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Income Inequality of Destination Countries and Trade Patterns: Evidence from Chinese Firm-level Data

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Abstract

In this paper, we investigate the relation between the export patterns and the income inequality of the destination countries using the Chinese firm-level data. Our empirical analysis finds two main results: (i) export price decreases in the income inequality of the destination countries; while (ii) the exporting firm number and export value will increase in the inequality level. With a conventionally theoretical framework, we discuss the potential influencing mechanism. A higher income inequality leads to higher share of poor consumers in a country, which will lower the quality threshold for Chinese exporters. In this case, the firms with less competitive and producing low quality products are able to enter this market. As a result, we observe that in response to a higher income inequality, more firms enter the market while the exporting price decreases in this market.

Keywords: Income Inequality; Trade Patterns; Chinese Firm-level Data

JEL Classification: F12 F14 L11

1 Introduction

How consumers' income distribution influences the market outcomes has been studied widely, e.g. the products' prices, qualities, diversities, etc.. Yet, most of the studies are based on theoretical analysis, while very few literature study this issue empirically. We concern this issue because the personal income distribution is one of core factors that shapes the market characteristics and further

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influences consumers' welfare, if consumers' preference is revealed as non-homothetic, i.e. richer people refer more on the product's quality. (Mitra and Trindade, 2005; Simonovska, 2015) Some empirical evidences have been found to support this argument. The arise of consumption inequality or other consumption patterns are believed to relate to consumers' income inequality. (Ciani, 2017; Flach and Janeba, 2017; Frankel and Gould, 2001; Jappelli and Pistaferri, 2010; Krueger and Perri, 2006) Frankel and Gould (2001) study the effect of income inequality on retail prices with the U.S. data. They find that an increase in the presence of lower-middle income households, relative to poor or upper income households, is associated with lower prices. In other studies, Krueger and Perri (2006) and Jappelli and Pistaferri (2010) find that consumption patterns change in response to changes in income inequality. The theoretical analyses based on price competition vertical differentiate models predict a negative correlation between products' quality or price and consumers' income inequality. In addition, they conclude that more firms will enter the market when the income distribution gets more dispersed. (Benassi et al., 2006; Gabszewicz and Thisse, 1979; Somekh, 2012; Yurko, 2011)

A bulk of literature also study the relation between the trade liberalization or trade patterns and the national income inequality. Generally, trade liberalization process has been proved to influence the income inequality. ¹ A domestic policy that enlarging the income gap between the rich and poor residents can also spread the income inequality issue to other countries by trading. (Mitra and Trindade, 2005) Oppositely, given the non-homothetic preference assumption, an enlargement of income inequality will reshape the trade patterns as well. That's because if consumers have the non-homothetic preference, they will consume more high quality products when they become richer. (Bastos and Silva, 2010; Comite et al., 2014; Hallak, 2006) Furthermore, countries with similar average income or income inequality level will import and consume similar products. (Choi et al., 2009; Thursby and Thursby, 1987) A richer and more unequal country will consume more manufacturing good and less necessary good. (Ciani, 2017; Flach and Janeba, 2017; Markusen, 2013)²

1

Ma and Dei (2009) find that the intermediate input trade liberalization enlarges while the final output trade liberalization reduce the income gap between the high and low skill workers in China. Limão and Panagariya (2007) find that if the government concerns about the income inequality, it will exhibit anti-trade policies. Jaimovich and Merella (2012) find that trade will also enlarge the income gap between the rich and poor countries.

2

The empirical evidences on the relation between the income inequality and imported products' quality are inconsistent.

Enlightened by these previous works, some researchers attempt to empirically test how income inequality affects a country's importing patterns. Using Brazilian firm-level exporting data, Flach and Janeba (2017) study how income inequality of destination countries affects their importing price. They find a positive correlation between the two variables, suggesting that a more unequal country will consume more proportion of manufacturing goods and less necessary goods. The price level of manufacturing goods is considered to be higher than the necessary goods. However, they further find this positive correlation between income inequality and price level only exists among middle income countries. In another study, Ciani (2017) replicates the works of Flach and Janeba (2017) using the Romanian firm-level exporting data. He finds a reverse result to Flach and Janeba (2017), i.e. the importing price is negatively correlated with the income inequality of destination countries.³ He further attributes this result to the change of products' quality in response to varying income inequality levels. Considering the inconsistent results and theories between these literatures, we attempt to re-visit this issue and explore the relevant influencing mechanism using Chinese data. Basically, our study has three purposes: Firstly, we aim to provide the evidence on Chinese exporting firms, which data cover broader industries and countries; secondly, we aim to construct a theoretical framework that nests the heterogeneous empirical findings from the previous and our studies; lastly, guided by our theoretical model, we also explore the varying trading features on both the intensive and extensive margins along with different income inequality levels of destination countries, i.e. the export value and number of market entrants to each country.

Using the Chinese firm-transaction level exporting data, we find the similar result as Ciani (2017). The firms' exporting price decreases in the income inequality level of the destination country, and this relation is only significant for the rich countries.⁴ These results are different from Flach and Janeba (2017) who find a negative correlation while Garcia-Marin (2014) and Latzer and Mayneris (2012) find a positive correlation.

³

Bekkers et al. (2012) also find a negative relation between income inequality and import price of a country. They explain this finding as the arise of hierarchic demand.

⁴

Here, we categorize the country as the rich country if it belongs to OECD group. For the non-OECD countries, we categorize them as poor countries.

(2017), which paper finds a positive relation between these two variables. However, this relation is only significant for the middle-income countries. To incorporate the different empirical findings of the previous and our studies, we build up a new theoretical framework which is based on the work of Flach and Janeba (2017) and the thoughts of Fajgelbaum et al. (2011). Our intuitive explanation is as follows. According to the findings of Fajgelbaum et al. (2011), poor countries will specialize in producing and exporting low quality products, while the rich countries will specialize in the high quality products. A rich country will import products from a poor country if this rich country pursues the low-income consumers. That means the firms from the developing countries focus in serving the poor customers in the developed countries. When the size of low-income group increases due to a higher level of income inequality, the rich country will import more low quality products from the poor country. In response, more firms that producing low quality products from the poor country will enter the rich country. Notice that if the size of low-income group is small in the developed countries, only few firms which producing relatively high quality products are able to enter the rich market. In this case, we will observe three phenomenons: (i) More Chinese firms will enter the rich markets if this market has a higher unequal income distribution; (ii) the export value will increase in the income inequality level as well; and (iii) the average export price will decrease due to the arise of higher proportion of poor consumers. Our empirical results are reconciled with our theoretical predictions. In the market of a developing country, the situation will be opposite. The developed countries export high quality products to serve the high-income consumers in the developing countries. As income inequality level increases in the developing country, the proportion of rich people will increase. As a consequence, the export value and price from the developed countries will increase.⁵

In summary, our research contributes to the existing literature by twofold: Firstly, we provide new evidences on the relation between the importing price and the income inequality of destination countries using the Chinese exporters data; secondly, guided by the theory of Fajgelbaum et al. (2011)

5

We suppose the positive relation between the income inequality and the export price found by Flach and Janeba (2017) is perhaps due to that the Brazilian products pursue relatively high quality compared with other developing countries. Thus, the Brazilian products could cover the rich consumers in the developing markets. In the developed countries, the Brazilian products cannot cover the rich consumers. That explains why the positive relation is only pronounced among some developing markets, but not the developed markets.

and our theoretical prediction, we obtain the new evidence on the trade feature regarding the trade scale between a developing and a developed country, i.e. the firm number and export value from China will increase in a developed country when the personal income distribution becomes more unequal in this market.

The rest of this paper is arranged as follows. Section 2 introduces the data set and the specification of empirical models. Section 3 presents and discusses our empirical findings. Section 4 builds up a theoretical framework and explains the influencing mechanism behind our empirical findings. Section 5 concludes our findings and contributions.

2 Empirical Strategy and Data

In this section, we first explain our estimation strategy and then present our data sources and measures of key variables.

$$y_{ijht} = \alpha Gini_{jt} + X'_{jt}\beta + \delta_{iht} + \varepsilon_{ijht} \quad (1)$$

where y_{ijht} denotes the firm-product-country-year level depend variables, either export price or value; $Gini_{jt}$ is the key explanatory variable, i.e. the gini coefficient data for each country in each year; X_{jt} controls for the other national characteristics of the destination countries, i.e. the GDP, GDP per capita, the distance from China, and the market competition intensity; ⁶ δ_{iht} controls for the firm-industry-year level fixed effects.

$$y_{jht} = \alpha Gini_{jt} + X'_{jt}\beta + \delta_{ht} + \varepsilon_{jht} \quad (2)$$

where y_{jht} denotes the product-country-year level depend variables, i.e. the country-industrial level average export price, export value, and firm number; $Gini_{jt}$ is the key explanatory variable, i.e. the gini coefficient data for each country in each year; X_{jt} controls for the other national characteristics

6

Following Flach and Janeba (2017), we use each firm's market share in either country-industrial or country level and also the firm number in country-industrial level to control for the market competition intensity.

Variables	Mean	Std. Dev.	Min.	Max.	Obs.
$\ln(price_{iht})$	1.3475	2.18301	-10.5276	17.90985	7,631,102
$\ln(price_{jht})$	1.6589	2.6434	-9.5670	17.5767	1,057,840
$\ln(firm_num_{jht})$	1.0457	1.1364	0	12.6705	1,058,720
$\ln(firm_num_{jt})$	3.5286	3.6325	0	11.0598	1,919
$Gini_{jt}$	0.3874	0.096569	0.162	0.648	427
$\ln(GDP_{jt})$	25.6985	3.1743	17.1773	32.0699	1,647
$\ln(GDP_pc_{jt})$	8.9891	1.2032	6.3020	11.6854	1,647
$\ln(distance_j)$	8.9948	0.5532	6.6964	9.8677	212

Table 1: Summary Statistics

of the destination countries, i.e. the GDP, GDP per capita, the distance from China, and the market competition intensity; ⁷ δ_{iht} controls for the firm-industry-year level fixed effects.

2.1 Data Sources

We have two data sources. Chinese firm-transaction level export data are retrieved from the records of Chinese customs. This data sets contains the information on each firm’s export value and quantity in each HS8 level transaction towards each country. The national macro data are mostly obtained from the database of World Bank, including the gini coefficient, GDP, and GDP per capita for each country. The data for the distance between China and another country are collected from the website of CEPII. The following table describes the features of our data.

3 Results

In this section, we present the estimation results of our empirical model. We are interested in testing the relationship between income inequality and export patterns. Firstly, we analyze the general pattern of how income inequality affects export prices at the product-country level. We then take a close look

⁷

Following Flach and Janeba (2017), we use each firm’s market share in either country-industrial or country level and also the firm number in country-industrial level to control for the market competition intensity. The variables indicating the market competition intensity are not included when running the regressions with the firm number as the dependent variable.

Dependent Variable: Log of Export Price, Product-country Level			
	(1)	(2)	(3)
<i>Gini_{jt}</i>	-0.762*** (0.1124)	-0.476*** (0.1536)	-0.664*** (0.158)
<i>ln(firm_num_{jht})</i>		-0.0853*** (0.00705)	
<i>Mkt_share_{jht}</i>			3.133*** (0.529)
Observations	415,266	413,405	413,405
R-squared Adjusted	0.8629	0.8638	0.8630
Other National Controls	NO	YES	YES
Product-country-year FEs	YES	YES	YES

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Notes: Standard errors are clustered in country level.

Table 2: Export Price and Income Inequality of Destinations

at the effect of income inequality on export prices in the perspective of individual exporter's strategy, i.e we estimate this effect at the firm-product-country level. Secondly, we explore the mechanism of this relationship by showing the intensive and extensive margins of exporters; we present the findings on the relationship between both the export value and number of exporters and the level of income inequality of the destination country.

3.1 The aggregate pattern of export prices with respect to income inequality

We first analyze the general pattern of how income inequality affects export prices at the aggregate product-country level.

In table 2, we analyze specification 1 on regressions with different controls. We estimate the effect of income inequality, measured by Gini Indices across destinations, on the prices of each product exported by Chinese exporters. For each sample, we report first the direct effect with only fixed effects in the first column, and we report the estimation results with a full set of time-varying destination controls including GDP, GDP per capita, and distance in the second and third columns. All regressions in

Dependent Variable: Log of Export Price, Firm-product-country Level				
	(1)	(2)	(3)	(4)
<i>Gini_{jt}</i>	-0.33*** (0.03993)	-0.19*** (0.0478)	-0.227*** (0.0472)	-0.212*** (0.04705)
<i>ln(firm_num_{fjht})</i>		-0.0153*** (0.00259)		
<i>Mkt_share_{fjt}</i>			0.7978** (0.3677)	
<i>Mkt_share_{fjht}</i>				0.0488*** (0.005207)
Observations	1,896,472	1,891,082	1,891,082	1,891,082
R-squared Adjusted	0.9242	0.9243	0.9242	0.9242
Other National Controls	NO	YES	YES	YES
Firm-product-year FEs	YES	YES	YES	YES

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Notes: Standard errors are clustered in country level.

Table 3: Export Price and Income Inequality of Destinations

Table 1 include firm-product-country and year fixed effects and the standard errors are clustered at the country level.

As the columns in table 2 indicate, income inequality is strongly inversely associated with export prices. A higher level of Gini index significantly affect the level of export prices negatively. According to column (2), a 0.1 increase of Gini index is associated with 4.7-6.6% decrease in export prices.

In order to explore the interpretation of these results, we take a deeper look at the intensive and extensive margins of export, i.e. we analyze how the number of firms or the export value towards each destination is associated with this destination's income inequality level. Table 4 and table 5 present the results of this relationship. In parallel to our finding of the negative association between export prices and income inequality, we observe that the Gini coefficient index is positively associated with the number of exporters or export value to the destination. Both the results from the full sample in column (2) and subsample in column (4) of table 4 show highly significant positive estimates, indicating that more firms export to the destination for particular products at HS8 level. Column (2) and (4) report that a 0.1 increase in Gini index is positively associated with around 2% increase in the number of exporters. When we look at table 5, we find a positive relation between the export value and the

Dependent Variable: Log of Firm Number				
	Panel A: Product-country Level		Panel B: Country Level	
	(1)	(2)	(3)	(4)
<i>Gini_{jt}</i>	-0.775 (0.503)	2.31*** (0.539)	3.165* (1.703)	3.334** (1.412)
Observations	415,266	413,405	427	399
R-squared Adjusted	0.3516	0.4218	0.6557	0.8710
Other National Controls	NO	YES	NO	YES
Product-Year FEs	YES	YES		
Year FEs			YES	YES

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Notes: Standard errors are clustered in country level.

Table 4: Firm Number and Income Inequality of Destinations

destination's income inequality. However, this relation is only significant at the product-country level, not the firm-product-country level, indicating that the increase of trade volume is mainly due to the rise of market entrants.

3.2 The Role of Income Level

We now study the role of income level in the negative relationship we find between income inequality and export prices. Flach and Janeba (2017) shows that the effect of income inequality in destination countries on export prices is nonlinear and is dependent on the income per capita. Therefore, we re-estimate our baseline specification with split samples with only OECD and non-OECD countries.

Table 7 present the results on the restricted samples. (See the table in Appendix) We observe that the negative association between income inequality and export prices still retain in general, while it is only significant for high-income OECD countries as indicated in column (1) and (2). Comparing the results in column (2) and (4), income inequality is inversely to export prices and this relationship is dependent on the level of income in the destination. According to column (2), a 1% increase of Gini index is associated with 0.67% decrease in export prices which is comparable with the estimates from the full sample in table 3. (See the table in Appendix) These results is in line with that of Flach and Janeba (2017), who find nonlinear and income-dependent effect of income inequality on export prices,

Dependent Variable: Log of Export Value					
	Panel A: Firm-product-country Level			Panel B: Product-country Level	
	(1)	(2)	(3)	(4)	(5)
$Gini_{jt}$	0.5419 (0.4666)	2.066*** (0.7623)	2.5481*** (0.8421)	4.3691*** (1.3229)	5.8701*** (1.5832)
$\ln(firm_num_{hjt})$	0.5581*** (0.0259)			0.6661*** (0.0712)	
Mkt_share_{fjt}		21.7104*** (5.0777)			
Mkt_share_{fjht}			1.4988*** (0.1374)		
Mkt_share_{jht}					-13.3456*** (2.1159)
Observations	1,891,082	1,891,082	1,891,082	413,405	413,405
R-squared Adjusted	0.4141	0.3739	0.3918	0.5567	0.4222
Other National Controls	YES	YES	YES	YES	YES
Firm-product-year FEs	YES	YES	YES		
Product-year FEs				YES	YES

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Notes: Standard errors are clustered in country level.

Table 5: Firm Number and Income Inequality of Destinations

though finding a positive one.

4 Theoretical Framework

Our empirical analysis obtains two empirical findings: (i) export price decreases in the income inequality level of the destination country; and (ii) firm number increases in the income inequality of the destination country. The first result is different from Flach and Janeba (2017), but consistent with Ciani (2017). To understand the inconsistent results among the studies, we explore the influencing mechanism by investigating the relation between the firm number and the income inequality level of the destination countries. We suppose that a higher income inequality will lead to a larger share of poor consumers. If the consumers' preference is non-homothetic, a richer consumer will buy the higher quality products. When there are more poor consumers, the quality threshold for the imports will be lower, which will induce more and lower productive firms to enter the market. Our second empirical

result confirms this hypothesis. In this section, we will introduce a theoretical framework which is adjusted based on the Flach and Janeba (2017) to show the influencing mechanism.

Built on (Flam and Helpman, 1987) and Flach and Janeba (2017), our theoretical framework follows the conventional settings of the vertical differentiate model with considering the patterns of North-South trade. Following Flach and Janeba (2017), we assume people consume both the necessary and differentiate goods. Each consumer can only consume one unit of differentiate good with quality level z , while consuming the necessary good in amount of c . The quality level of the necessary good is normalized as one. A non-homothetic preference for a typical consumer with income y in country j , i.e.

$$U_y(c, z) = c(1 + z) \tag{3}$$

s.t. budget constraint

$$c + p(z) \leq y \tag{4}$$

where the price for necessary good is normalized as one and $p(z)$ is the price for the differentiate good with quality level z . For simplicity, we assume the price is a linear function of z .

$$p(z) = \gamma z \tag{5}$$

where $\gamma > 0$.

Different the settings in Flach and Janeba (2017), we assume that all consumers with any income level will consume the differentiate goods. In addition, the consumers can buy the differentiate goods from either the Chinese or local suppliers. We assume different countries can produce the products within different quality range. For firms from China and other developing countries, their products' quality is drawn from the range $[0, z_I]$. The developed countries pursue technology advantage over the developing countries, thus their producers specialized in the high quality products, i.e. their products' quality is drawn from the range $(z_I, +\infty)$. This production specialization pattern is also

stressed by Fajgelbaum et al. (2011). Based on this setting, a developing destination will consume the products with quality ranging from zero to z_I , and a developed country will consume the products with quality ranging from zero to infinite. Now, we focus on the case of the developed destination. Assume the income distribution in country j is $y \sim G_j(y)$, with pdf $g_j(y)$ and supporting the definition range $[y_{min}, +\infty)$. Denote the consumer who is indifferent between choosing the Chinese and local differentiate product as I with income y_I . Then this consumer will purchase the necessary good by

$$c_I^* = \gamma(1 + z_I) \quad (6)$$

His income level is solved as

$$y_I = \gamma(2z_I + 1) \quad (7)$$

The consumers whose income is higher than y_I will purchase the local products, while the consumers whose income is lower than this value will purchase Chinese products. Accordingly, we can compute the average price of Chinese products in this country is

$$\bar{p}_{cj} = \int_{y_{min}}^{y_I} \left(\frac{y - \gamma}{2\gamma} \right) \frac{g_j(y)}{G_j(y_I)} dy \quad (8)$$

and the average price of local products is

$$\bar{p}_j = \int_{y_I}^{+\infty} \left(\frac{y - \gamma}{2\gamma} \right) \frac{g_j(y)}{1 - G_j(y_I)} dy \quad (9)$$

Define the average income of this country as \bar{y}_j , then it is easy to prove that

$$\bar{y}_j = 2\gamma [G_j(y_I) \bar{p}_{cj} + (1 - G_j(y_I)) \bar{p}_j + 1] \quad (10)$$

The market share of Chinese products are

$$M_{cj} = G_j(y_I) \quad (11)$$

The market share of local products are

$$M_j = 1 - G_j(y_I) \quad (12)$$

Define the Gini coefficient of market j as λ_j . If more dispersed income leads to higher share of poor people, then Chinese products will take more market share, i.e. $\frac{\partial M_{cj}}{\partial \lambda_j} > 0$. Assume the income follows uniform distribution, i.e. $g_j(y) = \frac{1}{2(\bar{y}_j - y_{min})}$ and $G_j(y_I) = M_{cj} = \frac{y_I - y_{min}}{2(\bar{y}_j - y_{min})}$, with supporting definition range $[y_{min}, y_{max}]$, and $y_{min} < y_I < y_{max}$. When income inequality increases, y_{min} decreases. Obviously, for the holding of the relation $\frac{\partial M_{cj}}{\partial \lambda_j} < 0$, it requires the holding of conditions $y_{min} < y_I < y_{max}$ and $(y_I - y_{min})(\bar{y}_j - y_{min}) - 1 < 0$. This condition holds for rich countries, i.e. the average income \bar{y}_j is high enough. Consequently, as $\bar{p}_{cj} = \int_{y_{min}}^{y_I} \left(\frac{y-\gamma}{2\gamma} \right) \frac{g_j(y)}{G_j(y_I)} dy = \frac{1}{4}(y_I + y_{min}) - \frac{1}{2}$, thus $\frac{\partial \bar{p}_{cj}}{\partial \lambda_j} < 0$. In contrast, we assume that in a developing country, the Chinese products will cover all consumers, i.e. $y_I \geq y_{max}$. Under this condition, it is obviously that both the average price and market share do not change in the income inequality level.

5 Conclusion

In this paper, we investigate how the income inequality level of the destination countries affects firms' export price as well as the intensive and extensive margins of export. We use the Chinese exporters data to make the empirical analysis. Basically, we obtain two main findings: (i) The export price decreases in the income inequality level of the destination countries; and (ii) both the exporting firm number and export value will be higher in a more unequal country. Using a simple theoretical framework, we explain the potential influencing mechanism. We suppose that different countries specialize in different products. Developed countries specialize in producing the high quality products while the developing countries specialize in the low quality products. In this case, Chinese exporters will focus in serving the poor people in the developed countries. When the income inequality level rises in the developed countries, Chinese firms find it easier to enter the market and then obtain more market share compared with the local firms in the developed market. In this case, we will observe the export price decreases while the export value increases in the income inequality of a developed destination.

Our study adds to the existing literature by providing new evidence from the world largest exporting country, China. And we also analyze more trade features that were missing from the previous literature, i.e. the exporting firm number and export value. Given all the empirical findings in hand, we build up a theoretical framework that nesting all the empirical findings from both the previous and our studies.

References

- Bastos, P. and J. Silva (2010). The quality of a firms exports: Where you export to matters. *Journal of International Economics* 82(2), 99–111.
- Bekkers, E., J. Francois, and M. Manchin (2012). Import prices, income, and inequality. *European Economic Review* 56(4), 848–869.
- Benassi, C., A. Chirco, and C. Colombo (2006). Vertical differentiation and the distribution of income. *Bulletin of Economic Research* 58(4), 345–367.
- Choi, Y. C., D. Hummels, and C. Xiang (2009). Explaining import quality: The role of the income distribution. *Journal of International Economics* 77(2), 265–275.
- Ciani, A. (2017). Income inequality and the quality of imports.
- Comite, F. D., J.-F. Thisse, and H. Vandenbussche (2014). Verti-zontal differentiation in export markets. *Journal of International Economics* 93(1), 50–66.
- Fajgelbaum, P., G. M. Grossman, and E. Helpman (2011). Income distribution, product quality, and international trade. *Journal of Political Economy* 119(4), 721–765.
- Flach, L. and E. Janeba (2017). Income inequality and export prices across countries. *Canadian Journal of Economics/Revue canadienne déconomique* 50(1), 162–200.
- Flam, H. and E. Helpman (1987). Vertical product differentiation and north-south trade. *The American Economic Review* 77(5), 810–822.
- Frankel, D. M. and E. D. Gould (2001). The retail price of inequality. *Journal of Urban Economics* 49(2), 219–239.
- Gabszewicz, J. J. and J.-F. Thisse (1979). Price competition, quality and income disparities. *Journal of Economic Theory* 20(3), 340–359.
- Garcia-Marin, A. (2014). Income distribution, quality sorting and trade.
- Hallak, J. C. (2006). Product quality and the direction of trade. *Journal of International Economics* 68(1), 238–265.
- Jaimovich, E. and V. Merella (2012). Quality ladders in a ricardian model of trade with nonhomothetic preferences. *Journal of the European Economic Association* 10(4), 908–937.

- Jappelli, T. and L. Pistaferri (2010). Does consumption inequality track income inequality in Italy? *Review of Economic Dynamics* 13(1), 133–153.
- Krueger, D. and F. Perri (2006). Does income inequality lead to consumption inequality? Evidence and theory. *Review of Economic Studies* 73(1), 163–193.
- Latzler, H. and F. Mayneris (2012). Income distribution and vertical comparative advantage. Theory and evidence.
- Limão, N. and A. Panagariya (2007). Inequality and endogenous trade policy outcomes. *Journal of International Economics* 72(2), 292–309.
- Ma, Y. and F. Dei (2009). Product quality, wage inequality, and trade liberalization. *Review of International Economics* 17(2), 244–260.
- Markusen, J. R. (2013). Putting per-capita income back into trade theory. *Journal of International Economics* 90(2), 255–265.
- Mitra, D. and V. Trindade (2005). Inequality and trade. *Canadian Journal of Economics* 38(4), 1253–1271.
- Simonovska, I. (2015). Income differences and prices of tradables: Insights from an online retailer. *The Review of Economic Studies* 82(4), 1612–1656.
- Somekh, B. (2012). The effect of income inequality on price dispersion.
- Thursby, J. G. and M. C. Thursby (1987). Bilateral trade flows, the Linder hypothesis, and exchange risk. *The Review of Economics and Statistics* 69(3), 488–495.
- Yurko, A. V. (2011). How does income inequality affect market outcomes in vertically differentiated markets? *International Journal of Industrial Organization* 29(4), 493–503.

Appendix

Table 6: Export Price and Income Inequality of Destinations
16

Dependent Variable: Log of Export Price, Firm-product-country Level								
	Panel A: OECD Countries				Panel B: Non-OECD Countries			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
$Gini_{jt}$	-0.397*** (0.0617)	-0.181* (0.0966)	-0.303*** (0.0906)	-0.282*** (0.09077)	-0.137*** (0.0502)	-0.0774 (0.0477)	-0.134*** (0.05004)	-0.108** (0.0479)
$\ln(firm_num_{hjt})$		-0.0191*** (0.00396)				-0.0166*** (0.00321)		
Mkt_share_{fjt}			0.144 (0.654)				0.758* (0.399)	
Mkt_share_{fjht}				0.0386*** (0.00848)				0.0546*** (0.00659)
Observations	1,173,195	1,173,195	1,173,195	1,173,195	498,940	498,940	498,940	498,940
R-squared Adjusted	0.9152	0.9152	0.9152	0.9152	0.9460	0.9460	0.9460	0.9460
Other National Controls	NO	YES	YES	YES	NO	YES	YES	YES
Firm-product-year FEs	YES	YES	YES	YES	YES	YES	YES	YES

Standard errors in parentheses
 *** p<0.01, ** p<0.05, * p<0.1

Notes: Standard errors are clustered in country level.

Table 7: Export Price and Income Inequality of Destinations

Dependent Variable: Log of Export Price, Product-country Level						
	Panel A: OECD Countries			Panel B: Non-OECD Countries		
	(1)	(2)	(3)	(4)	(5)	(6)
$Gini_{jt}$	-1.021*** (0.1275)	-0.672*** (0.2319)	-1.18*** (0.208)	-0.447*** (0.1597)	-0.0876 (0.1670)	-0.384* (0.195)
$\ln(firm_num_{jht})$		-0.0920*** (0.00994)			-0.104*** (0.00969)	
Mkt_share_{jht}			2.5003*** (0.855)			3.325*** (0.591)
Observations	206,710	206,710	206,710	203,484	201,610	201,610
R-squared Adjusted	0.8551	0.8565	0.8555	0.8799	0.8808	0.8800
Other National Controls	NO	YES	YES	NO	YES	YES
Product-year FEs	YES	YES	YES	YES	YES	YES

Standard errors in parentheses
 *** p<0.01, ** p<0.05, * p<0.1

Notes: Standard errors are clustered in country level.

Dependent Variable: Log of Firm Number								
	Product-country Level				Country Level			
	Panel A: OECD Countries		Panel B: Non-OECD Countries		Panel C: OECD Countries		Panel D: Non-OECD Countries	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
$Gini_{jt}$	2.018*	5.568***	0.3708	2.945***	3.926**	5.618**	9.0401***	3.818**
	(1.130)	(1.923)	(0.6320)	(0.7524)	(1.634)	(2.154)	(2.338)	(1.475)
Observations	206,710	206,710	203,484	201,610	134	134	293	265
R-squared Adjusted	0.4857	0.5188	0.2811	0.3743	0.9408	0.9466	0.6252	0.8269
Other National Controls	NO	YES	NO	YES	NO	YES	NO	YES
Product-year FEs	YES	YES	YES	YES	YES	YES	YES	YES

Standard errors in parentheses
 *** p<0.01, ** p<0.05, * p<0.1

Notes: Standard errors are clustered in country level.

Table 9: Export Value and Income Inequality of Destinations, Firm-country-product Level

Dependent Variable: Log of Export Value at Firm-Product-country Level						
	OECD countries			Non-OECD Countries		
	(1)	(2)	(3)	(4)	(5)	(6)
$Gini_{jt}$	2.0037 (1.2805)	6.0839*** (2.1765)	7.1166*** (2.4129)	-0.0923 (0.6018)	1.8396* (0.9682)	2.4147** (1.0870)
$\ln(firm_num_{hjt})$	0.619*** (0.02545)			0.5253*** (0.0283)		
Mkt_share_{fjt}		51.5783*** (18.0378)			11.5905*** (3.4829)	
Mkt_share_{fjht}			2.0706*** (0.2302)			1.1909*** (0.1314)
Observations	1,173,195	1,173,195	1,173,195	498,940	498,940	498,940
R-squared Adjusted	0.4167	0.3793	0.4030	0.4514	0.4144	0.4314
Other National Controls	YES	YES	YES	YES	YES	YES
Firm-product-year FEs	YES	YES	YES	YES	YES	YES

Standard errors in parentheses
 *** p<0.01, ** p<0.05, * p<0.1

Notes: Standard errors are clustered in country level.

Dependent Variable: Log of Export Value at Product-country Level				
	OECD countries		Non-OECD Countries	
	(1)	(2)	(3)	(4)
<i>Gini_{jt}</i>	7.4578** (3.0961)	11.8518*** (4.3333)	5.2374** (2.0881)	6.9481*** (2.4456)
<i>ln(firm_num_{jht})</i>	0.7922*** (0.1012)		0.5929*** (0.0798)	
<i>Mkt_share_{jht}</i>		-13.6895*** (3.1672)		-12.7824*** (2.5259)
Observations	206,710	206,710	201,610	201,610
R-squared Adjusted	0.5354	0.2818	0.5392	0.4489
Other National Controls	YES	YES	YES	YES
Product-year FEs	YES	YES	YES	YES

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Notes: Standard errors are clustered in country level.

Table 10: Export Value and Income Inequality of Destinations, Product-country Level