Rep	206%	197%	12%	11%	4%	5%	23%	174%	32%	23%	10%
78	Niger	203%	-27%	0%	4%	4%	226%	4%	-31%	234%	4%	230%
79	Malawi	200%	96%	18%	57%	10%	31%	12%	84%	117%	75%	41%
80	Saudi_Arabia	195%	160%	29%	9%	4%	0%	7%	154%	41%	37%	4%
81	Mali	189%	57%	2%	102%	41%	19%	32%	25%	164%	104%	60%
82	Iraq	187%	169%	11%	36%	1%	0%	29%	140%	48%	47%	1%
83	Algeria	179%	115%	65%	7%	1%	0%	10%	105%	74%	72%	1%
84	Cuba	168%	30%	79%	105%	7%	8%	62%	-31%	200%	184%	15%
85	Guinea	168%	88%	11%	37%	30%	6%	5%	83%	85%	49%	36%
86	Iran	165%	90%	19%	51%	10%	9%	14%	76%	88%	70%	19%
87	Congo	136%	-3%	74%	51%	10%	11%	8%	-10%	147%	126%	21%
88	Kenya	128%	76%	21%	4%	36%	1%	10%	66%	62%	25%	38%
89	Dem_Rp_Congo	124%	32%	11%	111%	2%	0%	32%	0%	124%	122%	2%
90	Albania	120%	12%	51%	2%	140%	4%	88%	-77%	197%	53%	144%
91	Jordan	118%	23%	57%	40%	42%	12%	55%	-32%	150%	97%	53%
92	Bolivia	112%	-44%	90%	9%	69%	3%	16%	-60%	171%	99%	72%
93	Cote_Divoire	111%	76%	27%	15%	3%	1%	12%	63%	47%	43%	4%
94	Tanzania	110%	2%	43%	9%	79%	7%	30%	-28%	138%	52%	86%
95	Egypt	104%	23%	52%	9%	34%	4%	18%	5%	99%	61%	38%
96	Libya	102%	108%	9%	0%	6%	1%	21%	86%	16%	10%	6%
97	Fm_Yugoslav	94%	76%	56%	1%	3%	0%	43%	33%	60%	57%	3%
98	Ethiopia	88%	57%	19%	12%	15%	2%	16%	40%	48%	31%	17%
99	Panama	76%	30%	50%	11%	19%	1%	35%	-5%	81%	61%	21%
100	Cameroon	74%	37%	19%	37%	2%	0%	22%	15%	59%	56%	2%
101	Chad	73%	12%	0%	47%	21%	12%	19%	-7%	80%	47%	33%
102	Senegal	70%	43%	36%	4%	17%	1%	32%	10%	59%	41%	19%
103	Uganda	37%	-23%	11%	19%	33%	3%	7%	-30%	67%	31%	36%
104	Sierra_Leone	33%	-23%	3%	0%	44%	71%	62%	-85%	118%	3%	115%
105	Liberia	31%	72%	4%	11%	6%	1%	63%	9%	22%	16%	6%
106	Togo	22%	-14%	14%	65%	11%	9%	63%	-77%	99%	79%	20%
107	Afghanistan	18%	3%	33%	15%	19%	3%	54%	-51%	69%	48%	21%
108	Haiti	18%	34%	2%	0%	12%	0%	30%	4%	15%	3%	12%
109	Zambia	17%	-27%	14%	50%	15%	7%	42%	-69%	86%	63%	22%
110	Burundi	-8%	-31%	5%	22%	1%	4%	10%	-40%	33%	27%	6%
111	Lebanon	-13%	-43%	22%	4%	16%	3%	16%	-59%	46%	26%	19%
112	Rwanda	-15%	-26%	8%	17%	2%	8%	25%	-51%	35%	25%	10%

Columns numbered (1) to (6) in tables A2.1 and A2.2 decompose that growth in the different dimensions explained in the methodology section. The first column of that group shows the growth of existing varieties - product/destination combinations that existed in 1984 and survived in 2000 -. The second column shows the growth of exports of `old' products into new destinations for the product but not for the country -an expansion to new dots in the lower left quadrant in the framework of section 4-. The third column shows the importance of new destinations of existing products into completely new markets for 1984 (expansion into the upper left quadrant). The sum of these two is what I call new destinations. The fourth column shows the importance of new products in destinations where the country has already exported other products in the past. The fifth column shows the importance of new products not exported in 1984 into completely new destinations. The sum of (4) and (5) in the table is what I call new products. Finally the sixth column indicates how important are deaths of varieties that were exported in 1984 and were not exported in 2000. The intensive margin is the difference between (1) and (6). This represents the net growth of exporting `more of the same'. The extensive margin is the contribution to growth of (2), (3), (4) and (5). That is, the sum of new products and new destinations.

Table A2.2

Export Decomposition Ranked by export growth
Contribution to export growth 1984-2000

			(1)	(2)	(3)	(4)	(5)	(6)	(1) - (6)	(2) + (3) + (4) + (5)	(2) + (3)	(4) + (5)	(3) + (5)			
Rank	Country	Export growth	1984 surviving varieties growth	new dest in 1984 variety space	new dest, old prod	new prod old dest	new dest new prod	deaths	Intensive	Extensive	New Destinations	New Products	New Destinations 2	% product space covered 84	% destination space covered 84	% variety space covered 84
1	Viet_Nam	8249%	5.9%	21.8%	12.6%	45.3%	14.7%	0.4%	5.5%	94.5%	34.4%	60.0%	27.3%	9.0%	13.8%	0.1%
2	China	2687%	63.0%	25.3%	8.6%	2.6%	0.7%	0.3%	62.7%	37.3%	33.9%	3.3%	9.3%	68.5%	34.5%	3.2%
3	Thailand	1577%	37.5%	43.2%	6.7%	12.2%	1.5%	1.0%	36.4%	63.6%	49.9%	13.7%	8.2%	43.0%	70.3%	1.6%
4	Ireland	1345%	71.9%	28.2%	0.1%	0.6%	0.0%	0.7%	71.2%	28.8%	28.3%	0.6%	0.1%	66.1%	74.5%	2.1%
5	Bangladesh	1332%	48.8%	34.6%	3.4%	14.1%	0.4%	1.4%	47.4%	52.6%	38.1%	14.5%	3.9%	7.9%	27.6%	0.2%
6	Philippines	1149%	57.0%	23.8%	3.7%	16.1%	0.6%	1.3%	55.7%	44.3%	27.6%	16.7%	4.3%	36.5%	50.3%	1.0%
7	Korea_Rep	1129%	50.3%	29.0%	17.1%	3.7%	0.7%	0.7%	49.6%	50.4%	46.1%	4.4%	17.7%	60.8%	77.9%	3.4%
8	Costa_Rica	1049%	53.9%	20.5%	1.8%	23.3%	1.2%	0.8%	53.2%	46.8%	22.3%	24.5%	3.0%	10.8%	24.8%	0.1%
9	Turkey	984%	40.8%	35.7%	13.8%	7.6%	4.5%	2.3%	38.5%	61.5%	49.4%	12.1%	18.3%	36.4%	34.5%	1.0%
10	Malaysia	945%	55.7%	30.6%	5.6%	8.5%	0.4%	0.8%	54.9%	45.1%	36.2%	8.9%	6.1%	51.8%	62.1%	1.4%
11	Israel	909%	66.3%	25.4%	4.9%	4.6%	0.3%	1.5%	64.8%	35.2%	30.3%	4.9%	5.2%	45.4%	48.3%	1.4%
12	Hungary	902%	29.7%	59.6%	3.2%	11.1%	0.4%	4.0%	25.6%	74.4%	62.9%	11.5%	3.7%	56.8%	36.6%	1.7%
13	Mexico	885%	79.5%	13.3%	3.1%	5.0%	0.1%	1.0%	78.6%	21.4%	16.3%	5.1%	3.2%	56.8%	33.1%	1.1%
14	Singapore	794%	57.6%	36.8%	6.1%	1.4%	0.0%	2.0%	55.6%	44.4%	42.9%	1.5%	6.1%	61.6%	66.2%	3.0%
15	Taiwan	783%	63.1%	17.3%	20.3%	0.4%	0.1%	1.2%	61.9%	38.1%	37.6%	0.5%	20.4%	68.4%	31.7%	4.1%
16	Honduras	751%	36.5%	2.9%	2.0%	60.6%	0.2%	2.3%	34.2%	65.8%	4.9%	60.9%	2.3%	7.5%	20.7%	0.1%
17	Chile	737%	61.5%	20.2%	9.4%	10.0%	0.3%	1.4%	60.0%	40.0%	29.6%	10.4%	9.7%	19.9%	44.1%	0.5%
18	Nepal	730%	47.1%	5.6%	4.4%	46.7%	4.1%	7.9%	39.2%	60.8%	10.0%	50.8%	8.5%	4.2%	9.7%	0.0%
19	Spain	683%	73.4%	26.9%	0.8%	1.5%	0.0%	2.5%	70.9%	29.1%	27.6%	1.5%	0.8%	77.7%	86.2%	6.1%
20	Portugal	658%	67.7%	30.0%	0.2%	4.5%	0.0%	2.5%	65.2%	34.8%	30.3%	4.5%	0.2%	48.7%	61.4%	1.8%
21	Myanmar	649%	19.1%	12.9%	9.0%	60.7%	5.7%	7.4%	11.7%	88.3%	22.0%	66.3%	14.7%	5.8%	20.7%	0.1%
22	Sri_Lanka	635%	58.3%	23.7%	3.1%	16.5%	0.4%	2.0%	56.3%	43.7%	26.8%	16.9%	3.5%	13.4%	33.1%	0.3%
23	Czechoslovak	600%	51.3%	42.9%	1.4%	7.1%	0.1%	2.9%	48.4%	51.6%	44.3%	7.3%	1.5%	60.8%	54.5%	2.1%
24	Angola	597%	44.2%	15.8%	42.6%	1.1%	0.2%	3.9%	40.3%	59.7%	58.4%	1.3%	42.7%	1.5%	9.7%	0.0%
25	Dominican_Rp	577%	78.0%	9.1%	1.5%	16.3%	0.2%	5.1%	72.9%	27.1%	10.6%	16.5%	1.7%	13.0%	15.2%	0.1%
26	Colombia	572%	58.5%	28.1%	0.8%	15.3%	0.0%	2.8%	55.7%	44.3%	28.9%	15.4%	0.8%	25.6%	46.9%	0.5%
27	Pakistan	565%	60.0%	28.0%	8.5%	6.4%	0.9%	3.8%	56.2%	43.8%	36.5%	7.3%	9.4%	24.2%	57.9%	0.7%
28	Tunisia	562%	59.0%	29.7%	2.1%	13.0%	0.4%	4.2%	54.8%	45.2%	31.8%	13.4%	2.5%	18.6%	37.2%	0.3%
29	Syria	559%	65.3%	10.7%	17.1%	9.1%	1.8%	3.9%	61.4%	38.6%	27.8%	10.9%	18.9%	8.8%	21.4%	0.1%
30	Guatemala	552%	67.6%	6.6%	3.0%	26.0%	0.2%	3.3%	64.3%	35.7%	9.5%	26.1%	3.1%	8.6%	25.5%	0.1%
31	Poland	540%	45.6%	47.9%	1.6%	9.9%	0.1%	5.1%	40.5%	59.5%	49.6%	9.9%	1.7%	58.7%	53.1%	1.8%
32	India	529%	62.3%	31.1%	4.2%	6.8%	0.5%	5.0%	57.3%	42.7%	35.4%	7.3%	4.7%	55.0%	67.6%	2.3%
33	El_Salvador	490%	20.8%	1.5%	4.5%	77.2%	1.0%	5.0%	15.7%	84.3%	6.1%	78.2%	5.5%	5.6%	19.3%	0.1%
34	Austria	482%	77.3%	24.5%	0.0%	0.8%	0.0%	2.6%	74.7%	25.3%	24.5%	0.8%	0.0%	76.2%	84.8%	5.2%
35	Finland	457%	57.7%	37.4%	6.5%	0.8%	0.0%	2.3%	55.4%	44.6%	43.8%	0.8%	6.5%	58.4%	69.0%	2.9%
36	Morocco	456%	55.0%	33.3%	3.4%	12.4%	0.6%	4.8%	50.2%	49.8%	36.8%	13.0%	4.0%	20.9%	49.7%	0.5%
37	USA	450%	87.0%	8.7%	5.7%	0.1%	0.0%	1.4%	85.6%	14.4%	14.4%	0.1%	5.7%	90.0%	90.3%	16.7%
38	Canada	437%	88.6%	10.3%	1.5%	1.5%	0.1%	2.0%	86.6%	13.4%	11.8%	1.6%	1.6%	79.1%	84.8%	4.1%
39	Italy	425%	84.0%	15.9%	1.7%	0.1%	0.0%	1.7%	82.2%	17.8%	17.6%	0.1%	1.7%	84.4%	95.9%	12.7%
40	France_Monac	425%	85.3%	14.9%	1.7%	0.0%	0.0%	1.9%	83.3%	16.7%	16.6%	0.0%	1.7%	89.5%	96.6%	14.9%
41	South_Africa	422%	42.3%	34.1%	19.1%	3.1%	3.9%	2.5%	39.8%	60.2%	53.2%	7.0%	23.1%	44.2%	32.4%	1.3%
42	Japan	416%	84.0%	7.7%	9.9%	0.1%	0.0%	1.7%	82.3%	17.7%	17.6%	0.1%	9.9%	81.3%	97.9%	13.0%
43	Germany	413%	90.8%	7.8%	2.5%	0.1%	0.0%	1.2%	89.7%	10.3%	10.3%	0.1%	2.5%	90.8%	95.9%	19.0%
44	Norway	410%	75.1%	26.0%	0.1%	0.9%	0.0%	2.2%	72.9%	27.1%	26.2%	0.9%	0.1%	54.0%	76.6%	2.5%
45	Hong Kong	399%	65.7%	14.7%	19.9%	1.0%	0.7%	1.9%	63.8%	36.2%	34.5%	1.6%	20.5%	54.2%	75.9%	3.1%
46	Sweden	398%	80.5%	18.1%	3.9%	0.5%	0.0%	3.0%	77.5%	22.5%	22.0%	0.5%	3.9%	74.9%	83.4%	6.5%
47	Argentina	397%	39.2%	39.3%	6.0%	22.6%	0.1%	7.1%	32.1%	67.9%	45.2%	22.7%	6.1%	42.5%	68.3%	1.3%
48	Indonesia	394%	33.2%	35.2%	7.8%	24.0%	1.6%	1.8%	31.4%	68.6%	43.0%	25.6%	9.5%	30.4%	49.0%	0.9%
49	UK	391%	89.2%	10.7%	1.6%	0.1%	0.0%	1.7%	87.5%	12.5%	12.4%	0.1%	1.6%	87.9%	97.2%	15.5%
50	Sudan	389%	-2.2%	6.7%	0.6%	36.7%	65.5%	7.3%	-9.5%	109.5%	7.3%	102.2%	66.1%	5.8%	25.5%	0.1%
51	Ghana	387%	53.4%	27.6%	8.6%	12.8%	2.5%	4.9%	48.5%	51.5%	36.2%	15.3%	11.1%	3.1%	19.3%	0.1%
52	Netherlands	376%	87.6%	13.2%	0.8%	0.1%	0.0%	1.7%	85.9%	14.1%	14.0%	0.1%	0.8%	85.6%	95.9%	9.6%
53	Belgium_Lux	374%	86.1%	14.4%	1.3%	0.1%	0.0%	1.8%	84.3%	15.7%	15.6%	0.1%	1.3%	84.5%	94.5%	8.0%
54	Fm_USSR	374%	54.0%	25.8%	23.4%	3.2%	0.3%	6.7%	47.3%	52.7%	49.2%	3.6%	23.7%	56.2%	33.1%	1.6%
55	Switz_Liecht	370%	86.7%	13.1%	2.1%	0.2%	0.0%	2.1%	84.6%	15.4%	15.2%	0.2%	2.1%	76.9%	88.3%	7.0%
56	Denmark	366%	73.2%	27.1%	1.7%	0.8%	0.0%	2.8%	70.4%	29.6%	28.8%	0.8%	1.7%	69.2%	87.6%	4.6%
57	Australia	346%	65.1%	28.0%	10.1%	1.1%	0.1%	4.3%	60.8%	39.2%	38.1%	1.1%	10.2%	65.9%	72.4%	2.6%
58	Madagascar	344%	18.0%	10.1%	8.8%	64.3%	2.8%	4.0%	14.0%	86.0%	18.9%	67.1%	11.6%	3.2%	15.9%	0.1%

Table A2.2 Continued

Export Decomposition Ranked by export growth
Contribution to export growth 1984-2000

			(1)	(2)	(3)	(4)	(5)	(6)	(1) - (6)	(2) + (3) + (4) + (5)	(2) + (3)	(4) + (5)	(3) + (5)			
Rank	Country	Export growth	1984 surviving varieties growth	new dest in 1984 variety space	new dest, old prod	new prod old dest	new dest new prod	deaths	Intensive	Extensive	New Destinations	New Products	New Destinations 2	% product space covered 84	% destination space covered 84	% variety space covered 84
59	New_Zealand	329%	69.8%	21.8%	6.1%	6.0%	0.1%	3.9%	65.9%	34.1%	27.9%	6.2%	6.3%	43.8%	64.8%	1.2%
60	Mozambique	329%	44.4%	12.6%	22.7%	12.6%	28.3%	20.6%	23.8%	76.2%	35.3%	40.9%	51.0%	5.2%	15.2%	0.1%
61	Bulgaria	310%	31.4%	55.1%	15.8%	12.3%	5.7%	20.3%	11.1%	88.9%	70.9%	18.0%	21.4%	40.2%	31.0%	0.7%
62	Zimbabwe	307%	34.5%	24.6%	29.2%	10.2%	8.8%	7.4%	27.1%	72.9%	53.8%	19.1%	38.0%	7.0%	22.8%	0.1%
63	Jamaica	301%	53.1%	25.8%	6.1%	17.8%	0.5%	3.3%	49.8%	50.2%	31.9%	18.3%	6.7%	8.3%	14.5%	0.1%
64	Nicaragua	280%	32.6%	8.5%	0.8%	68.8%	7.2%	17.8%	14.7%	85.3%	9.2%	76.0%	8.0%	2.6%	17.2%	0.1%
65	Korea_D_P_Rp	261%	7.3%	30.7%	11.0%	42.9%	25.0%	16.9%	-9.7%	109.7%	41.7%	67.9%	36.0%	12.7%	15.2%	0.1%
66	Papua_N_Guin	260%	37.5%	4.7%	9.3%	44.6%	9.2%	5.3%	32.2%	67.8%	14.0%	53.8%	18.5%	4.5%	18.6%	0.1%
67	Brazil	258%	63.1%	38.3%	4.2%	1.7%	0.1%	7.5%	55.6%	44.4%	42.5%	1.9%	4.3%	71.3%	81.4%	4.0%
68	Ecuador	255%	53.7%	24.5%	5.2%	19.4%	0.7%	3.6%	50.2%	49.8%	29.7%	20.1%	5.9%	9.4%	31.7%	0.2%
69	Paraguay	248%	29.2%	43.8%	4.0%	42.3%	0.1%	19.4%	9.8%	90.2%	47.7%	42.5%	4.1%	6.5%	24.1%	0.1%
70	Venezuela	241%	69.9%	24.8%	0.8%	8.6%	0.3%	4.5%	65.5%	34.5%	25.7%	8.9%	1.2%	17.5%	41.4%	0.3%
71	Uruguay	241%	28.8%	39.0%	9.8%	30.1%	0.3%	7.9%	20.9%	79.1%	48.8%	30.4%	10.1%	21.6%	29.0%	0.4%
72	Peru	233%	44.6%	35.1%	14.0%	13.1%	0.4%	7.2%	37.4%	62.6%	49.1%	13.5%	14.4%	23.0%	46.2%	0.5%
73	Romania	226%	44.3%	56.0%	11.2%	9.6%	2.5%	23.7%	20.7%	79.3%	67.2%	12.2%	13.7%	44.3%	33.8%	1.2%
74	Nigeria	219%	69.5%	4.6%	26.2%	2.4%	0.3%	3.0%	66.5%	33.5%	30.8%	2.7%	26.5%	6.9%	19.3%	0.1%
75	Greece	214%	42.5%	61.2%	1.7%	7.7%	0.1%	13.2%	29.3%	70.7%	62.9%	7.8%	1.8%	44.3%	57.2%	1.4%
76	Benin	213%	4.4%	9.6%	66.0%	25.8%	31.7%	37.5%	-33.1%	133.1%	75.6%	57.5%	97.7%	1.9%	10.3%	0.0%
77	Cent_Afr_Rep	206%	95.5%	5.6%	5.3%	2.1%	2.6%	11.1%	84.4%	15.6%	10.9%	4.7%	7.9%	2.2%	11.0%	0.0%
78	Niger	203%	-13.2%	0.0%	2.0%	2.0%	111.3%	2.1%	-15.3%	115.3%	2.0%	113.4%	113.3%	1.3%	4.8%	0.0%
79	Malawi	200%	47.9%	9.0%	28.6%	5.1%	15.5%	6.1%	41.8%	58.2%	37.6%	20.6%	44.1%	1.4%	15.9%	0.0%
80	Saudi_Arabia	195%	82.2%	14.7%	4.5%	1.9%	0.2%	3.4%	78.8%	21.2%	19.2%	2.0%	4.6%	19.9%	30.3%	0.3%
81	Mali	189%	30.1%	1.0%	54.1%	21.4%	10.3%	16.8%	13.3%	86.7%	55.0%	31.7%	64.3%	1.8%	13.1%	0.0%
82	Iraq	187%	90.0%	5.9%	19.0%	0.4%	0.2%	15.5%	74.5%	25.5%	24.9%	0.6%	19.2%	7.0%	24.1%	0.1%
83	Algeria	179%	64.6%	36.5%	4.0%	0.6%	0.2%	5.8%	58.8%	41.2%	40.5%	0.7%	4.2%	8.3%	39.3%	0.2%
84	Cuba	168%	18.0%	47.1%	62.5%	4.4%	4.6%	36.6%	-18.6%	118.6%	109.6%	9.0%	67.1%	9.8%	22.8%	0.2%
85	Guinea	168%	52.2%	6.8%	22.3%	17.7%	3.8%	2.8%	49.4%	50.6%	29.1%	21.5%	26.2%	1.9%	13.1%	0.0%
86	Iran	165%	54.8%	11.6%	30.8%	5.8%	5.4%	8.5%	46.3%	53.7%	42.4%	11.3%	36.2%	8.5%	26.9%	0.2%
87	Congo	136%	-1.9%	54.6%	37.5%	7.5%	8.1%	5.8%	-7.7%	107.7%	92.1%	15.6%	45.5%	2.5%	15.2%	0.1%
88	Kenya	128%	59.1%	16.2%	3.0%	28.2%	1.1%	7.6%	51.5%	48.5%	19.1%	29.4%	4.1%	8.3%	28.3%	0.2%
89	Dem_Rp_Congo	124%	25.8%	9.0%	89.6%	1.3%	0.1%	25.8%	0.0%	100.0%	98.6%	1.4%	89.8%	5.2%	18.6%	0.1%
90	Albania	120%	9.7%	42.5%	1.3%	116.6%	3.6%	73.6%	-63.9%	163.9%	43.8%	120.1%	4.9%	9.0%	13.8%	0.1%
91	Jordan	118%	19.5%	48.1%	34.1%	35.3%	9.9%	46.9%	-27.4%	127.4%	82.2%	45.2%	44.0%	10.5%	21.4%	0.1%
92	Bolivia	112%	-39.0%	80.5%	8.1%	62.1%	2.6%	14.3%	-53.3%	153.3%	88.6%	64.7%	10.7%	5.3%	18.6%	0.1%
93	Cote_Divoire	111%	68.4%	24.7%	13.9%	3.0%	1.0%	11.1%	57.3%	42.7%	38.6%	4.0%	15.0%	8.9%	26.2%	0.2%
94	Tanzania	110%	1.7%	39.0%	8.3%	71.6%	6.8%	27.4%	-25.7%	125.7%	47.3%	78.4%	15.1%	5.0%	22.1%	0.1%
95	Egypt	104%	22.1%	50.2%	8.3%	32.4%	4.2%	17.2%	4.9%	95.1%	58.5%	36.6%	12.5%	14.7%	29.0%	0.3%
96	Libya	102%	105.2%	9.3%	0.3%	5.6%	0.6%	21.0%	84.2%	15.8%	9.6%	6.2%	0.9%	4.1%	25.5%	0.1%
97	Fm_Yugoslav	94%	81.3%	59.5%	1.5%	3.7%	0.0%	45.9%	35.4%	64.6%	60.9%	3.7%	1.5%	71.4%	65.5%	2.7%
98	Ethiopia	88%	64.2%	21.8%	13.2%	16.5%	2.7%	18.4%	45.8%	54.2%	35.0%	19.2%	15.9%	4.7%	17.9%	0.1%
99	Panama	76%	38.7%	65.1%	14.2%	25.5%	1.9%	45.4%	-6.7%	106.7%	79.3%	27.4%	16.1%	21.9%	25.5%	0.3%
100	Cameroon	74%	50.1%	25.9%	50.2%	2.7%	0.5%	29.3%	20.7%	79.3%	76.1%	3.2%	50.7%	5.6%	17.9%	0.1%
101	Chad	73%	16.5%	0.0%	64.3%	29.0%	16.2%	25.9%	-9.4%	109.4%	64.3%	45.2%	80.5%	0.4%	8.3%	0.0%
102	Senegal	70%	61.2%	52.2%	6.4%	24.9%	1.7%	46.3%	14.8%	85.2%	58.6%	26.6%	8.0%	4.8%	15.2%	0.1%
103	Uganda	37%	-63.6%	31.5%	52.8%	90.6%	7.7%	19.0%	-82.6%	182.6%	84.3%	98.2%	60.5%	1.5%	15.2%	0.0%
104	Sierra_Leone	33%	-71.3%	7.7%	1.4%	134.0%	218.9%	190.8%	-262.1%	362.1%	9.2%	352.9%	220.4%	2.1%	9.0%	0.0%
105	Liberia	31%	231.4%	13.3%	36.5%	18.6%	2.2%	202.0%	29.4%	70.6%	49.8%	20.8%	38.7%	3.9%	16.6%	0.1%
106	Togo	22%	-66.7%	63.5%	300.7%	51.4%	40.4%	289.2%	-355.9%	455.9%	364.2%	91.8%	341.0%	2.3%	16.6%	0.0%
107	Afghanistan	18%	15.5%	180.3%	81.0%	100.2%	14.1%	291.0%	-275.5%	375.5%	261.2%	114.3%	95.0%	4.5%	16.6%	0.1%
108	Haiti	18%	187.4%	13.7%	0.6%	65.2%	0.4%	167.2%	20.1%	79.9%	14.3%	65.6%	1.0%	10.7%	10.3%	0.1%
109	Zambia	17%	-161.5%	81.0%	295.9%	88.3%	44.2%	247.9%	-409.4%	509.4%	376.9%	132.5%	340.1%	3.3%	18.6%	0.1%
110	Burundi	-8%	391.6%	-62.2%	-278.7%	-18.6%	-56.0%	-123.8%	515.4%	-415.4%	-340.9%	-74.5%	-334.7%	1.5%	10.3%	0.0%
111	Lebanon	-13%	332.0%	-173.1%	-31.3%	-123.7%	-26.6%	-122.7%	454.7%	-354.7%	-204.5%	-150.3%	-57.9%	14.3%	21.4%	0.2%
112	Rwanda	-15%	166.6%	-51.4%	-110.3%	-13.6%	-54.5%	-163.3%	329.9%	-229.9%	-161.8%	-68.1%	-164.8%	1.1%	9.0%	0.0%

Table A.2.3

Expansion of colonization of varieties in original space

Rank	Country	own space covered 84	% of original 1984 space used in 2000	growth of use of original space (in varieties)	% variety space covered 84	% variety space covered 00
48	Indonesia	5.8%	24.5%	321.4%	0.9%	8.9%
10	Malaysia	4.5%	17.2%	286.4%	1.4%	8.4%
3	Thailand	5.1%	19.4%	280.8%	1.6%	10.4%
2	China	13.4%	46.8%	248.1%	3.2%	22.7%
9	Turkey	7.7%	26.0%	237.3%	1.0%	7.7%
13	Mexico	5.7%	19.2%	233.9%	1.1%	6.9%
1	Viet_Nam	9.6%	30.5%	216.5%	0.1%	2.6%
26	Colombia	3.9%	11.4%	195.9%	0.5%	2.6%
7	Korea_Rep	7.1%	20.5%	188.6%	3.4%	14.2%
32	India	6.1%	16.3%	165.0%	2.3%	8.7%
17	Chile	5.6%	14.5%	157.4%	0.5%	2.8%
31	Poland	5.7%	14.5%	155.1%	1.8%	6.5%
23	Czechoslovak	6.3%	15.8%	152.9%	2.1%	7.4%
11	Israel	6.4%	15.8%	147.9%	1.4%	5.4%
19	Spain	9.1%	22.1%	143.5%	6.1%	18.3%
70	Venezuela	4.3%	10.2%	135.9%	0.3%	1.7%
57	Australia	5.5%	12.9%	135.9%	2.6%	8.2%
14	Singapore	7.3%	17.2%	135.0%	3.0%	9.6%
4	Ireland	4.2%	9.8%	134.0%	2.1%	6.0%
20	Portugal	5.9%	13.7%	132.5%	1.8%	5.7%
41	South_Africa	8.7%	19.7%	127.4%	1.3%	8.1%
8	Costa_Rica	4.9%	11.0%	125.0%	0.1%	0.7%
6	Philippines	5.3%	11.8%	124.0%	1.0%	3.8%
75	Greece	5.4%	12.2%	123.6%	1.4%	4.7%
54	Fm_USSR	8.8%	19.3%	120.7%	1.6%	7.1%
22	Sri_Lanka	7.2%	15.8%	119.5%	0.3%	1.3%
12	Hungary	8.0%	17.3%	116.7%	1.7%	5.6%
5	Bangladesh	8.0%	17.0%	113.0%	0.2%	0.8%
68	Ecuador	5.5%	11.6%	111.7%	0.2%	1.0%
38	Canada	6.0%	12.7%	110.7%	4.1%	10.6%
47	Argentina	4.5%	9.4%	107.3%	1.3%	4.3%
27	Pakistan	4.8%	9.8%	105.1%	0.7%	2.2%
28	Tunisia	4.7%	9.4%	98.6%	0.3%	1.4%
35	Finland	7.3%	14.3%	97.6%	2.9%	7.4%
36	Morocco	4.6%	9.0%	94.6%	0.5%	1.7%
80	Saudi_Arabia	5.5%	10.6%	93.6%	0.3%	1.4%
15	Taiwan	18.6%	35.9%	92.8%	4.1%	11.4%
59	New_Zealand	4.2%	8.0%	90.1%	1.2%	3.2%
56	Denmark	7.5%	14.1%	88.7%	4.6%	10.6%
53	Belgium_Lux	10.0%	18.7%	87.1%	8.0%	18.1%
95	Egypt	6.9%	12.8%	86.0%	0.3%	1.5%
67	Brazil	6.8%	12.4%	81.7%	4.0%	9.1%
45	Hong Kong	7.5%	13.6%	80.9%	3.1%	7.7%
44	Norway	6.1%	10.9%	78.1%	2.5%	5.7%
34	Austria	8.0%	14.1%	76.8%	5.2%	11.1%
52	Netherlands	11.6%	20.3%	74.8%	9.6%	20.2%

Table A.2.3 Continued

Expansion of colonization of varieties in original space

Rank	Country	own space covered 84	% of original 1984 space used in 2000	growth of use of original space (in varieties)	% variety space covered 84	% variety space covered 00
52	Netherlands	11.6%	20.3%	74.9%	9.6%	20.2%
39	Italy	15.6%	26.7%	70.9%	12.7%	26.2%
86	Iran	8.1%	13.7%	69.4%	0.2%	1.6%
72	Peru	4.7%	7.8%	68.0%	0.5%	1.6%
61	Bulgaria	5.8%	9.7%	67.8%	0.7%	2.5%
51	Ghana	12.0%	20.0%	67.0%	0.1%	0.3%
29	Syria	5.8%	9.4%	61.4%	0.1%	0.5%
73	Romania	7.8%	12.3%	57.1%	1.2%	3.1%
55	Switz_Liecht	10.2%	15.9%	55.6%	7.0%	13.2%
46	Sweden	10.3%	16.0%	55.1%	6.5%	12.3%
40	France_Monac	17.1%	26.3%	53.6%	14.9%	27.5%
25	Dominican_Rp	6.9%	10.1%	45.6%	0.1%	0.4%
49	UK	18.0%	25.4%	41.0%	15.5%	26.2%
30	Guatemala	6.2%	8.7%	40.2%	0.1%	0.5%
71	Uruguay	5.6%	7.9%	40.1%	0.4%	0.9%
43	Germany	21.7%	28.5%	31.4%	19.0%	30.0%
62	Zimbabwe	8.6%	10.7%	24.9%	0.1%	0.5%
97	Fm_Yugoslav	5.8%	7.0%	21.7%	2.7%	4.1%
42	Japan	16.2%	19.0%	17.3%	13.0%	18.5%
58	Madagascar	13.9%	16.3%	17.2%	0.1%	0.3%
99	Panama	5.4%	6.2%	15.7%	0.3%	0.7%
63	Jamaica	8.0%	9.1%	14.3%	0.1%	0.2%
92	Bolivia	7.9%	8.8%	10.7%	0.1%	0.3%
21	Myanmar	9.6%	10.4%	9.2%	0.1%	0.5%
111	Lebanon	5.2%	5.5%	5.7%	0.2%	0.4%
16	Honduras	7.4%	7.7%	4.0%	0.1%	0.3%
79	Malawi	20.1%	20.7%	3.3%	0.0%	0.1%
37	USA	20.4%	20.9%	2.5%	16.7%	33.1%
94	Tanzania	9.6%	9.8%	2.2%	0.1%	0.3%
100	Cameroon	12.3%	12.4%	1.2%	0.1%	0.2%
93	Cote_Divoire	10.3%	10.3%	0.0%	0.2%	0.4%
103	Uganda	14.3%	14.3%	0.0%	0.0%	0.1%
91	Jordan	5.6%	5.6%	-0.6%	0.1%	0.4%
65	Korea_D_P_Rp	6.3%	6.0%	-3.8%	0.1%	0.6%
102	Senegal	12.3%	11.7%	-5.0%	0.1%	0.2%
85	Guinea	10.8%	10.2%	-5.7%	0.0%	0.1%
88	Kenya	8.2%	7.7%	-6.0%	0.2%	0.4%
87	Congo	14.2%	13.0%	-8.3%	0.1%	0.1%
64	Nicaragua	11.2%	10.0%	-10.4%	0.1%	0.2%
18	Nepal	9.4%	8.3%	-12.0%	0.0%	0.2%
74	Nigeria	9.6%	8.0%	-16.0%	0.1%	0.3%
83	Algeria	6.0%	4.8%	-19.6%	0.2%	0.3%
66	Papua_N_Guin	10.5%	8.4%	-19.8%	0.1%	0.2%
69	Paraguay	8.3%	6.6%	-20.3%	0.1%	0.3%
33	El_Salvador	6.4%	5.0%	-21.7%	0.1%	0.2%
96	Libya	8.5%	6.2%	-26.7%	0.1%	0.2%
98	Ethiopia	9.8%	7.2%	-27.3%	0.1%	0.1%
81	Mali	13.2%	9.5%	-27.5%	0.0%	0.1%
77	Cent_Afr_Rep	12.2%	8.8%	-28.2%	0.0%	0.0%
50	Sudan	7.6%	5.4%	-29.5%	0.1%	0.2%
24	Angola	17.9%	12.2%	-31.4%	0.0%	0.1%
84	Cuba	6.9%	4.5%	-34.7%	0.2%	0.2%
106	Togo	12.7%	7.9%	-37.5%	0.0%	0.1%
108	Haiti	9.3%	5.4%	-42.2%	0.1%	0.1%
110	Burundi	12.9%	7.1%	-44.4%	0.0%	0.0%
109	Zambia	10.1%	5.4%	-46.3%	0.1%	0.1%
101	Chad	29.2%	14.6%	-50.0%	0.0%	0.0%
90	Albania	8.7%	4.1%	-52.8%	0.1%	0.2%
60	Mozambique	7.8%	3.5%	-55.6%	0.1%	0.1%
107	Afghanistan	9.9%	4.1%	-58.8%	0.1%	0.1%
105	Liberia	11.1%	4.5%	-59.1%	0.1%	0.1%
112	Rwanda	23.8%	9.2%	-61.3%	0.0%	0.0%
76	Benin	15.7%	5.9%	-62.5%	0.0%	0.1%
89	Dem_Rp_Congo	12.8%	4.6%	-64.2%	0.1%	0.1%
104	Sierra_Leone	15.4%	4.0%	-73.7%	0.0%	0.1%
82	Iraq	6.3%	1.2%	-81.7%	0.1%	0.1%
78	Niger	14.3%	2.4%	-83.3%	0.0%	0.0%

Note: Sorted by growth of use of original space (in varieties)

Graph A2.1

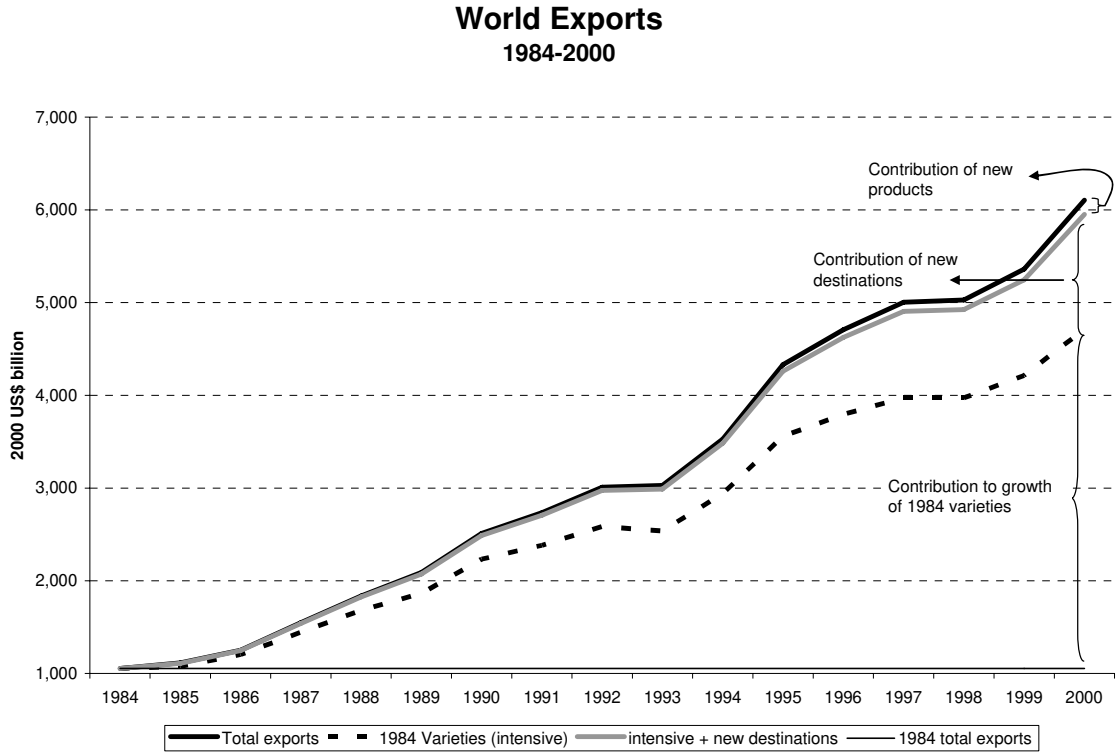

Table A.2.4

year	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	**2000**
84 structure	37.9%	76.0%	79.2%	80.1%	78.0%	80.8%	79.0%	78.3%	75.1%	76.2%	76.4%	75.0%	73.8%	73.4%	73.4%	**72.4%**
new destinations	56.8%	21.9%	19.2%	18.4%	20.3%	17.6%	19.5%	20.0%	22.9%	22.0%	21.5%	22.7%	23.7%	24.0%	23.9%	**24.6%**
new products	5.3%	2.2%	1.6%	1.5%	1.7%	1.6%	1.5%	1.7%	2.0%	2.1%	2.1%	2.3%	2.5%	2.6%	2.7%	**3.0%**
Total Exp Growth	6%	19%	47%	74%	98%	138%	159%	186%	187%	235%	311%	347%	375%	377%	409%	**479%**
Avg Year Growth	6%	9%	14%	15%	15%	16%	15%	14%	12%	13%	14%	13%	13%	12%	11%	**12%**

Note: calculation using 113 countries after filters.