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Temporary exports and characteristics of destination countries: first evidence from German transaction data

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Abstract

This paper uses information on all export transactions of goods by German firms with countries outside the European Union from 2009 to 2014 to document for the first time the patterns of export participation at the firm-good-destination level over time and to investigate the link between the duration of export patterns and characteristics of destination countries. It turns out that only some seven percent of all combinations were recorded in each year while more than half of all patterns are only observed once. In line with theoretical hypotheses the likelihood of permanent trade patterns increases within a firm with proximity and market size of destination countries.

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1.   Motivation

A growing literature that is based on data for exports at the transaction level which include information on which goods of which value and which weight are exported by which firms to which destination countries in a year[1] documents that export relationships tend to be highly dynamic in the short run. Using data for Chile, Álvarez, Faruq and López (2010) report that an important fraction of firms start to export new products to new markets each year. Previous experience in exporting a certain product, or exporting to a certain market, increases the probability to export these products to new markets, or new products to the same markets. Again for Chile, Blum, Claro and Horstmann (2013) find that one third of exporters enter into and exit from exporting multiple times, and that most continuing exporters enter and exit specific export destinations multiple times. Rahu (2015) report that in Estonia adding and dropping new products in exports is rife, about half of all firms change their export portfolio annually. Similarly, Buono and Fadinger (2012) find that export relationships are highly dynamic in France, where a large fraction is created and concluded each year. For Hungary, Békés and Muraközy (2012) report that about one third of firm-destination and about one half of firm-product-destination export spells are temporary only. Amador and Opromolla (2010) document frequent switching of products and destinations by firms. Similarly, Damijan, Konings and Polanec (2014) report that in Slovenia the average firm changes about one-quarter of imported and exported product-markets every year. For Spain, Esteve-Pérez, Requena-Silvente and Pallardó-Lopez (2013) find that, while the firm export status is highly persistent, firms' destination portfolio is very dynamic with a median duration of firm-country exporting relationship of two years, but the risk of exiting sharply falls

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[1] See Wagner (2016) for a comprehensive survey of 147 empirical studies that use transaction level data on exports or imports.

afterwards. Geishecker et al. (2017) report that in Denmark one third of all firm-product-destination export spells are isolated single-month one-off export transactions that are observed only once in a 49-month time window.

This high degree of short-lived export spells at the firm-good-destination level comes as a surprise because export activities incur sunk costs (e.g., for market research, adoption of the product to local conditions, or finding partners to trade with) that a firm has to pay for each good exported to each market at the start of an export relationship. "As this sunk cost is an investment that can only be recovered from a stable stream of revenues, firms are expected to export a given product to a given destination over a long period of time." (Békés and Muraközy 2012, 232)

Evidence cited above point out that, contrary to this, firms often do not export a given product to a given destination over a long period of time, at least not in the countries looked at hitherto. This paper contributes to the literature by adding evidence for Germany, the third largest actor on the world market for exports of goods – keeping in mind that "the credibility of a new finding that is based on carefully analyzing two data sets is far more than twice that of a result based only on one" (Hamermesh 2000, p. 376). It uses information on all export transactions of goods by German firms with countries outside the European Union from 2009 to 2014 to document the patterns of export participation at the firm-good-destination level over time for all goods and for goods by *Basic Classes of Goods* – capital goods, intermediate goods, and consumption goods. Furthermore, it investigates the link between the duration of export patterns and characteristics of destination countries.

The rest of the paper is organized as follows: Section 2 introduces the transaction level data for exports of goods in Germany. Section 3 presents descriptive evidence on the frequency of patterns of exports over the years 2009 to

2014. Section 4 reports results from an econometric investigation of the hypothesis put forward by Békés and Muraközy (2012) that the likelihood of a long trade spell increases with proximity and market size of destination countries.

2. Transaction level data for exports of goods in Germany

In Germany information on the goods traded internationally and on the countries with which these goods are traded is available from the statistic on foreign trade (*Außenhandelsstatistik*). This statistic is based on two sources. One source is the reports by German firms on transactions with firms from countries that are members of the European Union (EU); these reports are used to compile the so-called *Intrahandelsstatistik* on intra-EU trade. The other source is transaction-level data collected by the customs on trade with countries outside the EU (the so-called *Extrahandelsstatistik*).[2] The raw data that are used to build the statistic on foreign trade are transaction level data, i.e. they relate to one transaction of a German firm with a firm located outside Germany at a time. Published data from this statistic report exports or imports aggregated at the level of goods traded and by country of destination or origin.

The data used in this paper are based on the raw data at the transaction level. The unit of observation in these data is a single transaction between economic agents located in two countries, e.g. the export of X kilogram of good A with a value of Y Euro by firm Z from Germany to China. The data cover 24,885,099 transactions in 2009 and 35,120,715 transactions in 2014.

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[2] Note that firms with a value of exports to EU-countries that did not exceed 400,000 Euro in the previous year or in the current year do not have to report to the statistic on intra-EU trade. For trade with firms from non-member countries all transactions that exceed 1,000 Euro (or have a weight that exceeds 1,000 kilogram) are registered. For details see Statistisches Bundesamt, Qualitätsbericht Außenhandel, Januar 2011.

The data cover trade with 243 different countries. For a given year, the sum over all export transactions is identical to the figures published by the Federal Statistical Office for total exports of Germany.

The record of the transaction usually[3] includes a firm identifier (tax registration number) of the exporting firm. Over the years 2009 to 2014 the data include information on export activities of 212,742 different firms. Using the firm identifier information at the transaction level can be aggregated at the level of the trading firm to generate year-firm-product-value-weight-destination data. The firm identifier can be used to link information on export transactions of a firm over time, too.

In the transaction level data products are distinguished according to very detailed classifications. In the data used for this study the Harmonized System at 6-digit level (HS6) is used as the product classification system. The data cover 5,370 different goods in exports and 5,389 different goods in imports.

The Federal Statistical Office prepared this type of data for the reporting year 2009 for the first time; the most recent data available at the time of writing this paper are for 2014.

The transaction data can be used to identify all firm-good-destination combinations in a year and to document for each combination whether it has been recorded in a certain year between 2009 and 2014 or not. For example, firm A may have exported good B to country C in year 2009 and 2011, but not in the years 2010, 2012, 2013 and 2014. As explained in footnote 2 above for exports to countries that are members of the EU there is a reporting threshold so that export transactions of firms with exports below this threshold are not recorded. For firm-good-destination

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[3] Note that this identifier is missing for 0.67 percent of all export transactions and 1.2 percent of all import transactions for various reasons including that traders do not have a (German) tax identification number. Further details were not revealed to me.

combinations of these firms this may lead to an incorrect classification of a combination as non-existent in the respective year. Therefore, in this paper we will only investigate export transactions with non-EU countries. Here all transactions that exceed 1,000 Euro (or have a weight that exceeds 1,000 kilogram) are registered and, therefore, the problem of "false zeros" does not vanish completely but is much less severe.

3. Patterns of exports by firm-good-destination over time

In a first step it is documented how many firm-good-destination transactions were recorded by the customs in different combinations of years between 2009 and 2014. We call each different combination of years a pattern and label it with a six-digit number made of zeros and ones, where 0 indicates a year in which the respective firm-good-destination transaction was not recorded and 1 indicates a year in which we observed this transaction. The first digit refers to 2009, the second to 2010, and so on. The pattern 000001, therefore, refers to all firm-good-destination combinations that were only recorded in 2014, 101000 refers to firm-good-destination combinations that were recorded in 2009 and 2011 (but not in 2010 and not in 2012 to 2014), and 111111 refers to all firm-good-destination combinations that were recorded in each year between 2009 and 2014. This leads to 63 different patterns of exports by firm-good-destination over the six years.

Table 1 reports the frequency of each pattern and its percentage share in all patterns for all goods exported to non-EU destination countries between 2009 and 2014. In total, there were 7,814,901 firm-good-destination combinations. Only 558,632 (or 7.15 percent) of these combinations were recorded in each year. Permanent export in the sense of exports of one good by one firm to one destination country in each year, therefore, is rare. On the other hand, 54.17% or more than half

of all patterns are only observed once – one-time exports by a firm of a good to a destination, therefore, are quite common. Perforated pattern that include zeros between ones (like 111001, or 101001) tend to be rare, while patterns with some ones in a row and zeros otherwise (like 111100, or 000011, or 000111) are more common. The big picture reported here is in line with results from similar investigations reported for other countries that are summarized in the introductory section.

[Table 1 near here]

Why do patterns of export by firm-good-destination differ? Why do we only rarely observe permanent export on the one hand and why are one-time exports quite common on the other hand? Obviously, characteristics of the exported goods will play a role here. You will not expect a shipyard to export submarines to a certain destination country each year (leading to a pattern 111111), and you will not be surprised to learn that such an export deal did only happen once over a period of six years (with a pattern like 000100, or 010000). On the other hand, you might expect that, for example, Volkswagen exports cars from a given HS6-category to several destinations each year (leading to a number of patterns 111111).

For confidentiality reasons it is not possible to look at the patterns for different goods separately. However, some evidence on the role of the characteristics of the exported goods for the patterns of export by firm-good-destination might be revealed by an investigation that distinguishes between goods from the three so-called *Basic*

Classes of Goods – Capital goods, Intermediate goods, and Consumption goods.[4] Table 2 - 4 report the frequency of each pattern and its percentage share in all patterns for the three Basic Classes of Goods exported to non-EU destination countries between 2009 and 2014.

[Table 2, Table 3 and Table 4 near here]

The big picture is indeed somewhat different for the three types of goods. The frequency of permanent export is smallest (5.87%) and the frequency of one-time exports is highest (58.58%) for capital goods, while permanent export is more common (6.12%) and one-time export is less often observed (55.95%) for consumption goods and permanent export is most often observed among intermediate goods (7.93%) where the share of one-time exports is the smallest (52.21%). These inter-class differences, however, are not of an order of magnitude that deserves a closer inspection. It seems that the three Basic Classes of Goods are much too broadly defined to help to understand differences in pattern of export at the firm-good-destination level over time.

4.   Export patterns and characteristics of destination countries

Békés and Muraközy (2012) build a theoretical model of heterogeneous firms to explain the prevalence of non-permanent export patterns. While a discussion of any details of this model is beyond the scope of this paper it should be pointed out that the model yields a number of testable predictions that can be matched with evidence

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[4] For the conversion of the HS6 classification of goods used in the transaction data to the Basic Classes of Goods see United Nations (2002) Statistical Papers Series M No.53, Rev. 4, p. 5ff. Details are available on request.

from the data at hand. One such hypothesis is that the likelihood of permanent trade (defined here as an export pattern represented by the six-digit string 111111) rises with proximity and market size of destination countries.[5]

To test this hypothesis empirical models are estimated. The sample is made of export activities observed at the firm-good-destination level, where each observation is classified either as permanent (with an export pattern represented by the six-digit string 111111) or not. For each observation we measure the proximity of the destination country to Germany and the economic size of the destination market. *Proximity* is measured by the distance between Germany and the destination country of exports taken from the CEPII's *GeoDist* database (Mayer and Zignago 2011). The "distw" – measure is used that calculates the distance between two countries based on bilateral distances between the biggest cities of those two countries, those inter-city distances being weighted by the share of the city in the overall country's population (see Mayer and Zignago (2011, p. 11) for details). *Market size* is measured by the Gross Domestic Product (GDP) of the country of destination, measured in Millions of US-Dollar in current prices. Information is taken from the World Bank World Development Indicators database (see http://data.worldbank.org/indicator/NY.GDP.MKTP.CD).

The dependent variable of the empirical model is either one (if the export pattern is classified as permanent) or zero. To test the hypothesis two versions of the empirical model are estimated. In the first version the dependent variable is zero if a firm-good-destination pattern is observed in one year only (i.e. the pattern is 000001, 000010, 000100, 001000, 010000 or 100000). In the second version the dependent

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[5] See Békés and Muraközy (2012), p. 240, prediction (E2). Note that predictions (E1) and (E3) refer to firm characteristics (productivity and capital costs). Given that the transaction data used here do not include information on these firm characteristics these hypotheses cannot be tested here.

variable is zero if the pattern is different from 111111. For short, version 1 tests permanent versus one-time exports, while version 2 tests permanent exports versus all other export patterns. Both versions are estimated for patterns of all goods, and for pattern of each of the three *Basic Classes of Goods* separately. This leads to eight different empirical models.

Each model includes firm fixed effects to control for unobserved firm characteristics that are not available in the transaction data (but that are important according to the model presented by Békés and Muraközy (2012), like productivity and capital costs). The estimated regression coefficients, therefore, refer to the within-firm variation of stability of export patterns over time due to variation in proximity and market size of the destination country.

The empirical models are estimated by Ordinary Least Squares, i.e. a Linear Probability Model is used.[6] Results are reported in Table 5. In line with theoretical hypotheses the likelihood of permanent trade patterns increases within a firm with proximity and market size of destination countries – for all goods, and for goods from each of the three basic classes of goods.

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[6] See Wooldridge (2010), section 15.2, for a discussion of the linear probability model for binary response. Note that the estimated standard errors here are clustered at the level of the firm.

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Table 1:   Patterns of export of German firms in trade with non-EU countries
              by firm - HS6-good – destination, 2009 - 2014

```
Pattern   | Frequency   Percent
----------+-------------------------
  000001 |  1,043,115      13.35
  000010 |    723,268       9.25
  000011 |    356,763       4.57
  000100 |    689,622       8.82
  000101 |     84,988       1.09
  000110 |    161,454       2.07
  000111 |    223,383       2.86
  001000 |    620,465       7.94
  001001 |     44,171       0.57
  001010 |     53,464       0.68
  001011 |     36,984       0.47
  001100 |    134,900       1.73
  001101 |     32,330       0.41
  001110 |     72,297       0.93
  001111 |    159,295       2.04
  010000 |    605,948       7.75
  010001 |     29,976       0.38
  010010 |     32,967       0.42
  010011 |     20,380       0.26
  010100 |     51,949       0.66
  010101 |     13,799       0.18
  010110 |     21,815       0.28
  010111 |     31,097       0.40
  011000 |    142,082       1.82
  011001 |     16,376       0.21
  011010 |     21,097       0.27
  011011 |     21,808       0.28
  011100 |     71,615       0.92
  011101 |     21,599       0.28
  011110 |     55,433       0.71
  011111 |    172,994       2.21
  100000 |    551,699       7.06
  100001 |     18,747       0.24
  100010 |     20,073       0.26
  100011 |     12,524       0.16
  100100 |     27,537       0.35
  100101 |      6,723       0.09
  100110 |     10,961       0.14
  100111 |     15,245       0.20
  101000 |     43,042       0.55
  101001 |      6,052       0.08
  101010 |      7,506       0.10
  101011 |      7,055       0.09
  101100 |     17,295       0.22
  101101 |      6,450       0.08
  101110 |     12,353       0.16
  101111 |     28,484       0.36
  110000 |    187,830       2.40
  110001 |     10,032       0.13
  110010 |     11,318       0.14
  110011 |     10,023       0.13
  110100 |     20,955       0.27
  110101 |      6,809       0.09
  110110 |     12,316       0.16
  110111 |     23,242       0.30
  111000 |    142,254       1.82
  111001 |     11,220       0.14
  111010 |     15,161       0.19
  111011 |     20,983       0.27
  111100 |     98,748       1.26
  111101 |     24,692       0.32
  111110 |    101,506       1.30
  111111 |    558,632       7.15
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   Total |  7,814,901     100.00
```

Note: 0 indicates no transaction, 1 indicates a transaction. The first digit refers to 2009, etc. The pattern 000001 refers to firm-good-destination transactions that happened only in 2014, 101000 refers to firm-good-destination transactions that happened in 2009 and 2011 (but not in 2010 and 2012 - 2014), and 111111 refers to firm-good-destination transactions that were recorded in each year between 2009 and 2014.

Table 2:   Patterns of export of German firms in trade with non-EU countries
             by firm - HS6-good – destination, 2009 – 2014: Capital goods

```
Pattern   | Frequency   Percent
----------+--------------------
   000001 |   185,464     13.99
   000010 |   137,095     10.34
   000011 |    54,679      4.12
   000100 |   131,259      9.90
   000101 |    15,271      1.15
   000110 |    26,213      1.98
   000111 |    30,261      2.28
   001000 |   116,478      8.79
   001001 |     8,431      0.64
   001010 |    10,186      0.77
   001011 |     6,435      0.49
   001100 |    22,481      1.70
   001101 |     5,677      0.43
   001110 |    11,328      0.85
   001111 |    22,230      1.68
   010000 |   112,896      8.52
   010001 |     5,828      0.44
   010010 |     6,517      0.49
   010011 |     3,667      0.28
   010100 |     9,694      0.73
   010101 |     2,582      0.19
   010110 |     3,924      0.30
   010111 |     4,996      0.38
   011000 |    21,689      1.64
   011001 |     3,003      0.23
   011010 |     3,807      0.29
   011011 |     3,758      0.28
   011100 |    11,046      0.83
   011101 |     3,843      0.29
   011110 |     8,711      0.66
   011111 |    25,157      1.90
   100000 |    93,383      7.04
   100001 |     3,354      0.25
   100010 |     3,807      0.29
   100011 |     2,294      0.17
   100100 |     5,034      0.38
   100101 |     1,274      0.10
   100110 |     1,878      0.14
   100111 |     2,350      0.18
   101000 |     7,376      0.56
   101001 |     1,105      0.08
   101010 |     1,393      0.11
   101011 |     1,270      0.10
   101100 |     2,948      0.22
   101101 |     1,170      0.09
   101110 |     2,245      0.17
   101111 |     4,602      0.35
   110000 |    26,181      1.97
   110001 |     1,654      0.12
   110010 |     1,973      0.15
   110011 |     1,655      0.12
   110100 |     3,420      0.26
   110101 |     1,171      0.09
   110110 |     2,124      0.16
   110111 |     3,713      0.28
   111000 |    16,301      1.23
   111001 |     1,829      0.14
   111010 |     2,432      0.18
   111011 |     3,400      0.26
   111100 |    13,874      1.05
   111101 |     3,958      0.30
   111110 |    14,195      1.07
   111111 |    77,771      5.87
-----------+------------------------
    Total | 1,325,740    100.00
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Note: 0 indicates no transaction, 1 indicates a transaction. The first digit refers to 2009, etc. The pattern 000001 refers to firm-good-destination transactions that happened only in 2014, 101000 refers to firm-good-destination transactions that happened in 2009 and 2011 (but not in 2010 and 2012 - 2014), and 111111 refers to firm-good-destination transactions that were recorded in each year between 2009 and 2014.

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Table 3:   Patterns of export of German firms in trade with non-EU countries
                by firm - HS6-good – destination, 2009 – 2014: Intermediate goods

```
Pattern    | Frequency   Percent
-----------+--------------------
    000001 |    621,827     13.42
    000010 |    416,733      8.99
    000011 |    217,298      4.69
    000100 |    389,158      8.40
    000101 |     52,071      1.12
    000110 |     96,181      2.08
    000111 |    141,560      3.05
    001000 |    343,052      7.40
    001001 |     26,902      0.58
    001010 |     31,736      0.68
    001011 |     23,011      0.50
    001100 |     77,122      1.66
    001101 |     20,045      0.43
    001110 |     42,930      0.93
    001111 |     99,538      2.15
    010000 |    337,932      7.29
    010001 |     18,151      0.39
    010010 |     19,755      0.43
    010011 |     12,604      0.27
    010100 |     30,606      0.66
    010101 |      8,653      0.19
    010110 |     13,343      0.29
    010111 |     20,097      0.43
    011000 |     80,229      1.73
    011001 |      9,890      0.21
    011010 |     12,769      0.28
    011011 |     13,814      0.30
    011100 |     43,024      0.93
    011101 |     13,446      0.29
    011110 |     33,703      0.73
    011111 |    109,927      2.37
    100000 |    310,973      6.71
    100001 |     11,459      0.25
    100010 |     11,867      0.26
    100011 |      7,813      0.17
    100100 |     16,492      0.36
    100101 |      4,245      0.09
    100110 |      6,638      0.14
    100111 |      9,876      0.21
    101000 |     24,715      0.53
    101001 |      3,846      0.08
    101010 |      4,605      0.10
    101011 |      4,542      0.10
    101100 |     10,564      0.23
    101101 |      4,148      0.09
    101110 |      7,577      0.16
    101111 |     18,323      0.40
    110000 |    111,491      2.41
    110001 |      6,243      0.13
    110010 |      6,967      0.15
    110011 |      6,322      0.14
    110100 |     12,683      0.27
    110101 |      4,350      0.09
    110110 |      7,514      0.16
    110111 |     14,995      0.32
    111000 |     89,811      1.94
    111001 |      7,057      0.15
    111010 |      9,369      0.20
    111011 |     13,384      0.29
    111100 |     61,867      1.33
    111101 |     15,669      0.34
    111110 |     64,538      1.39
    111111 |    367,392      7.93
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     Total |  4,634,442    100.00
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Note: 0 indicates no transaction, 1 indicates a transaction. The first digit refers to 2009, etc. The pattern 000001 refers to firm-good-destination transactions that happened only in 2014, 101000 refers to firm-good-destination transactions that happened in 2009 and 2011 (but not in 2010 and 2012 - 2014), and 111111 refers to firm-good-destination transactions that were recorded in each year between 2009 and 2014.

Table 4:   Patterns of export of German firms in trade with non-EU countries
            by firm - HS6-good – destination, 2009 – 2014: Consumption goods

```
Pattern   | Frequency  Percent
----------+-------------------
        1 |   235,824    12.71
       10 |   169,440     9.14
       11 |    84,786     4.57
      100 |   169,205     9.12
      101 |    17,646     0.95
      110 |    39,060     2.11
      111 |    51,562     2.78
     1000 |   160,935     8.68
     1001 |     8,838     0.48
     1010 |    11,542     0.62
     1011 |     7,538     0.41
     1100 |    35,297     1.90
     1101 |     6,608     0.36
     1110 |    18,039     0.97
     1111 |    37,527     2.02
    10000 |   155,120     8.36
    10001 |     5,997     0.32
    10010 |     6,695     0.36
    10011 |     4,109     0.22
    10100 |    11,649     0.63
    10101 |     2,564     0.14
    10110 |     4,548     0.25
    10111 |     6,004     0.32
    11000 |    40,164     2.17
    11001 |     3,483     0.19
    11010 |     4,521     0.24
    11011 |     4,236     0.23
    11100 |    17,545     0.95
    11101 |     4,310     0.23
    11110 |    13,019     0.70
    11111 |    37,910     2.04
   100000 |   147,343     7.94
   100001 |     3,934     0.21
   100010 |     4,399     0.24
   100011 |     2,417     0.13
   100100 |     6,011     0.32
   100101 |     1,204     0.06
   100110 |     2,445     0.13
   100111 |     3,019     0.16
   101000 |    10,951     0.59
   101001 |     1,101     0.06
   101010 |     1,508     0.08
   101011 |     1,243     0.07
   101100 |     3,783     0.20
   101101 |     1,132     0.06
   101110 |     2,531     0.14
   101111 |     5,559     0.30
   110000 |    50,158     2.70
   110001 |     2,135     0.12
   110010 |     2,378     0.13
   110011 |     2,046     0.11
   110100 |     4,852     0.26
   110101 |     1,288     0.07
   110110 |     2,678     0.14
   110111 |     4,534     0.24
   111000 |    36,142     1.95
   111001 |     2,334     0.13
   111010 |     3,360     0.18
   111011 |     4,199     0.23
   111100 |    23,007     1.24
   111101 |     5,065     0.27
   111110 |    22,773     1.23
   111111 |   113,469     6.12
-----------+-------------------------
    Total | 1,854,719   100.00
```

Note: 0 indicates no transaction, 1 indicates a transaction. The first digit refers to 2009, etc. The pattern 000001 refers to firm-good-destination transactions that happened only in 2014, 101000 refers to firm-good-destination transactions that happened in 2009 and 2011 (but not in 2010 and 2012 - 2014), and 111111 refers to firm-good-destination transactions that were recorded in each year between 2009 and 2014.

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Table 5: Permanent versus temporary exports to non-EU countries and characteristics of destination countries, Germany 2009 - 2014

Goods		All goods		Capital goods		Internediate goods		Consumption goods	
Pattern		permanent [1] versus one-time [0]	permanent [1] versus all others [0]	permanent [1] versus one-time [0]	permanent [1] versus all others [0]	permanent [1] versus one-time [0]	permanent [1] versus all others [0]	permanent [1] versus one-time [0]	permanent [1] versus all others [0]
Characteristic of destination country									
Log (Distance to Germany) in km	ß	-0.029	-0.018	-0.027	-0.017	-0.030	-0.018	-0.037	-0.022
	p	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Log (Gross Domestic Product) in Million US-$	ß	0.023	0.014	0.025	0.016	0.026	0.017	0.017	0.011
	p	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Constant	ß	0.065	0.031	-0.008	-0.013	0.037	0.013	0.174	0.096
	p	0.000	0.000	0.588	0.208	0.004	0.134	0.000	0.000
Firm fixed effects		yes	yes	yes	yes	yes	yes	yes	yes
R-squared		0.272	0.147	0.308	0.169	0.300	0.163	0.297	0.163
Number of firm-good-country Combinations		4,792,749	7,814,901	854,346	1,325,740	2,787,067	4,634,442	1,151,336	1,854,719
Number of firms		165,490	175,857	73,311	77,876	115,293	123,810	91,996	99,655

Note: The dependent variable is either 1 (if the pattern of export participation is 111111, i.e. the firm-HS6 good-destination country pattern is observed in each year between 2009 and 2014 (*permanent*)) or zero (if the firm-HS6 good-destination country pattern is either observed only in one year (*one-time*) or if the pattern is not equal to 111111 (*all others*); for a definition of the export participation pattern see Table 1. The empirical models are estimated by Ordinary Least Squares (i.e. a Linear Probability Model is used); for a discussion see text. Standard errors are clustered at the level of the firm.

Please note:

You are most sincerely encouraged to participate in the open assessment of this discussion paper. You can do so by either recommending the paper or by posting your comments.

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