DISCUSSION PAPER
November 2009

No.37

Market Share and Exchange Rate Pass-through: Competition among Exporters of the Same Nationality

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Abstract

Using a sample from January 1988 to December 2005 for exports of five Japanese major ports to six destination countries, we examine the effect of market share (with respect to competitors from the same country) on exchange rate pass-through (henceforth, ERPT). Our dataset is unique, allowing us to control for market shares among competing exporters with the same nationality. We provide empirical evidence that the effect of market shares on exchange rate pass-through is consistent with the findings of Feenstra et al. (1996), who show a non-linear relationship between market share and exchange rate pass-through. However, our evidence also indicates that the relationship between market share and exchange rate sensitively relies on market characteristics. With regard to recent studies on declining ERPT, our evidence shows that the ERPTs of Japanese exports are relatively stable over the last two decades and any observed changes are of small magnitude. Especially for the U.S., our evidence indicates that Japanese exports do not account for the recent decline in ERPT of U.S. imports.

Keywords: Exchange rate pass-through; Local ports; Market share.

JEL Classification codes: F12; F14.

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I thank Rino Sonoda for able research assistance. I am grateful to Kentaro Iwatsubo, Kiyotaka Sato and participants at conferences for Japanese Economics Association and Far Eastern Meeting of Econometrics Society for providing helpful comments. This work is financially supported by Grant-in-Aid for Scientific Research (C) (20530227), JSPS.

1. Introduction

Recent studies pay particular attention to the phenomenon that ERPT has declined in recent years in industrialized countries. For example, Otani et al. (2003) investigated ERPT for Japanese import prices while Bouakez and Rebei (2008) looked at ERPT for Canadian import prices. Campa and Goldberg (2005) estimate ERPT for import prices in OECD countries. Vigfusson et al. (2009) tackle the issue from the perspective of exporting countries. In addition, a number of recent papers found evidence indicating a decline in ERPT to import prices in the U.S[1]. These studies all indicate that ERPT declined in recent years.

The possible channels for decline in ERPT at aggregate level can be the followings. First, for some reason there may be pervasive decline in ERPT at disaggregate commodities. Second, there may be changes in industry composition in imports from high ERPT industry to low ERPT industry, Otani et al. (2003). Third, there may be changes in country composition in imports from high ERPT country to low ERPT country, Bergin and Feenstra (2009).

For the fourth determinants of decreasing pass-through, market share can also be another possibility. Bernhofen and Xu (2000) provide evidence that an increase in market share of the exporting country lowers ERPT for petrochemical product imports in the U.S. Bergin and Feenstra (2009) also provide evidence that the rise of the Chinese import share in the US market is an important contribution to the declining ERPT of US import prices. On the other hand, however, there is also evidence that a larger market share may increase ERPT for differentiated products with less substitutability or market frictions,(see Feenstra et al., 1996, Alessandria ,2004, and Atkeson and Burnstein ,2008).

In this paper we have two major objectives. First, from the perspective of exporting country, we investigate whether ERPT of Japanese export has declined in recent years, similar in line with Vigfusson et al. (2009). We investigate this issue by estimating ERPT at disaggregate commodity level rather than at aggregate level. Second, we investigate whether market share has affected the degree of ERPT in recent years. We introduce market share of regions within an exporting country in addition to market share of exporting country in the world export used in previous studies. This analysis allows a new channel for the possible change in ERPT; changes in region composition in national export.

In addition we aim to contribute to the existing studies in the following aspects. First, our dataset is unique, allowing us to investigate exports of local ports within a country. There is little empirical study for ERPT at the local port level. The advantage of using port level data is that it provides an empirical basis for possible heterogeneity among exporters in the same country. Second, we investigate how far we can push the effect of market share on ERPT. Existing studies focus on the market share of one country with respect to the

[1] See the studies surveyed in Bergin and Feenstra (2009).

destination market or against the share of another exporting country. In this study we implement the market share of exporters from a region in Japan. By comparing exporters from a single exporting country as in this study, we can focus on the pure effect of market share on ERPT because we control for many possible idiosyncratic shocks if we are to compare exporters from different countries. Third, we investigate whether the relationship between market share and ERPT may be non-linear. Theoretical and empirical models suggest that both positive and negative relationships are possible between market share and ERPT. We investigate the 80 commodities for these relationships.

This paper also complements earlier empirical work using Japanese exports at the most disaggregated product level. Takagi and Yoshida (2001) and Parsons and Sato (2008) estimate the exchange rate pass-through of selected HS 9-digit commodities for Japanese (national) exports. Yoshida (2010) decomposes national exports into regional exports and estimates the exchange rate pass-through of HS 9-digit products for Japanese local ports. Yoshida (2010) obtained evidence that export prices are set at different levels across local ports and that they correspond differently with respect to fluctuations of exchange rates.[2] An advantage of using exports at local ports is that we can capture possible heterogeneous behavior of exporters across regions within a country.[3]

The dataset in this study is also different from Yoshida's (2010) in the following important aspects. During the process of selecting commodities, we directly chose the largest 80 commodities at the HS 9-digit level, while Yoshida (2010) chose all HS 9-digit commodities belonging in the largest 50 HS 4-digit group. The latter selection process suffers from the problem of including commodities with small trading values, while the data coverage in terms of the number of commodities is larger than the one in this study. The selected commodities in this study suffer the least from missing data during the sample period. In this study, all five major port exports selected 80 commodities that were sent to each of six destination countries, although some trade data may occasionally be missing for periods of several months.

We find that market shares of Japanese local ports as an interaction term with exchange rate are statistically significant for most of the case, irrespective of linear or non-linear specification forms. In addition, we also find evidence in favor for market share of local ports within Japan over markets share of Japan in an importing country. However, our evidence also indicates that the ERPT of Japanese exports are relatively stable over the last two decades and any observed changes are of small magnitude. Especially for the U.S., our evidence indicates that Japanese exports do not account for the recent decline in the

[2] Using regional consumer prices in Japan and Korea, Baba (2007) also finds evidence of price dispersions across regions within a country.

[3] Aw et al. (2001) provide evidence that the heterogeneity of exporting firms accounts more than the heterogeneity of destinations or commodities for exchange rate pass-through differentials.

ERPT of U.S. imports.

In the remainder of this paper, we briefly review the effect of market share on ERPT in both theoretical models and empirical studies in the next section. We present an estimation model in section 3, describe the data structure in section 4, and provide evidence of market share effects on exporters' pricing behaviors in section 5. The final section summarizes our findings.

2. Market share on exchange-rate pass-through: Theoretical models and empirical evidence

Seminal work by Dornbusch (1987) clearly demonstrates in a Cournot competition model that a larger market share by foreign firms reduces ERPT. Bernhofen and Xu (2000) and Bergin and Feenstra (2009) also develop theoretical models in which the size of the market share affects the degree of ERPT, closely following the approach by Dornbusch (1987). Bernhofen and Xu (2000) apply a homogeneous oligopoly model to 29 petrochemical product exports by Germany and Japan to the US market. Their model suggests that a larger market share by an exporter decreases ERPT. Bergin and Feenstra (2009) set up a model in which exporters with a fixed exchange rate compete with other exporters in the US market. Their empirical evidence supports the hypothesis that a rise in the share of Chinese imports contributed to the recent decline in exchange rate pass-through in US imports. These works all assume a negative relationship between market share and exchange rate pass-through.

On the other hand, an opposite impact of market share for exchange rate pass-through is derived in various theoretical models; for examples, see Feenstra et al. (1996), Alessandria (2004), and Atkeson and Burstein (2008), among others.[4] Feenstra et al. (1996) examine a Bertrand differentiated product model in which several exporters (including domestic suppliers) compete in a market. With some restrictions on the demand curve, the ERPT becomes 0.5 when market share for an exporter becomes very small, approaching zero. On the other hand, the ERPT becomes one when the entire market share is taken over by exporters from one country. The intuitive argument is that exporters can only adjust their prices partly with respect to cost changes induced by exchange rate change because exporters from other countries do not experience the same cost changes. However, all firms experience the same cost shocks and adjust prices fully when exporters from the same country dominate a market.

Alessandria (2004) assumes two types of firms, domestic firms and foreign firms, supplying to the domestic market and imposing a search cost on consumers to explore a price set by another firm. Firms from the same country set the same price, since these firms

[4] Froot and Klemperer (1989) and Kasa (1992) incorporate inter-temporal friction, switching the costs for consumers and the adjustment costs for firms, respectively, in dynamic models.

experience the same country-specific cost shocks. After incurring a search cost, a consumer can learn the price set by only one type of firm, with the probability equal to the market share of the firm's type. By this assumption, possible alternative price sets by different types of firms can only be revealed to the consumer with a probability equal to the market share. Therefore, the effective cost for consumers of finding different types of firms increases with respect to the market share of the current partner. A numerical example in Alessandria (2004) provides 80% pass-through for firms with a very small share and 100% pass-through for firms with a very large share.

Atkeson and Burstein (2008) assume that there are only a relatively small number of firms in each individual sector. In each sector, goods are assumed to be imperfect substitutes. With an additional assumption of heterogeneous shock to individual firms, they demonstrate the heterogeneous response of individual firms to cost changes. Their model implies that ERPT increases with respect to an increase in market share.

Regarding the relationship between market share and exchange rate pass-through, we need to understand that predictions are quite sensitive to market characteristics. For the homogeneous product market, exchange rate pass-through declines as the market share of foreign exporters increases. However, this relationship can be reversed if products among exporters are imperfect substitutes with other market frictions such as the cost of switching brands.

Given the sensitivity of theoretical predictions about the relationship between market share and exchange rate pass-through, we need to note some caveats regarding the empirical specification of market share in an estimation model. Some works, for example, Bernhofen and Xu (2000) and Mallick and Marques (2008a), introduce market share simply as control variables, while other studies use an interaction term between exchange rate and market share. Reflecting the non-linear relationship obtained from theoretical models, Feenstra et al. (1996) and Martín and Rodríguez (2004) also introduce squared market share in empirical models. In a similar sense, Mallick and Marques (2008b) estimate a regression equation for the estimated ERPT coefficients on market share.

3. Empirical model

In this section, we present a simple model for the export price equation to estimate the exchange rate pass-through in a panel data model. We extend the empirical framework of the two-way fixed effect panel model used in Knetter (1989), Takagi and Yoshida (2001), and Yoshida (2010).

Consider an exporting firm manufacturing product k and located in region j within a country.[5] After profit maximization, the exporter sets price (P_{ijkt}) in a foreign country i on

[5] In this section we abuse the notation k to represent both regions and individual exporters.

the basis of the demand conditions (D_{ijkt}), marginal cost (MC_{ijkt}) and the exchange rate (S_{it}) at time *t*. By restricting products to a narrowly defined industry, we assume that across-product variation in marginal cost is negligible and marginal cost can be represented by time-variant regional specific marginal cost (MC_{jt}). The demand conditions are assumed to be divided into three components: region-destination specific demand condition (D_{ij}), product-destination specific demand condition (D_{ik}), and time-variant destination specific demand condition (D_{it}). An export pricing equation with these specifications is:

$$P_{ijkt} = f(D_{ij}, D_{ik}, D_{it}, MC_{jt}, S_{it}) \quad (1)$$

By holding importing country *i* and a narrowly defined industry *k* fixed, the export price equation in log linear form is

$$\ln P_{jt} = \alpha_j + \lambda_t + \beta \ln MC_{jt} + \gamma_j \ln S_t + \varepsilon_{jt} \quad (2)$$

where the regional dummies α_j and time effect λ_t are assumed to reflect the demand conditions.[6] The export price P_{jt} for a HS 9-digit product from a regional port *j* is set in Japanese yen at time *t*. The exchange rate S_t is the value of the importing country's currency in Japanese yen. So, γ_j represents exchange rate pass-through elasticity and is equal to zero for *complete* pass-through; ε_{jt} is a disturbance term.

If each exporter in different regions produces a variety of product in a manner assumed in a monopolistic competition model with constant elasticity of substitution for demand, price differences across regions become zero in equilibrium; i.e., the estimated coefficients of regional dummies α_j should be equal. We can further expect that the export price of each firm with respect to exchange rate fluctuations responds in the same manner; i.e., regional specific exchange rate coefficients γ_j should be equal. On the other hand, regional dummies and exchange rate coefficients are expected to be different if each firm in different regions produces different quality products, as in the vertically differentiated product model in Flam and Helpman (1987).

Preliminary test for heterogeneity of ERPT among local ports

[6] We should note that subscript *i* is deleted because the importing country is fixed in each regression.

We frequently encounter cases in which the number of observations is extremely small for some triplets of (i, j, k) when disaggregated at the HS 9-digit level. In order to overcome this problem in Yoshida (2010), all HS 9-digit products are pooled for each selected HS 4-digit industry regression equation. Then, ERPT coefficients are estimated at the HS 4-digit level while fixed effects are controlled for at the HS 9-digit level. In this paper, on the other hand, we selected HS 9-digit products with nearly full observations. In order to minimize the number of exchange rate pass-through coefficients needing to be estimated, we fix an importing country and an HS 9-digit product for each regression equation, leaving only the differences between local exporting ports as possible causes for possible heterogeneity of pass-through coefficients.

For the given pair of an importing country and an HS 9-digit product, we have the following export price equation (3):

$$\ln P_{jt} = \alpha_j + \alpha_m + \lambda_t + \beta \ln MC_{jt} + \gamma_j \ln S_t + \varepsilon_{jt}. \quad (3)$$

where α_j is the dummy for a region, and (monthly) seasonal dummies α_m are added to control for seasonality.

As a test of the heterogeneity of the exchange rate pass-through among local exporting ports, we investigate the null hypothesis of H_0: $\gamma_j = \gamma_{j'}$ for all $j, j' \in J$ in equation (3). We estimate the restricted coefficient regression in which all γ_j are equal and conduct an F-test using the residual sum of the squares from the unrestricted equation (3) and the restricted equation.

[Insert Table 1]

Table 1 summarizes the tests of homogeneous ERPT among local ports. Even after controlling for possible product heterogeneity with a category by using the most disaggregated product level, export prices of local ports respond differently to exchange rate fluctuations for most products. Homogeneity of ERPT among local port exports to Korea and Taiwan is rejected for more than 90 percent of products, at the one percent significance level. It is interesting to note that rejection of homogeneous ERPT is slightly less for China and Hong Kong. This pervasiveness of heterogeneity of ERPT among local ports is consistent and complementary to the findings in Yoshida (2010).

The exchange rate pass-through is affected by price-setting behaviors of exporting firms in response to exchange rate fluctuations. For example, an exporting firm can react differently from other firms to a change in exchange rate if faced with different demand

elasticity. A rejection of the null hypothesis can then be interpreted as supporting evidence of vertically differentiated products, in which an exporter can exercise some market power.

Estimation models with market share

We introduce market share of local port export in Japanese total export while previous studies use market share of exporting country in an importing country. Noting national exports is composed of regional exports, we can define export of country *m* to an importing country *n* as the following.

$$EX_n^m = \sum_{j=1}^{M} EX_n^j$$

The share of port export in national export (for an importing country *n*) is then defined as equation (4a) while the share of exporting country in an importing country is then defined as equation (4b). Note that *M* is the number of ports in country m and *W* is the number of exporting countries.

$$Share_j = \frac{EX_n^j}{EX_n^m} = \frac{EX_n^j}{\sum_{j=1}^{M} EX_n^j} \tag{4a}$$

$$Share_m = \frac{EX_n^m}{\sum_{m \in W} EX_n^m} \tag{4b}$$

After confirming heterogeneity of ERPT among local ports, we further investigate the possible causes of this heterogeneity. In this paper, we focus on the effect of the market share of each local port on their responsiveness of export prices to the exchange rate. We estimate the following equation (5) with an interaction term between the market share defined as (4a) and the exchange rate:

$$\ln P_{jt} = \alpha_j + \alpha_m + \lambda_t + \beta \ln MC_{jt} + \gamma^0 \ln S_t + \gamma^1 Share_{jt} \times \ln S_t + \varepsilon_{jt} \tag{5}$$

where $Share_{jt}$ is defined as export value of region *i* divided by total export value of all regions in Japan at time t for fixed importing country and commodity. We should note that the ERPT, $\gamma^0 + \gamma^1 Share_{jt}$, is both port-specific and time-varying.

Reflecting on a possible non-linear relationship between market share and ERPT (Feenstra et al., 1996, Alessandria, 2004, and Atkeson and Burstein, 2008), we also include a squared value of market share as an interaction term with the exchange rate as in equation (6). We should note that ERPT elasticity is calculated by the terms $\gamma^0 + \gamma^1 Share_{jt} + \gamma^2 Share_{jt}^2$.

$$\begin{aligned} \ln P_{jt} = \alpha_j + \alpha_m + \lambda_t + \beta \ln MC_{jt} + \gamma^0 \ln S_t + \gamma^1 Share_{jt} \times \ln S_t \\ + \gamma^2 Share_{jt}^2 \times \ln S_t + \varepsilon_{jt} \end{aligned} \tag{6}$$

Following Martín and Rodríguez (2004), we also test for the possible effect of market share on pass-through of marginal cost changes to export prices in equation (7):

$$\ln P_{jt} = \alpha_j + \alpha_m + \lambda_t + \beta^0 \ln MC_{jt} + \beta^1 Share_{jt} \times \ln MC_{jt} + \beta^2 Share_{jt}^2 \times \ln MC_{jt} + \gamma \ln S_t + \varepsilon_{jt} \quad (7)$$

4. Data

This paper investigates the exchange rate pass-through of Japanese exports at the level of the local ports, using trade datasets at the level of custom jurisdiction provided by the Ministry of Finance of Japan.[7] Due to the extremely large number of data, datasets from each customs jurisdiction office were dispersed to over eight hundred files. We reconstructed the datasets from the original dispersed files.

4-1. Export unit price, exchange rate, and marginal cost

We use the monthly unit prices at the HS 9-digit level from January 1988 to December 2005 for goods exported from five major Japanese ports, Tokyo, Yokohama, Nagoya, Osaka, and Kobe, to six major importers of Japanese exports, China, Korea, Taiwan, Hong Kong, USA, and Germany. Eighty HS 9-digit product groups, presented in the Appendix, are selected in this study. Details of the selection process are explained in the following section, 4-2.

The unit prices are calculated as the value of the export divided by the number of units. When the number of units is not defined, the metric weight is used instead. Note that the export price is expressed in Japanese yen. The monthly average exchange rate is expressed as the value of the foreign currency in Japanese yen and is obtained from *International Financial Statistics*, IMF. Therefore, our definition of exchange rate pass-through elasticity takes on a value of zero if the pass-through is *complete* and a value of one if there is no pass-through at all.

It is noteworthy that the use of unit value export price as a proxy for actual export price is not without its problems. Lipsey et al. (1991) point out inaccuracies of the unit values as measures of the prices of individual manufactured goods, especially when there is a significant quality change in the product. Some authors are sensitive to this unit value bias, and Athukorala and Menon (1994), for example, use genuine price indices for Japanese export prices. Export prices used in Athukorala and Menon (1994) are not available either at our disaggregation at the HS 9-digit product level or at the local port level used in our

[7] A total of 209 customs offices, all under the Ministry of Finance, are situated near ports and airports engaged in international trade. The export declaration information required by the Customs Organization includes the Japanese *ports* of export, the country of destination, the value of the shipments expressed in Japanese yen, the date of export, and the 9-digit classification code of the exported goods, among other information.

study.

A proxy for marginal cost variable MC_{jt} in equation (3) needs to be time-variant at the monthly frequency and region-specific at the same time. We decided to use regional retail gasoline prices as a proxy because it reflects the movement of energy input as well as domestic transportation costs. Regional retail gas prices of regular quality are provided by the Oil Information Center. At a lower frequency, a more relevant variable for region-specific marginal cost is available. We also use the annual male regional wage in the manufacturing industry as an additional proxy for MC_{jt}. Wage data are obtained from the *Basic Survey on Wage Structure*, Ministry of Health, Labor and Welfare.

4-2. Data selection criteria

Disaggregated product trade data have one disadvantage: many of the datasets contain no data points in the categories of lightly traded products. In order to avoid selecting products with very few data points, we chose our samples of exporting regions, importing countries, and HS 9-digit product groups to be as large as possible using the following selection criteria. When selecting the exporting regions, we chose the five local ports with the highest trade activity. The combined exports from Tokyo, Yokohama, Nagoya, Osaka, and Kobe ports account for about 40 to 60 percent of Japanese exports throughout the sample period. Although the fraction of goods exported from these ports declines gradually during the period of study, the combined exports from these ports still represent a large portion of total Japanese exports.

As for the importing countries, we chose the six countries that engaged in the largest trades with Japan between 1988 and 2005. These countries are the US, China, Taiwan, Korea, Hong Kong, and Germany. We intentionally set our selection criteria so that at least one European country would be included in our sample. The Japanese goods exported to these six countries makes up about 60 percent of the total Japanese exports.

The Appendix lists the 80 most exported (in terms of values) HS 9-digit products that satisfy the following two minimum observation criteria.[8] The first criterion requires the total number of observations for a product to be equal to or greater than 75 percent of the entire observation. The second criterion requires the number of observations for each port to be at least 30 percent of the entire sample observation.[9]

[8] The 80 most traded HS 9-digit code products account for 19 percent of total trade for the selected ports and importing countries.

[9] These criteria are 4,862 observations for the entire 6,480 (5 ports, 6 importers and 216 months) observations for each commodity and 65 months for the entire 216 months for each pair of port and importer.

5. Estimation results

5-1. Exchange rate pass-through equation

We estimate equation (5) separately for each commodity and each destination country. The estimated results are presented in Tables 2-a through 2-f. For the coefficients of ER, we conduct one-sided tests of whether coefficients are greater than zero (or less than unity) with statistical significance at the 1% and 5% levels. Our results indicate that most of the estimated ERPT coefficients fall in the expected range between zero and unity.[10]

[Insert Table 2]

For the interaction term between market share and exchange rate, the estimated coefficients are statistically significant at the one percent level for 55 percent of all product-destination samples.[11] However, signs of estimated coefficients show a mix of both positive and negative signs. This is consistent with our review of the literature in section 2, in which we show that the sing of the market share effect on exchange rate pass-through rests on market characteristics. Table 2 summarizes proportions of commodities showing declining (or increasing) ERPT with respect to an increase in market share. By restricting market share effect to be linear, the number of commodities with declining ERPT overwhelms those of increasing ERPT.

[Insert Table 2-a through 2-f]

[Insert Table 3]

Combined with evidence of statistically significant coefficients of interaction terms, these mixed signs are consistent with non-linear predictions of theoretical models in Feenstra et al. (1996) and Alessandria (2004). Positive estimates of commodities may have captured the increasing part of the non-linear relationship between market share and exchange rate pass-through, while estimates for other commodities trace a declining part. We proceed to include an interaction term with the exchange rate and squared term for market share as in equation (6). The estimated result for Korea is presented in Table 3-a.[12] Table 3 summarizes proportions of commodities showing a declining (or increasing) ERPT effect. With a specification of a non-linear effect, we need to introduce the definition of declining (increasing) for the sake of comparison with previous results. We measure ERPT at zero market share and at full market share and subtract the latter from the former. In our

[10] The worst case is China and the U.S., for which 66 (83%) of 80 commodities fall within the range between zero and unity, while all commodities except for one case fall within the expected range for Korea.

[11] At a significance level of 10 percent, 69 percent of 480 ERPT coefficients are statistically significant.

[12] The estimation results for other countries are available upon request.

calculation of ERPT, we only use the estimated coefficients significant at the one percent level. With this definition, the proportions of both directions are about the same in Table 3. We should note that there is no inconsistency between Tables 2 and 3 since, for example, the downward shape of ERPT with respect to market share may be captured in the linear specification, while the extrapolation of ERPT at a market share of one could be larger than the extrapolation of ERPT at zero market share in the non-linear specification.

[Insert Table 3-a]

Theoretical prediction is ambiguous on the convexity of exchange rate pass-through with market share, while Feenstra et al. (1996) found a convex shape of exchange rate pass-through with regard to the size of the market share for the automobile sector. In terms of the convexity of ERPT, 26.3 percent of estimates are statistically significant at the one percent level and convex, while 16.0 percent of estimates are statistically significant and concave.

5-2. Convergence of market shares among competing local regions

For the intermediate share of market shares, Feenstra et al. (1996) and Alessandria (2004) show that the relationship between market share and ERPT may demonstrate non-linearity. These theories have important implications for the industry average ERPT for changes in market shares among competing local exporters. If a single or a few exporters (or regions) expand their share and come to take over almost the entire market, the market shares of incumbent exporters move to either extreme. If the market under study possesses a U-shaped (convex) relationship between market share and individual ERPT, the average ERPT for the market should increase by the well-known property of convex functions. On the other hand, if exporters obtain similar shares in the long-term from possible unequal shares at the initial period, the average ERPT for the market should decline. We shall examine whether market shares among exporters became closer in the last decades in the following subsection.

[Insert Figure 1 through 3]

Given theoretical support for the possible impact of market share on ERPT, it is an empirical question to assess how market shares of exporters have evolved in the last decades. Figures 1 through 3 are shown as examples of market share changes among local export ports for electrical switches. Market shares for exports to China are shown to converge, while dispersions of market share for exports to Korea and the USA remain relatively unchanged. In order to examine whether market shares among exporters diverge or converge during the sample period, we compared the size of standard deviations of market shares in the first year and the last year.[13] Annual averages are taken over monthly standard deviations of market

[13] We chose the year 2004 instead of 2005 because three commodities do not have observations in 2005 due to the change made in HS classifications.

shares of local ports for each year. Table 4 shows the differences in standard deviations between the beginning and the end of sample periods. The result is striking in that the convergence (or divergence) of market shares differs substantially among destination markets. For China, the differences in the two years are negative values for all 80 commodities, indicating convergence of market shares among exporters, while nearly half of the commodities show divergence of market shares for exports to Germany. For the rest of the destination countries, the results show more support for convergence of market shares among exporters: 81% for Korea, 66% for Taiwan, 74% for Hong Kong, and 65% for the U.S.

[Insert Table 4]

We should note one caveat in interpreting the result of this subsection. In the process of selecting commodities, we impose the criterion that trade values be non-zero for a large portion of the sample. This selection methodology possibly cuts off those commodities for which observed behaviors show the disappearance of trade for some ports at the last portion of the sample as well as commodities without trade for some ports at the early periods of the sample. However, we believe that this selection problem is less severe for the largest traded commodities we use in our sample.

5-3. Construction of time-varying average ERPT

[Insert Figure 4]

Thus far, we have obtained evidence that the effect of market share on ERPT can be non-linear and can go in both directions. Even with estimates for decreasing ERPT with respect to an increase in market share, however, we can still say nothing about whether ERPT declined due to recent changes in the market shares of local ports. Figure 4 gives an example for a *decreasing* function of ERPT with market share by our definition. If the share of port is declining in recent years along the declining part of non-linear shape of ERPT with market share, we should observe an *increase* in ERPT. To account for the recent changes in ERPT, we need to combine both the estimated coefficients and dynamics of the market shares. We therefore calculate a weighted average of ERPT for a commodity by the following equation:

$$\overline{ERPT}_t \equiv \frac{1}{\omega_t}\sum_{j=1}^{5} Share_{jt}\{ERPT_{jt}\} = \frac{1}{\omega_t}\sum_{j=1}^{5} Share_{jt}\{\gamma^0 + \gamma^1 Share_{jt} + \gamma^2 Share_{jt}^2\} \qquad (8)$$

where $\omega_t = \sum_{j=1}^{5} Share_{jt}$, the sum of port shares. We should note that the shares of the five major ports, ω_t, do not sum up to unity in most cases. In the calculation of the average ERPT, only statistically significant coefficients are used for γ^1 and γ^2. We interpreted this as evidence that ERPT elasticity is time-invariant (at γ^0) throughout the sample period if neither γ^1 nor γ^2 is statistically significant at the ten percent level. With this definition, ERPTs are time-invariant for 26% of all commodity-importer pairs. In other words, 74% of

all commodity-importer pairs show time-varying ERPT properties.

[Insert Figure 5 and 6 here]

Figure 5 and 6 present time-varying average ERPT coefficients for machinery parts (HS846693.000) and bearing parts (HS848299.000) exported to Korea, respectively. These products are chosen to show the typical cases for decreasing (increasing) ERPT. By simply comparing ERPT at the initial time and ERPT at the end, commodities can be classified as either increasing or decreasing. With threshold values of 5, 10, 15, and 20 percentage points, the numbers of commodities are presented for each category by importing countries in Table 7.[14] The number of commodities showing time-varying ERPT properties dramatically falls even with a small threshold value. Thirty percent (19%) of all commodity-importer pairs show more than 5 (10) percentage point changes in ERPT during the sample period. By looking at importing countries individually, the following two points stand out. First, the portion of time-varying ERPT is very small for the U.S. Commodities showing the time-varying ERPT property are only 13% (5%) for 5 (10) percentage point thresholds. In terms of U.S. imports, the ERPT of Japanese exports has been relatively stable over the last 18 years. Second, there are more cases of ERPT increases than ERPT declines for China, while more cases of ERPT decline are observed for other countries.

5-4. Market share and marginal costs

We also estimated equation (7) with a non-linear specification of market share with respect to marginal costs, monthly regional gas price and annual regional male wage for the manufacturing industry. Tables 5-a and 6-a provide estimates for Korea about the relationship of gas price and male wage, respectively, with respect to market share.[15] For gas price (male wage) as a proxy for marginal cost, 15.8% (29.4%) of estimates are shown to be declining with respect to an increase in market share, while 11.9% (23.3%) are increasing. In terms of convexity with respect to gas price (male wage), 5.8% (11.7%) of estimates are statistically significant at the one percent level and convex, while 15.0% (30.6%) of estimates are statistically significant and concave.

[Insert Table 5-a & 6-a]

5-5. Robustness check

Monthly trade data at HS 6-digit for Taiwanese import is obtained from the *Directorate General of Customs*, Ministry of Finance, ROC. Then, we constructed the share of Japanese products in Taiwanese imports at HS 6-digit level. For each HS 9-digit product, we define $JPNShare_t$ as the ratio of imports of Taiwan from Japan to imports of Taiwan from

[14] Here we focus on economic significance rather than statistical significance.
[15] The estimation results for other countries are available upon request.

the world[16]. We added to equation (5) an interaction term with this $JPNShare_t$ variable and exchange rate variable.

$$\ln P_{jt} = \alpha_j + \alpha_m + \lambda_t + \beta \ln MC_{jt} + \gamma^0 \ln S_t + \gamma^1 Share_{jt} \times \ln S_t + \gamma^2 JPNShare_t \times \ln S_t + \varepsilon_{jt} \quad (5')$$

From estimating equation (4'), there are only seven industries in which a coefficient of $JPNShare_t$ is statistically significant at the ten percent significance level, while the coefficient of $Share_{jt}$ is significant for 55 industries. Noting that this is only limited exercise for only Taiwan import, however, this result supports our approach in this paper which focuses on port share of Japanese export as a possible explanation to time varying nature of exchange rate pass-through.

6. Conclusions

Using the sample from January 1988 to December 2005 for exports of five Japanese major ports to six destination countries, we examine the effect of market share (with respect to competitors from the same country) on exchange rate pass-through. Our dataset is unique in that we can control for market shares among competing exporters with the same nationality. We also provide some empirical evidence that the effect of market shares is consistent with Feenstra et al. (1996) and other studies that show non-linearity relationship between the market share and exchange rate pass-through. However, our evidence also indicates that the relationship between market share and exchange rate or marginal costs sensitively relies on market characteristics. With regard to recent studies on declining ERPT, our evidence shows that the ERPTs of Japanese exports have been relatively stable over the last two decades and any observed changes are of small magnitude. Especially for the U.S., our evidence indicates that Japanese exports do not account for the recent decline in ERPT of US imports.

[16] When the last three digits of HS 9-digit codes in Japan are triple zeros, a product at Japanese HS 9-digit can be treated just as HS 6-digit product. Even when the last three digits are not triple zeros, the first six digits of HS 9-digit code is matched with Taiwanese HS 6-digit code. For this latter case, a caution is needed to interpret the results because it is only approximation.

References:

Alessandria, George. (2004). International deviations from the law of one price: The role of search frictions and market share. *International Economic Review*, 45(4), 1263-1291.

Atkeson, Andrew & Burstein, Ariel. (2008). Pricing-to-market, trade costs, and international relative prices. *American Economic Review*, 98(5), 1998-2031.

Athukorala, P., & Menon, J. (1994). Pricing to market behaviour and exchange rate pass-through in Japanese exports. *The Economic Journal*, 104, 271-281.

Aw, Bee Yan., Batra, Geeta., & Roberts, Mark J. (2001). Firm heterogeneity and export-domestic price differentials: A study of Taiwanese electronics products. *Journal of International Economics* 54, 149-169.

Baba, Chikako. (2007) Price dispersion across and within countries: The case of Japan and Korea. *Journal of the Japanese and International Economies*, 21, 237-259.

Bergin, Paul R. & Feenstra, Robert C. (2009). Pass-through of exchange rates and competition between floaters and fixers. *Journal of Money, Credit and Banking*, 41(1), 35-70.

Bernhofen, Daniel M. & Xu, Peng. (2000). Exchange rates and market power: Evidence from the petrochemical industry. *Journal of International Economics*, 52, 283-297.

Bouakez, Hafedh. & Rebei, Nooman. (2008). Has exchange rate pass-through really declined? Evidence from Canada, *Journal of International Economics*, 75, 249-267.

Campa, Jose, & Goldberg, Linda. (2005). Exchange rate pass-through into import prices, *Review of Economics and Statistics*, 87, 679-90.

Dornbusch, Rudiger. (1987). Exchange rate and prices. American Economic Review, 77(1), 93-106.

Gottfries, Nils. (2002). Market shares, financial constraints and pricing behaviour in the export market. *Economica*, 69, 583-607.

Feenstra, Robert C., Gagnon, Joseph E., & Knetter, Michael M. (1996). Market share and exchange rate pass-through in world automobile trade. *Journal of International Economics*, 40, 187-207.

Flam, H. and E. Helpman, "Vertical Product Differentiation and North-South Trade," *American Economic Review* 77, 5 (1987): 810-822.

Froot, K., and Klemperer, P. (1989). Exchange rate pass-through when market share matters. *American Economic Review* 79, 637-654.

Kasa, K. (1992). Adjustment costs and pricing-to market: Theory and evidence. *Journal of International Economics*, 32, 1-30.

Knetter, M.M. (1989). Price discrimination by U.S. and German exporters. *American Economic Review* 79(1), 198-210.

Lipsey, R.E., Molinari, L., & Kravis, I.B. (1991). Measures of prices and price competitiveness in international trade in manufactured goods. In *International economic*

transactions: Issues in measurement and empirical research, ed. by Hooper P., & Richardson J.D.

Mallick, Sushanta. & Marques, Hellena. (2008a). Exchange rate transmission into industry-level export prices: A tale of two policy regimes in India. *IMF Staff Papers*, 55(1), 83-108.

Mallick, Sushanta. & Marques, Hellena. (2008b). Passthrough of exchange rate and tariff into import prices of India: Currency depreciation versus import liberalization. *Review of International Economics*, 16(4), 765-782.

Martín, Lourdes Moreno. & Rodríguez, Diego Rodríguez. (2004). Pricing to market at firm level. *Review of World Economics*, 140(2), 302-320.

Otani, Akira, Shiratsuka, Shigenori, & Shirota, Toyoichiro. (2003). The decline in the exchange rate pass-through: Evidence from Japanese import prices, *Monetary and Economic Studies*, 21, 53-81.

Parsons, C.R., & Sato, K. (2008) New estimates of exchange rate pass-through in Japanese exports. *International Journal of Finance and Economics*, 13, 174-183.

Takagi, S., & Yoshida, Y. (2001). Exchange rate movements and tradable goods prices in East Asia: An analysis based on Japanese customs data, 1988-1999. *IMF Staff Papers* 48(2), 266-289.

Vigfusson, Robert J., Sheets, Nathan, and Gagnon, Joseph. (2009). Exchange rate passthrough to export prices: Assessing cross-country evidence. *Review of International Economics*, 17(1), 17-33.

Yoshida, Yushi. (2010). New evidence for exchange rate pass-through: Disaggregated trade data from local ports. *International Review of Economics and Finance*, 19, 3-12.

Appendix: Selected 80 HS 9-digit products

HS 9-digt	product description	Total N	Min N	Share
370790.000	Chemical preps f photographic uses, put up in measurd portions, nes	6150	133	0.61
392062.000	Film and sheet etc, non-cellular etc, of polyethylene terephthalates	6052	124	0.16
392099.000	Film and sheet etc, non-cellular etc, of plastics nes	5367	65	0.09
392690.000	Articles of plastics or of other materials of Nos 39.01 to 39.14 nes	6464	207	0.21
401693.000	Gaskets, washers and other seals of vulcanised rubber	6380	184	0.11
401699.000	Articles of vulcanised rubber nes, other than hard rubber	6446	198	0.14
482390.900	Paper and paper articles, nes	6084	134	0.04
491110.000	Trade advertising material, commercial catalogue and the like	5671	99	0.02
591190.000	Textile products and articles for technical uses, nes	5447	76	0.03
731511.900	Chain, roller, iron or steel	5753	85	0.07
731815.190	Bolts o screws nes, with o without their nuts o washers, iron o steel	6068	105	0.17
731815.900	Bolts o screws nes, with o without their nuts o washers, iron o steel	6048	147	0.06
731816.900	Nuts, iron or steel, nes	5818	129	0.09
731822.000	Washers, iron or steel, nes	5176	95	0.03
732020.000	Springs, helical, iron or steel	6180	145	0.05
732690.000	Articles, iron or steel, nes	5953	139	0.14
820559.000	Tools for masons, watchmakers, miners and hand tools nes	5649	99	0.02
820890.000	Knives & blades for leather, paper, tobacco machines & other industri	5801	109	0.02
840991.100	Parts for spark-ignition type engines nes	6095	96	1.11
841330.000	Fuel, lubricating or cooling medium pumps for int comb piston engines	6064	65	0.22
841360.100	Rotary positive displacement pumps nes	5962	122	0.08
841391.000	Parts of pumps for liquid whether or not fitted with a measurg device	6204	148	0.12
841459.000	Fans nes	6290	174	0.14
841590.000	Parts of air conditioning machines	5406	84	0.18
842123.000	oil or petrol-filters for internal combustion engines	5541	81	0.04
842129.000	Filtering or purifying machinery and apparatus for liquids nes	5156	80	0.05
842199.000	Parts for filterg or purifyg mchy & apparatus for liquids or gases, n	6225	130	0.10
846693.000	Parts & accessories nes for use on machines of headg No 84.56 to 84.6	5769	97	0.10
846711.000	Tools for working in the hand, pneumatic rotary type	5292	88	0.07
847330.000	Parts & accessories of automatic data processg machines & units there	6208	136	2.72
847989.900	Machines & mechanical appliances nes having individual functions	6391	138	1.98
847990.000	Parts of machines & mechanical appliances nes havg individual functio	6312	180	0.23
848110.000	Valves, pressure reducing	5475	80	0.03
848120.000	Valves for oleohydraulic or pneumatic transmissions	6096	105	0.14
848130.900	Valves, check	5408	84	0.03
848180.190	Taps, cocks, valves and similar appliances, nes	6269	178	0.24
848190.000	Parts of taps, cocks, valves or similar appliances	5671	82	0.08
848210.000	Bearings, ball	6068	171	0.39
848250.000	Bearings, cylindrical roller, nes	5490	88	0.05
848299.000	Bearing parts, nes	5169	78	0.15
848310.000	Transmission shafts and cranks, including cam shafts and crank shafts	6438	198	0.25
848330.200	Bearg housings, not incorporatg ball/roller bearings; plain shaft bea	6400	187	0.11
848340.200	Gears & gearing, ball screws, gear boxes, speed changers/torque conve	6428	195	0.17
848350.000	Flywheels and pulleys, including pulley blocks	6060	122	0.08
848360.000	Clutches and shaft couplings (including universal joints)	5986	127	0.04
848410.000	Gaskets of metal sheeting combined with other material	5769	96	0.07
848590.000	Machinery parts, non-electrical, nes	6065	124	0.08
850110.191	Electric motors of an output not exceeding 37.5 W	5979	134	0.12
850151.000	AC motors, multi-phase, of an output not exceeding 750 W	5761	82	0.04
850300.000	Parts of electric motors, generators, generatg sets & rotary converte	5937	111	0.22
850431.910	Transformers electric power handling capacity not exceeding 1 KVA, ne	5484	135	0.06
850440.110	Static converters, nes	6142	158	0.11
850440.900	Static converters, nes	6095	148	0.16
850450.000	Inductors, electric	5947	144	0.06
850730.000	Nickel-cadmium electric accumulators	5680	93	0.24
852290.900	Parts and accessories of apparatus of heading Nos 85.19 to 85.21, nes	5916	91	0.53
852990.900	Parts suitable f use solely/princ w the app of headings 85.25 to 85.2	6301	145	0.59
853222.000	Electrical capacitors, fixed, aluminium electrolytic, nes	6215	159	0.34
853223.000	Electrical capacitors, fixed, ceramic dielectric, single layer, nes	5357	78	0.04
853321.000	Electrical resistors fixd for a power handlg capacity not exceedg 20	5924	120	0.11
853340.000	Variable resistors, including rheostats and potentiometers, nes	6086	163	0.09
853400.000	Printed circuits	6103	136	0.22
853641.000	Electrical relays for a voltage not exceeding 60 volts	5997	141	0.16
853649.000	Electrical relays for a voltage exced 60 V but not exceedg 1, 000 vol	5511	66	0.03
853650.900	Electrical switches for a voltage not exceeding 1, 000 volts, nes	6479	215	0.34
853669.000	Electrical plugs and sockets, for a voltage not exceeding 1, 000 volt	5348	85	0.04
853710.000	Boards, panels, includg numerical control panels, for a voltage </=10	6448	202	0.64
853890.900	Parts for use with the apparatus of headg no. 85.35, 85.36 or 85.37,	6238	96	0.27
854110.920	Diodes, other than photosensitive or light emitting diodes	5329	81	0.05
854121.910	Transistors, oth than photosensit, w a dissipation rate < 1 W	5600	108	0.06
854129.910	Transistors, other than photosensitive transistors, nes	5383	109	0.04
854140.990	Photosensitive semiconduct device, photovoltaic cells & light emit di	5700	134	0.16
854390.000	Parts of electrical machines & apparatus havg individual functions, n	5040	68	0.05
854451.910	Electr conductors, for a voltage >80V but </=1, 000 V fittd w connect	6115	152	0.04
870899.900	Motor vehicle parts nes	6214	118	1.63
900912.000	Electrostatic photo-copying apparatus, indirect process type	4862	67	1.27
901380.000	optical devices, appliances and instruments, nes, of this Chapter	5272	81	0.17
903180.190	Measuring or checking instruments, appliances and machines, nes	6175	105	0.27
903190.100	Parts & accessories for measuring or checking inst, appl & machines,	5223	74	0.04
961210.000	Typewriter or similar ribbons, prepared for giving impressions	5600	93	0.11

Note: Production descriptions are at the level of HS 6-digit from OECD. Total N indicates the number of observations and Min N indicates the smallest number of observations for region-importer pairs. Share represents share of export values between 1988 and 2005 in total exports, by restricting for five ports and six importing countries.

Figure 1. Market shares of local ports for electrical switches (HS853650900) to Korea

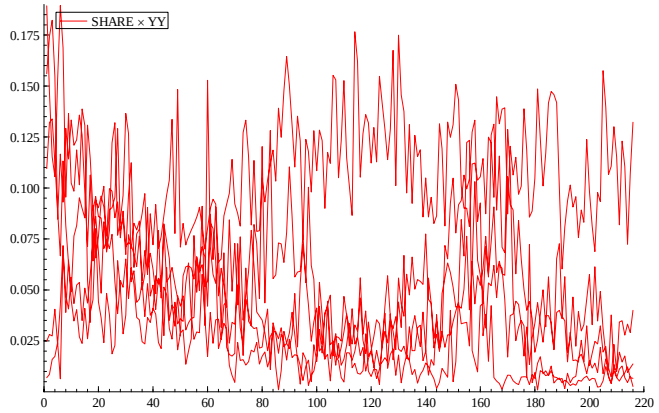

Figure 2. Market shares of local ports for electrical switches (HS853650900) to China

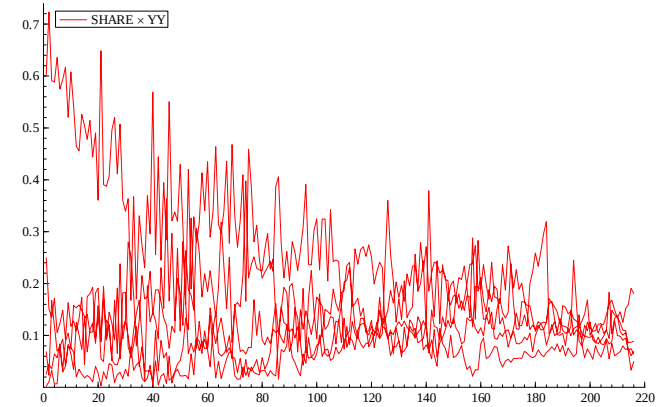

Figure 3. Market shares of local ports for electrical switches (HS853650900) to USA

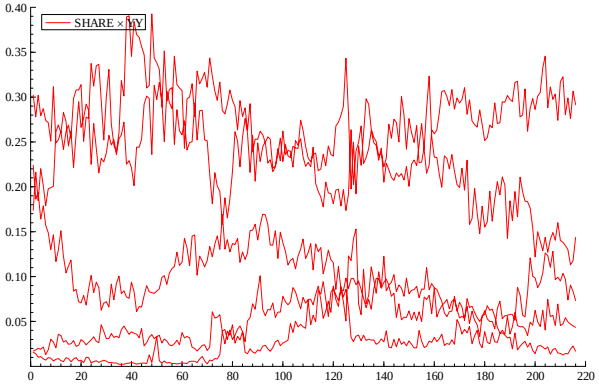

Figure 4. Implication for declining ERPT

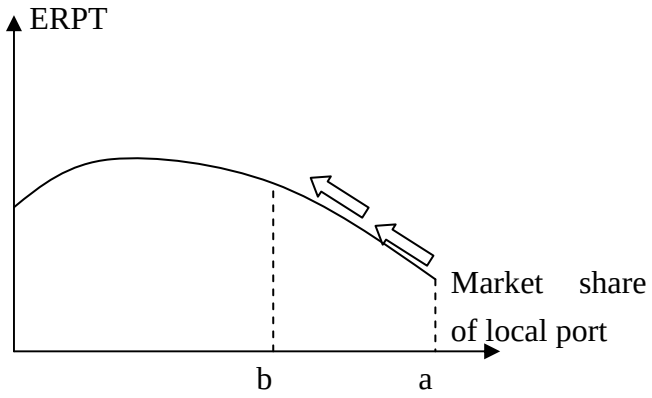

Figure 5. Average ERPT for machinery parts (HS8486693.000) to Korea

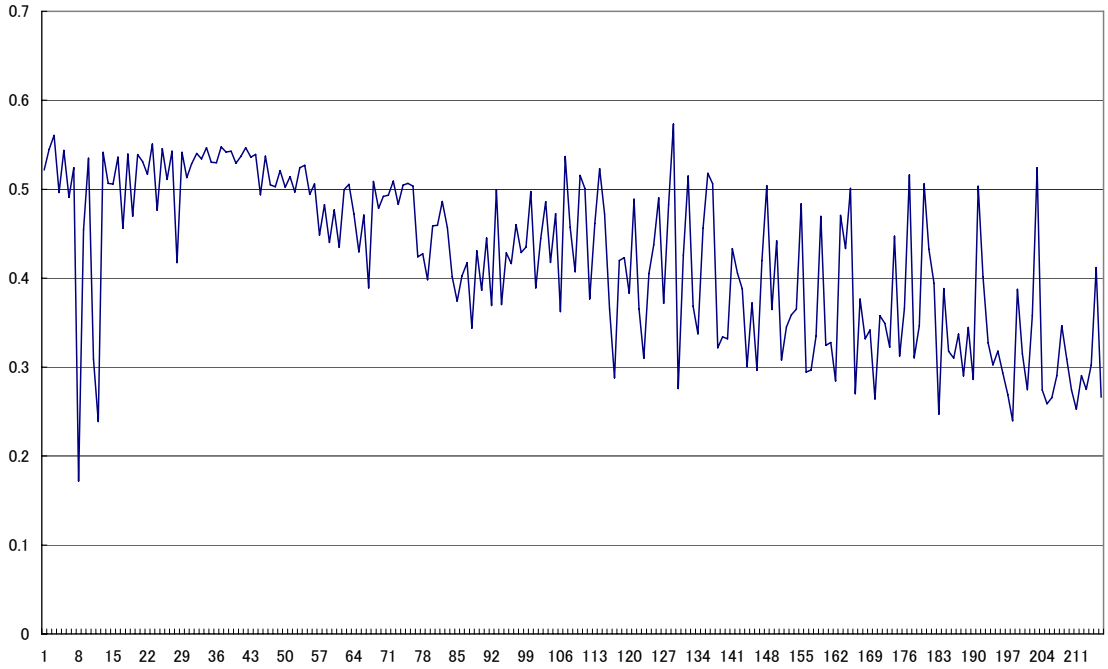

Figure 6. Average ERPT for bearing parts (HS848299.000) to Korea

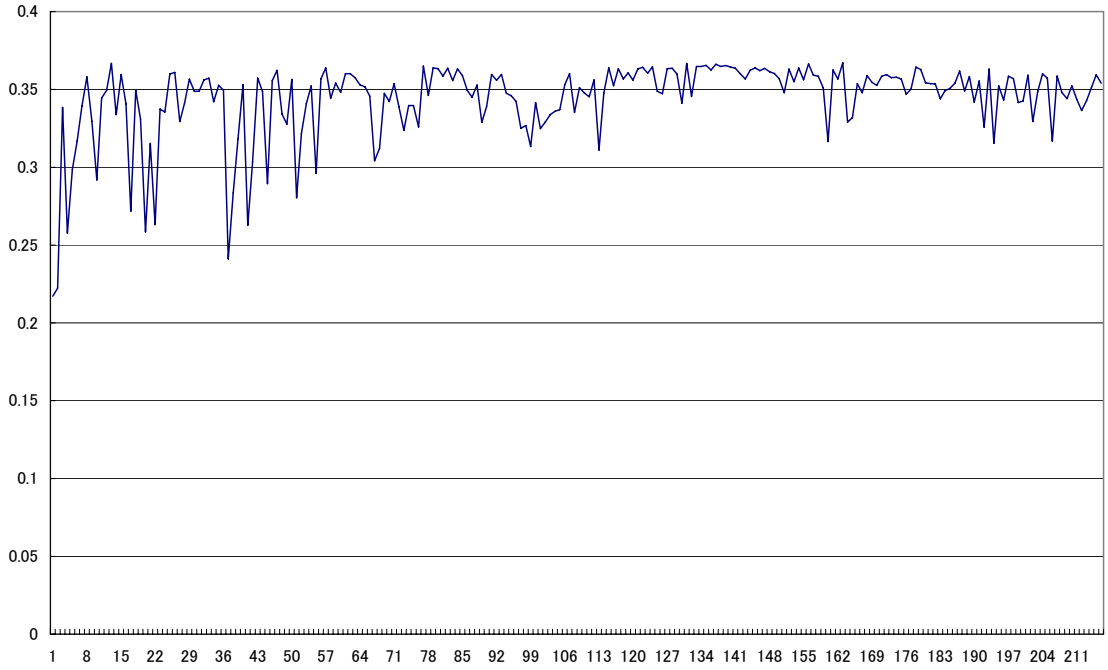

Table 1. Test of homogeneity of ERPT across Japanese ports

Importing countries	significance level		
	10%	5%	1%
Korea	96.3	96.3	91.3
China	87.5	85.0	77.5
Taiwan	97.5	93.8	92.5
Hong Kong	85.0	76.3	71.3
Germany	95.0	91.3	82.5
USA	93.8	90.0	87.5

Note: Figures are the share of commodities with rejection of the null of homogeneous ERPT across ports

Table 2. Market share and ERPT (linear specification)

Importing countries	negative	positive
Korea	23.8	32.5
China	38.8	12.5
Taiwan	32.5	22.5
Hong Kong	26.3	25.0
Germany	32.5	17.5
USA	36.3	27.5
Total	31.7	22.9

Note: Figures are percentage of commodities with indicated change of ERPT with respect to an increase in market share. Only the coefficients statistically significant at one percent level are used for calculation.

Table 2-a. Market share and exchange rate pass-through (Korea)

	HS9	ER(only)	ER	Share*ER	Gas	Wage	Adj R^2	NOB	LM	DW		HS9	ER(only)	ER	Share*ER	Gas	Wage	Adj R^2	NOB	LM	DW
[01]	370790.000	0.149	0.161	-0.048	-1.545 ***	4.787 **	0.64	992	63.5 ***	0.64	[41]	848310.000	0.784	0.671	0.789 ***	-0.235	-0.186	0.38	1078	3.32 *	1.10
[02]	392062.000	-0.355	-0.420	0.494 ***	-0.050	-12.043 ***	0.26	1030	0.47	1.29	[42]	848330.200	-0.176	-0.136	-0.263 **	1.117 ***	0.569	0.33	1078	5.09 **	1.39
[03]	392099.000	-0.001	-0.030	-0.613 ***	-1.461 **	-12.259 ***	0.38	982	97.7 ***	1.14	[43]	848340.200	0.456	0.417	0.876 ***	0.228	3.262 *	0.29	1080	3.15 *	1.27
[04]	392690.000	0.033	0.027	0.080	-1.373 ***	5.157 ***	0.13	1080	6.06 **	1.34	[44]	848350.000	0.527	0.381	0.428 ***	-0.336	7.028 ***	0.38	974	39.8 ***	1.40
[05]	401693.000	0.047	0.017	0.327 *	1.001 **	5.412 ***	0.42	1073	0.02	1.52	[45]	848360.000	0.983	0.859	0.900 ***	0.594	5.131 ***	0.35	1037	2.54	1.47
[06]	401699.000	0.022	-0.033	0.881 ***	0.179	-1.970	0.38	1080	0.12	1.31	[46]	848410.000	-0.019	-0.259	0.712 ***	1.708 **	-4.308	0.16	834	3.02 *	1.49
[07]	482390.900	-0.517	-0.547	0.252 *	0.414	5.792 ***	0.13	1022	0.47	1.49	[47]	848590.000	0.142	0.165	-0.693 ***	-0.695	7.580 ***	0.19	1033	0.09	1.42
[08]	491110.000	-0.326	-0.327	-0.090	0.344	-2.718	0.08	742	0.88	1.98	[48]	850110.191	-0.249	-0.183	-0.386 ***	1.682 ***	3.760 **	0.13	980	12 ***	1.23
[09]	591190.000	0.602	0.553	0.508 ***	-0.600	4.031	0.42	859	60 ***	1.21	[49]	850151.000	-0.002	-0.011	0.098	-0.905 *	-3.163	0.29	1053	2.62	1.70
[10]	731511.900	-0.013	-0.020	0.042	1.328 **	0.132	0.27	983	190 ***	1.35	[50]	850300.000	-0.534	-0.541	0.100	0.070	2.102	0.18	992	81.7 ***	1.66
[11]	731815.190	0.593	0.490	0.534 ***	0.860	3.918	0.17	910	0.73	1.53	[51]	850431.910	-0.301	-0.408	0.646 ***	-4.987 ***	-4.115	0.40	907	80.4 ***	1.14
[12]	731815.900	0.096	0.199	-0.592 ***	-2.913 ***	-0.819	0.26	958	10.1 ***	1.35	[52]	850440.110	-0.419	-0.430	0.188	1.017	-0.993	0.24	988	1.31	1.66
[13]	731816.900	-0.089	-0.189	0.711 ***	-0.041	7.568 **	0.17	894	20.8 ***	1.53	[53]	850440.900	0.512	0.460	0.230 ***	-1.042	-2.817	0.12	1005	11.7 ***	1.53
[14]	731822.000	0.141	0.098	0.256 **	2.270 *	-9.365 **	0.21	754	10.6 ***	1.06	[54]	850450.000	0.391	0.491	-0.704 ***	-2.594 ***	-4.734 *	0.40	1042	0.25	1.22
[15]	732020.000	-0.659	-0.697	0.661 ***	1.836 **	2.959	0.15	1024	32.5 ***	1.01	[55]	850730.000	0.331	0.309	0.173	1.523 **	-2.011	0.41	866	2.27	1.58
[16]	732690.000	-0.439	-0.414	-0.331 ***	-0.806	-0.158	0.95	991	4.07 **	1.68	[56]	852290.900	-0.391	-0.455	1.005 ***	-2.554 ***	4.588	0.47	878	118 ***	1.18
[17]	820559.000	-0.299	-0.382	0.465 ***	0.298	11.041 ***	0.36	891	16.5 ***	1.83	[57]	852990.900	-0.522	-0.528	-0.303	-2.277 ***	-27.937 ***	0.40	1004	46.1 ***	0.96
[18]	820890.000	-0.124	-0.146	0.468 *	0.711	20.399 ***	0.21	949	40.1 ***	1.72	[58]	853222.000	0.122	0.034	0.730 ***	0.004	-9.376 ***	0.47	1007	34 ***	1.12
[19]	840991.100	-0.281	-0.346	0.759 ***	-0.875	-5.550 **	0.32	936	6.34 **	1.14	[59]	853223.000	-0.003	-0.058	0.524 ***	1.606	-29.255 ***	0.44	791	32.1 ***	1.00
[20]	841330.000	0.284	0.291	-0.046	0.837	6.283 ***	0.24	897	0.26	1.35	[60]	853321.000	-0.654	-0.692	3.814 ***	0.644	18.882 ***	0.25	972	13.7 ***	0.84
[21]	841360.100	0.016	0.010	0.150 **	0.313	-2.718 **	0.49	1076	29.9 ***	1.40	[61]	853340.000	0.260	0.224	1.521 ***	-1.442 **	-3.823	0.30	1027	13.6 ***	1.19
[22]	841391.000	0.166	0.158	0.105 *	0.388	-3.601 **	0.44	1018	57.3 ***	1.35	[62]	853400.000	-0.486	-0.343	-0.791 ***	-1.776 **	-4.218	0.34	995	0.16	1.15
[23]	841459.000	-0.280	-0.263	-0.068	-0.397	5.194 ***	0.07	1049	0.3	1.64	[63]	853641.000	0.234	0.216	0.978 **	-0.463	-1.186	0.18	964	16.4 ***	1.19
[24]	841590.000	0.203	0.207	0.054	-1.637 *	2.463	0.25	674	5.16 **	1.34	[64]	853649.000	-0.012	0.210	-1.044 ***	0.228	3.652	0.21	880	0.11	1.34
[25]	842123.000	0.543	0.592	-0.100 *	0.188	2.214	0.17	759	21.4 ***	1.86	[65]	853650.900	0.901	0.931	-1.916 ***	-0.349	0.642	0.18	1079	48.5 ***	1.05
[26]	842129.000	0.327	0.289	0.113	-0.344	-4.401 **	0.04	959	13.7 ***	1.77	[66]	853669.000	0.584	0.753	-0.932 ***	-0.656	-9.618 **	0.31	811	5.6 **	1.53
[27]	842199.000	-0.278	-0.287	0.068	-0.791	0.092	0.04	1027	15.7 ***	1.64	[67]	853710.000	0.204	0.214	-0.258 ***	-1.184 ***	1.100	0.26	1079	22.9 ***	1.71
[28]	846693.000	0.373	0.409	0.766 ***	2.448 ***	-3.618	0.24	1029	2.5	1.85	[68]	853890.900	0.352	0.359	-0.393 *	1.079 *	15.458 ***	0.13	1068	6.92 ***	1.23
[29]	846711.000	-0.071	-0.028	-0.204 ***	-0.031	-4.594 **	0.56	962	96.4 ***	1.68	[69]	854110.920	-1.531	-1.129	16.074 ***	-1.004	6.573	0.25	933	68.8 ***	1.01
[30]	847330.000	0.519	0.527	-0.155	5.065 ***	-13.546 ***	0.26	1032	111 ***	1.22	[70]	854121.910	-0.319	-0.095	2.291 ***	1.217	-12.787 ***	0.31	965	13 ***	1.32
[31]	847989.900	0.077	0.143	-0.869 ***	-0.229	1.451	0.35	1080	12.9 ***	1.62	[71]	854129.910	0.630	0.748	-4.075 ***	4.396 **	-0.830	0.10	903	30 ***	1.01
[32]	847990.000	0.077	0.076	0.010	0.137	-0.072	0.22	1077	5.34 **	1.70	[72]	854140.990	-1.226 **	-1.271 **	-2.456 ***	3.405 **	19.667 ***	0.25	958	43.5 ***	1.07
[33]	848110.000	-0.211	-0.194	-0.086	0.541	-3.264 ***	0.27	985	17.4 ***	1.72	[73]	854390.000	0.106	-0.362	1.485 ***	-2.398	-20.499 ***	0.20	854	0.17	1.64
[34]	848120.000	0.219	0.221	0.125	-0.266	-3.608 ***	0.37	1064	15.4 ***	1.16	[74]	854451.910	0.153	0.190	-0.392 ***	-1.565 *	9.865 ***	0.24	986	16.6 ***	1.79
[35]	848130.900	-0.528	-0.515	-0.290 ***	0.946	-1.378	0.33	1003	61.7 ***	1.27	[75]	870899.900	-0.148	-0.149	0.014	0.215	3.696 ***	0.13	1016	21.8 ***	1.14
[36]	848180.190	0.029	0.017	0.160 **	-0.919 **	5.964 ***	0.16	1077	4.09 **	1.34	[76]	900912.000	0.409	0.615	-0.576 ***	0.797	8.847 ***	0.58	708	72.5 ***	1.36
[37]	848190.000	-0.280	-0.224	-0.172 **	0.009	0.441	0.21	1024	17.5 ***	1.39	[77]	901380.000	-0.967	-0.862	-0.692 ***	-1.098	12.102 ***	0.38	871	8.88 ***	1.32
[38]	848210.000	0.296	0.240	0.304 ***	1.362 ***	-2.856 **	0.65	1017	227 ***	0.72	[78]	903180.190	0.307	0.263	0.243 *	0.325	6.297 ***	0.08	1073	2.25	2.02
[39]	848250.000	0.326	0.277	0.273 ***	1.110 **	2.284 *	0.60	921	200 ***	1.92	[79]	903190.100	-0.241	-0.242	-0.089	-3.707 ***	5.552	0.12	879	2.29	1.71
[40]	848299.000	0.300	0.291	0.051	0.689	12.577 ***	0.57	877	78.4 ***	1.29	[80]	961210.000	-0.552	-0.609	0.253	-1.072	-14.687 ***	0.37	829	0.03	1.46

Note: ER(only) and ER are estimated in equation (3) and (4), resectively. One-side test of coefficient of ER being greater than zero (or less than unity) with statistical significance at 1% and 5% level are shown respectively by ***and** (or by### and ##). LM is the test for the null of homoskedastic disturbances and DW is the Durbin–Watson statistics for unbalanced panel. For other coefficients, F stat and LM, statistical significance at 1%, 5%, and 10% level are shown respectively by ***, **, and *.

Table 2-b. Market share and exchange rate pass-through (China)

HS9	ER(only)	ER	Share*ER	Gas	Wage	Adj R^2	NOB	LM	DW	HS9	ER(only)	ER	Share*ER	Gas	Wage	Adj R^2	NOB	LM	DW
[01] 370790.000	0.574	0.751	-0.367 ***	-1.852 ***	-5.941 ***	0.17	862	53.6 ***	1.27	[41] 848310.000	-0.243	-0.156	-0.381 ***	1.385 ***	-2.689 **	0.33	1066	24.7 ***	1.08
[02] 392062.000	0.981	1.215 ###	-0.609 ***	1.652 *	-20.974 ***	0.37	992	1.27	1.51	[42] 848330.200	0.853	0.933	-0.355 ***	0.638	-2.657	0.44	1057	0.04	1.21
[03] 392099.000	1.515 ###	1.621 ###	-0.191 ***	-0.373	3.440	0.13	843	5.06 **	1.44	[43] 848340.200	-0.076	0.016	-0.259 ***	1.071 **	-0.937	0.36	1059	44.5 ***	1.39
[04] 392690.000	0.512	0.531	-0.181 **	1.753 ***	2.996 **	0.17	1066	115 ***	1.76	[44] 848350.000	0.974	1.034 ###	-0.184 ***	0.846	0.264	0.32	996	9.33 ***	1.41
[05] 401693.000	0.328	0.325	-0.295 ***	2.308 ***	1.261	0.29	1028	54.8 ***	1.44	[45] 848360.000	0.566	0.571	-0.059	-1.646 ***	-1.200	0.19	941	11.3 ***	1.38
[06] 401699.000	1.208 ###	1.251 ###	-0.332 ***	1.453 ***	-3.183 **	0.27	1054	102 ***	1.67	[46] 848410.000	-0.502	-0.472	-0.062	0.617	3.988	0.15	875	17 ***	1.63
[07] 482390.900	0.082	0.103	-0.079	1.211 *	-3.865 **	0.15	1001	34.5 ***	1.13	[47] 848590.000	-0.237	-0.253	0.253 ***	0.684	-5.403 **	0.32	1023	16.5 ***	1.42
[08] 491110.000	0.388	0.414	-0.121	0.248	4.031	0.10	859	0.04	1.71	[48] 850110.191	0.693	0.698	-0.008	-3.026 ***	-6.649 ***	0.19	874	12.3 ***	1.14
[09] 591190.000	0.102	0.129	-0.095	2.017 ***	1.543	0.32	906	1.08	1.69	[49] 850151.000	-0.309	-0.271	-0.201 ***	1.246	-3.908	0.12	868	8 ***	1.38
[10] 731511.900	1.608 ###	1.700 ###	-0.147 ***	2.661 ***	7.258 ***	0.33	805	10.3 ***	1.64	[50] 850300.000	0.032	-0.005	0.218 ***	0.873	0.802	0.31	1044	8.28 ***	1.06
[11] 731815.190	-0.033	-0.003	-0.141 ***	1.540 ***	-3.881 **	0.15	1004	6.24 **	1.60	[51] 850431.910	0.949	0.944	-0.153 **	-1.304	4.484 *	0.13	900	14.5 ***	1.29
[12] 731815.900	1.031 ###	1.137 ###	-0.296 ***	0.109	0.785	0.10	924	157 ***	1.47	[52] 850440.110	0.267	0.229	0.178 **	0.445	-5.839 **	0.20	965	4.75 **	1.53
[13] 731816.900	0.095	0.110	-0.031	-0.024	-3.171	0.27	866	56.8 ***	1.34	[53] 850440.900	0.078	0.116	-0.126 ***	1.728 ***	-7.189 ***	0.25	961	38.2 ***	1.78
[14] 731822.000	0.249	0.287	-0.119	4.191 ***	0.026	0.37	858	63.4 ***	1.40	[54] 850450.000	-0.126	-0.106	-0.324 ***	-0.151	2.415	0.21	966	58.2 ***	1.10
[15] 732020.000	-0.080	-0.084	0.018	-1.477 ***	-6.232 ***	0.53	1034	3.52 *	0.88	[55] 850730.000	0.088	0.195	-0.331 ***	2.841 ***	5.402 **	0.38	780	33.4 ***	1.46
[16] 732690.000	0.189	0.188	0.042	1.093	7.449 ***	0.96	958	59.5 ***	1.73	[56] 852290.900	0.294	0.490	-0.699 ***	-3.030 ***	22.585 ***	0.46	933	40 ***	0.96
[17] 820559.000	1.102 ###	1.168 ###	-0.076	-0.547	9.432 ***	0.18	832	13.8 ***	2.02	[57] 852990.900	-0.261	-0.357	0.358 ***	0.494	7.226 ***	0.24	994	0	1.03
[18] 820890.000	0.186	0.186	0.001	2.280 **	2.661	0.18	914	6.15 **	1.55	[58] 853222.000	0.414	0.489	-0.242 ***	-0.594	3.346 *	0.57	1004	111 ***	1.28
[19] 840991.100	0.488	0.615	-0.373 ***	-0.795	-3.695	0.27	905	48.7 ***	1.32	[59] 853223.000	0.017	-0.011	0.098 *	2.242 ***	8.535 ***	0.42	1008	0.2	1.05
[20] 841330.000	0.118	0.106	0.023	1.382 ***	3.152 *	0.10	924	1.49	1.50	[60] 853321.000	0.354	0.416	-0.183 ***	0.615	-1.430	0.30	1009	83.2 ***	1.08
[21] 841360.100	0.761	0.765	-0.025	1.067 *	0.887	0.23	939	4.85 **	1.66	[61] 853340.000	-0.703 **	-0.683 **	-0.120 ***	1.265 **	-7.901 ***	0.14	1015	0.04	1.14
[22] 841391.000	0.953	1.013 ###	-0.280 ***	-1.073	-4.812 *	0.58	970	0.87	1.35	[62] 853400.000	0.373	0.329	0.531 ***	0.133	1.070	0.16	1059	36.4 ***	0.64
[23] 841459.000	0.505	0.501	-0.080	0.516	2.511	0.18	998	26.9 ***	1.76	[63] 853641.000	0.657	0.618	0.121 ***	1.727 ***	-3.417 **	0.45	942	9.02 ***	1.15
[24] 841590.000	0.767	0.784	-0.083 **	1.466 **	0.861	0.18	884	0.23	1.56	[64] 853649.000	-0.112	-0.154	0.097	1.063	-6.671 **	0.27	897	4.07 **	1.08
[25] 842123.000	0.338	0.339	0.021	0.728	-4.663 ***	0.15	793	7.13 ***	1.70	[65] 853650.900	0.346	0.191	0.657 ***	-0.283	-0.447	0.46	1080	0.8	1.28
[26] 842129.000	0.037	0.045	-0.022	1.272	-4.032	0.04	855	11.7 ***	1.94	[66] 853669.000	-0.208	-0.208	0.137 **	-0.001	7.758 ***	0.17	911	1.4	1.34
[27] 842199.000	-0.483	-0.447	-0.096	1.756 **	9.146 ***	0.21	985	42.4 ***	1.66	[67] 853710.000	0.113	0.099	0.038	1.182 **	-4.914 ***	0.23	1059	40.1 ***	1.87
[28] 846693.000	1.313 ###	1.310 ###	-0.100	0.980	-5.875 *	0.30	909	9.2 ***	1.72	[68] 853890.900	1.036 ###	1.039 ###	-0.041	0.355	3.537 **	0.39	1023	170 ***	2.03
[29] 846711.000	-0.444	-0.417	-0.034	0.461	-4.767	0.25	688	3.03 *	2.06	[69] 854110.920	1.091 ###	1.188 ###	-0.231 ***	0.408	2.535	0.38	886	38 ***	1.77
[30] 847330.000	-0.338	-0.325	-0.418 ***	-1.020	12.585 ***	0.34	897	130 ***	1.43	[70] 854121.910	0.974	0.951	0.193 ***	0.779	7.377 ***	0.41	989	26.3 ***	1.42
[31] 847989.900	-0.343	-0.388	0.206 ***	0.522	-0.166	0.26	1074	14.1 ***	1.75	[71] 854129.910	0.487	0.669	-0.363 ***	-1.015	5.304	0.30	895	48.2 ***	1.68
[32] 847990.000	1.012 ###	1.029 ###	-0.138 **	1.396 *	-1.253	0.25	1029	8.07 ***	1.87	[72] 854140.990	0.734	0.659	0.207 *	-0.157	-6.332 **	0.28	910	2.39	1.08
[33] 848110.000	0.641	0.633	0.026	0.711	-4.915 ***	0.17	853	29.5 ***	1.72	[73] 854390.000	-1.699 **	-1.520	-0.283 ***	2.662 **	-8.415 *	0.14	737	16.8 ***	1.51
[34] 848120.000	0.051	0.133	-0.235 ***	1.518 **	2.799	0.31	977	87.6 ***	1.72	[74] 854451.910	-0.163	-0.111	-0.161 **	-2.175 ***	-3.108 *	0.06	990	35.2 ***	1.37
[35] 848130.900	-0.299	-0.259	-0.071	1.653 **	3.235	0.09	829	12.6 ***	1.77	[75] 870899.900	0.331	0.366	-0.163 ***	3.349 ***	-2.055	0.27	887	37.1 ***	1.25
[36] 848180.190	-0.252	-0.235	-0.417 ***	1.253 **	-3.980 ***	0.17	1046	61.3 ***	1.65	[76] 900912.000	1.687 ###	1.349 ###	0.362 ***	1.944	10.783 **	0.52	676	32.7 ***	1.56
[37] 848190.000	0.097	0.097	0.005	1.141	1.556	0.49	867	45.9 ***	1.47	[77] 901380.000	0.682	0.708	0.253 ***	0.727	-9.562 ***	0.28	856	0.02	0.89
[38] 848210.000	0.722	0.858	-0.290 ***	-0.207	3.386 **	0.51	980	101 ***	1.47	[78] 903180.190	-0.181	-0.139	-0.182 ***	-1.025 *	4.845 ***	0.13	1030	47.5 ***	1.91
[39] 848250.000	0.785	0.807	-0.156 ***	2.368 ***	-1.548	0.47	814	34.7 ***	1.46	[79] 903190.100	0.002	0.030	-0.110	0.766	3.954	0.14	882	1.2	1.89
[40] 848299.000	-0.957	-0.946	0.098	-1.100	12.064 ***	0.29	713	34.7 ***	1.42	[80] 961210.000	-0.463	-0.507	-0.167 *	1.978	-12.131 ***	0.56	744	4.82 **	1.15

Note: ER(only) and ER are estimated in equation (3) and (4), resectively. One-side test of coefficient of ER being greater than zero (or less than unity) with statistical significance at 1% and 5% level are shown respectively by ***and** (or by### and ##). LM is the test for the null of homoskedastic disturbances and DW is the Durbin–Watson statistics for unbalanced panel. For other coefficients, F stat and LM, statistical significance at 1%, 5%, and 10% level are shown respectively by ***, **, and *.

Table 2-c.Market share and exchange rate pass-through (Taiwan)

	HS9	ER(only)	ER	Share*ER	Gas	Wage	Adj R^2	NOB	LM	DW		HS9	ER(only)	ER	Share*ER	Gas	Wage	Adj R^2	NOB	LM	DW
[01]	370790.000	0.117	0.047	0.742 ***	-0.899	22.428 ***	0.48	1063	13.1 ***	0.91	[41]	848310.000	-0.148	-0.173	0.143	-0.134	0.879	0.25	1062	6.19 **	1.42
[02]	392062.000	1.578 ###	1.793 ###	-0.698 ***	-0.803	-1.355	0.32	1017	0.18	1.22	[42]	848330.200	0.320	0.299	0.128	-0.675	-1.095	0.04	1061	32.9 ***	1.81
[03]	392099.000	1.011 ###	1.040 ###	0.497 ***	0.113	-24.878 ***	0.34	984	4.55 **	1.45	[43]	848340.200	0.414	0.429	-0.120	-0.267	-5.653 ***	0.25	1080	12.9 ***	1.39
[04]	392690.000	-0.476	-0.506	0.199	-0.496	2.909 **	0.14	1080	0.02	1.53	[44]	848350.000	-0.344	-0.391	0.210 **	-0.317	-0.094	0.12	972	70.7 ***	1.56
[05]	401693.000	0.142	0.215	-0.447 **	1.335 ***	0.268	0.24	1077	17.6 ***	1.63	[45]	848360.000	0.224	0.304	-0.958 ***	-0.830	0.243	0.11	1059	1.57	1.90
[06]	401699.000	-0.137	-0.060	-0.543 *	-0.649	4.139 ***	0.21	1080	10.1 ***	1.63	[46]	848410.000	-0.113	-0.049	-0.314 **	0.624	0.796	0.24	1001	0.25	1.59
[07]	482390.900	0.252	0.280	-0.142	-0.011	7.977 ***	0.05	1063	2.68	1.70	[47]	848590.000	0.433	0.456	-0.397 **	0.997	2.365	0.17	1029	12.8 ***	1.44
[08]	491110.000	-0.549	-0.553	0.124	-1.785 *	1.351	0.12	949	10.8 ***	1.80	[48]	850110.191	0.437	0.377	0.673 ***	1.317 **	-4.895 *	0.12	985	7.16 ***	1.52
[09]	591190.000	-0.344	-0.296	-0.251	1.010	6.240 ***	0.14	982	3.48 *	1.69	[49]	850151.000	0.437	0.415	0.300 *	0.329	-3.191	0.18	1057	1.69	1.48
[10]	731511.900	-0.062	0.002	-0.330 ***	0.179	3.206 **	0.17	1067	24.1 ***	1.39	[50]	850300.000	0.369	0.240	0.627 ***	-0.160	-0.449	0.33	1038	0.38	1.12
[11]	731815.190	-0.146	-0.065	-0.941 ***	-1.108 *	-2.008	0.24	1070	20.5 ***	1.37	[51]	850431.910	0.148	0.297	-0.701 ***	-1.132	5.259 **	0.09	946	33.6 ***	1.57
[12]	731815.900	-0.505	-0.359	-1.350 ***	0.733	-9.046 ***	0.13	1020	57.5 ***	1.57	[52]	850440.110	0.304	0.301	0.100	-1.576 **	-1.931	0.22	1025	0.05	1.62
[13]	731816.900	0.129	0.223	-0.975 ***	-0.134	4.331 **	0.26	1051	6.35 **	1.62	[53]	850440.900	0.068	0.080	-0.064	-0.323	-0.830	0.10	1063	1.65	1.73
[14]	731822.000	0.225	0.607	-2.058 ***	-0.407	-0.378	0.34	891	0.41	1.65	[54]	850450.000	1.111 ###	1.076 ###	0.792 **	-0.051	-6.123 **	0.27	995	10.3 ***	1.08
[15]	732020.000	0.461	0.751	-1.185 ***	1.390 **	0.045	0.19	1038	20.4 ***	1.31	[55]	850730.000	-0.120	-0.084	-0.193 ***	0.134	2.972 *	0.31	973	18.6 ***	1.77
[16]	732690.000	-0.045	-0.054	0.122	-1.509 *	-2.361	0.95	1037	6.54 **	1.73	[56]	852290.900	0.618	0.727	-0.692 ***	-0.258	5.953 ***	0.32	1018	37.8 ***	1.34
[17]	820559.000	0.036	0.101	-0.685 ***	1.551 **	8.171 ***	0.18	997	56.7 ***	1.77	[57]	852990.900	0.377	0.247	2.339 ***	0.266	-13.929 ***	0.36	1072	39.1 ***	1.24
[18]	820890.000	0.644	0.586	0.458	1.157	2.638	0.29	1037	39.9 ***	1.83	[58]	853222.000	1.399 ###	1.491 ###	-0.684 **	-0.840 **	-1.040	0.78	1076	31.4 ***	1.25
[19]	840991.100	-0.498 **	-0.345	-0.778 ***	0.252	-1.739	0.72	1080	49.5 ***	0.90	[59]	853223.000	1.089 ###	1.115 ###	-0.771 **	-0.461	-4.280	0.42	862	1.35	0.98
[20]	841330.000	0.392	0.139	1.072 ***	2.097 ***	-5.885 ***	0.64	1074	47.4 ***	1.43	[60]	853321.000	0.208	0.020	1.370 ***	2.387 ***	-3.429	0.14	969	9.73 ***	1.14
[21]	841360.100	0.017	-0.019	0.202 *	0.987 **	1.391	0.14	1074	0.06	1.32	[61]	853340.000	0.465	0.497	-1.033 ***	-0.190	8.676 ***	0.24	1026	32.4 ***	1.12
[22]	841391.000	0.881	0.941	-0.368 **	-0.079	-0.040	0.35	1068	14.9 ***	1.68	[62]	853400.000	-0.099	-0.269	2.113 ***	-0.795	-2.522	0.46	1010	1.67	1.35
[23]	841459.000	0.366	0.278	0.748 ***	0.352	-1.910	0.08	1073	26 ***	1.61	[63]	853641.000	0.107	-0.069	1.513 ***	-0.424	-1.003	0.12	1058	19.2 ***	1.27
[24]	841590.000	0.567	0.564	0.016	0.971 *	-7.468 ***	0.15	1023	13.4 ***	1.54	[64]	853649.000	0.616	0.684	-0.901 ***	-0.466	-12.361 ***	0.21	1022	8.56 ***	1.40
[25]	842123.000	-0.177	-0.078	-0.566 ***	-0.432	-11.257 ***	0.42	972	23.6 ***	1.62	[65]	853650.900	0.283	0.276	0.072	1.101 ***	-1.805 *	0.40	1080	9.43 ***	1.33
[26]	842129.000	0.292	0.338	-0.147	-1.299 *	-1.842	0.02	1004	6.99 ***	1.67	[66]	853669.000	0.924	0.960	-0.573 ***	-2.366 ***	6.136 **	0.12	980	2.95 *	1.67
[27]	842199.000	0.260	0.201	0.455 ***	0.228	-1.797	0.23	1077	60.1 ***	1.92	[67]	853710.000	0.403	0.365	0.162 **	0.089	1.190	0.04	1080	0.49	1.82
[28]	846693.000	-0.252	-0.241	-0.060	2.400 **	12.630 ***	0.21	1028	0.23	1.62	[68]	853890.900	0.723	0.594	1.103 ***	-0.034	-9.185 ***	0.37	1078	0.22	0.90
[29]	846711.000	0.689	0.729	-0.605 ***	0.565	-4.328 ***	0.62	997	0.23	1.92	[69]	854110.920	1.314 ###	1.592 ###	-3.588 ***	-1.000	-15.207 ***	0.24	905	4.07 **	1.27
[30]	847330.000	-0.434	-0.483	3.513 ***	2.774 ***	6.005 **	0.23	1058	6.32 **	0.58	[70]	854121.910	1.313 ###	1.412 ###	-2.027 ***	-0.968	3.654	0.17	897	0	1.38
[31]	847989.900	0.287	0.206	1.194 ***	-0.586	-1.702	0.43	1080	29.6 ***	1.71	[71]	854129.910	0.792	0.857	-4.820 ***	1.763	5.143	0.15	889	32.8 ***	1.66
[32]	847990.000	0.640	0.708	-0.461 **	-0.313	-0.154	0.29	1071	31.4 ***	1.57	[72]	854140.990	1.262 ###	1.177 ###	1.943 ***	-0.645	14.089 ***	0.28	943	69.6 ***	0.90
[33]	848110.000	-0.028	-0.051	0.141	-0.816 *	0.081	0.32	1068	0.72	1.69	[73]	854390.000	-0.206	-0.106	-1.393 ***	-1.297	6.841	0.14	763	12.8 ***	1.49
[34]	848120.000	0.474	0.528	-0.294 *	0.071	-0.885	0.14	1055	3.29 *	1.57	[74]	854451.910	1.193 ###	1.251 ###	-0.511 ***	0.140	-3.031	0.11	1039	42.9 ***	1.63
[35]	848130.900	0.368	0.444	-0.542 ***	0.423	-1.537	0.31	1040	4.65 **	1.55	[75]	870899.900	-0.349	-0.366	0.088	0.235	0.643	0.26	1079	74.1 ***	1.36
[36]	848180.190	0.319	0.335	-0.099	0.896 **	-1.008	0.15	1079	0.53	1.59	[76]	900912.000	-0.200	-0.212	0.058	-1.468 **	-8.442 ***	0.63	884	58.6 ***	1.19
[37]	848190.000	0.457	0.444	0.085	0.786	0.660	0.36	1055	99.7 ***	1.78	[77]	901380.000	-0.271	-0.543	3.503 ***	0.052	5.906 **	0.36	863	13.7 ***	1.62
[38]	848210.000	-0.161	0.028	-1.076 ***	0.284	3.757 ***	0.56	1020	64.1 ***	1.30	[78]	903180.190	-0.032	-0.040	-0.124	-0.835	7.471 ***	0.04	1075	1.9	1.87
[39]	848250.000	0.562	0.697	-0.906 ***	2.174 ***	6.625 ***	0.48	997	95 ***	1.25	[79]	903190.100	0.528	0.510	0.128	-0.579	5.558	0.10	866	10.2 ***	1.97
[40]	848299.000	-0.934 ***	-1.075 ***	0.866 ***	0.383	0.662	0.51	987	82.9 ***	1.53	[80]	961210.000	0.111	-0.027	0.896 ***	1.126	-20.095 ***	0.33	954	30.3 ***	1.46

Note: ER(only) and ER are estimated in equation (3) and (4), resectively. One-side test of coefficient of ER being greater than zero (or less than unity) with statistical significance at 1% and 5% level are shown respectively by ***and** (or by### and ##). LM is the test for the null of homoskedastic disturbances and DW is the Durbin–Watson statistics for unbalanced panel. For other coefficients, F stat and LM, statistical significance at 1%, 5%, and 10% level are shown respectively by ***, **, and *.

Table 2-d. Market share and exchange rate pass-through (Hong Kong)

	HS9	ER(only)	ER	Share*ER	Gas	Wage	Adj R^2	NOB	LM	DW
[01]	370790.000	0.287	0.277	0.059	-0.662 **	6.137 ***	0.40	1077	1.6	1.12
[02]	392062.000	0.512	0.547	-0.227 ***	-2.129 ***	-8.659 ***	0.43	1026	1.45	0.92
[03]	392099.000	0.651	0.691	-0.150 **	3.509 ***	-9.040 ***	0.21	955	2.19	1.46
[04]	392690.000	0.883	0.837	0.400 ***	1.114 ***	-0.154	0.26	1079	2.51	1.68
[05]	401693.000	0.581	0.608	-0.418 ***	-0.574	5.769 **	0.16	1071	31.6 ***	1.65
[06]	401699.000	0.991	1.015 ###	-0.123 *	0.621	-3.440 ***	0.12	1078	1.27	1.21
[07]	482390.900	0.314	0.339	-0.189 **	1.607 **	-4.262 **	0.16	1045	39 ***	1.25
[08]	491110.000	0.255	0.213	0.272 ***	-0.409	6.196 ***	0.14	1040	0.06	1.93
[09]	591190.000	0.677	0.682	-0.033	-0.599	16.055 ***	0.11	957	12 ***	1.30
[10]	731511.900	0.309	0.365	-0.212 ***	0.811	5.730 **	0.32	987	0.27	1.72
[11]	731815.190	-0.841 **	-0.847 **	-0.170 ***	0.278	6.053 ***	0.18	1029	0.33	1.58
[12]	731815.900	0.015	0.036	-0.146	1.725 ***	-15.155 ***	0.40	1071	9.91 ***	1.01
[13]	731816.900	0.636	0.642	-0.089	1.056	-14.579 ***	0.35	979	35.9 ***	1.54
[14]	731822.000	0.165	0.164	0.038	1.762 **	-18.059 ***	0.29	978	5.31 **	1.49
[15]	732020.000	1.050 ###	1.049 ###	0.007	1.451 **	-3.076 *	0.23	1077	4.25 **	1.31
[16]	732690.000	1.047 ###	0.975	0.258 ***	0.966	-2.434	0.95	1038	8.19 ***	1.71
[17]	820559.000	0.744	0.766	-0.064	1.169	20.180 ***	0.43	1005	29.1 ***	1.61
[18]	820890.000	-0.285	-0.248	-0.540 ***	2.238 ***	-3.803	0.12	1062	10.8 ***	1.75
[19]	840991.100	-0.063	0.036	-0.487 ***	0.017	-2.845 *	0.29	1073	0.02	1.32
[20]	841330.000	0.012	0.013	-0.008	0.421	-3.273 **	0.28	1044	0.03	1.66
[21]	841360.100	0.845	0.929	-0.372 ***	-0.133	-1.110	0.43	948	10.9 ***	1.95
[22]	841391.000	0.368	0.353	0.124	0.154	-7.211 ***	0.30	1037	5.44 **	1.53
[23]	841459.000	0.294	0.214	0.276 ***	-0.111	6.119 ***	0.43	1076	6.58 **	1.35
[24]	841590.000	-0.863 **	-0.881 **	0.042	-1.239	0.139	0.14	993	47.3 ***	1.35
[25]	842123.000	0.380	0.426	-0.229 ***	-0.773 *	0.138	0.52	1003	10.2 ***	1.65
[26]	842129.000	0.792	0.785	0.044	3.710 ***	-3.052	0.15	744	0.62	1.62
[27]	842199.000	-0.025	0.052	-0.312 ***	0.020	-3.063 **	0.38	1069	0.11	1.72
[28]	846693.000	-1.812 **	-1.679	-0.502 ***	1.540	-8.935 **	0.04	807	4.18 **	1.83
[29]	846711.000	-0.426	-0.252	-0.544 ***	0.947	-0.526	0.20	790	31.2 ***	1.64
[30]	847330.000	-0.554	-0.636	1.110 ***	-1.245	-0.783	0.16	1061	46.3 ***	0.61
[31]	847989.900	0.478	0.474	0.042	0.277	-2.350	0.27	1080	22.5 ***	1.75
[32]	847990.000	0.421	0.431	0.322	0.532	-2.285	0.17	1039	36.7 ***	1.64
[33]	848110.000	-0.581	-0.556	-0.162 ***	-1.170 ***	4.241 ***	0.22	903	5.51 **	1.79
[34]	848120.000	-0.131	-0.140	0.022	0.627	-3.154	0.10	947	3.32 *	1.71
[35]	848130.900	-0.450	-0.423	-0.074	-2.200 **	3.186	0.23	870	13.7 ***	1.55
[36]	848180.190	0.334	0.328	-0.168 ***	1.461 **	0.733	0.10	1010	1.44	1.57
[37]	848190.000	0.481	0.484	-0.007	0.243	9.058 ***	0.10	825	0.11	1.48
[38]	848210.000	-0.329	-0.189	-0.667 ***	-0.351	-3.400 ***	0.61	1017	86.7 ***	1.34
[39]	848250.000	0.115	0.199	-0.370 ***	1.288 *	-0.823	0.45	878	54.2 ***	1.30
[40]	848299.000	0.093	0.103	-0.112 *	1.311	-1.943	0.20	639	2.09	1.74
[41]	848310.000	0.090	0.104	-0.081 **	1.397 ***	6.557 ***	0.16	1080	4.29 **	1.21
[42]	848330.200	0.400	0.349	0.221 ***	-0.289	6.927 ***	0.27	1080	0.58	1.51
[43]	848340.200	0.829	0.875	-0.223 **	2.199 ***	-4.912 ***	0.21	1079	4.93 **	1.42
[44]	848350.000	-0.416	-0.433	0.291 ***	-0.434	3.265 **	0.47	1079	39.9 ***	1.73
[45]	848360.000	0.129	0.133	-0.084	0.093	-6.785 ***	0.27	960	1.38	1.84
[46]	848410.000	-0.306	-0.283	-0.296 ***	0.548	-9.375 ***	0.28	1024	3.36 *	1.61
[47]	848590.000	0.466	0.464	0.035	1.443 **	-3.353	0.26	1019	1	1.18
[48]	850110.191	0.329	0.339	0.262 ***	-1.494 ***	-8.074 ***	0.32	1042	0.07	1.31
[49]	850151.000	0.165	0.165	0.087 **	-1.544 **	1.059	0.33	958	1.49	1.62
[50]	850300.000	-0.013	-0.147	0.810 ***	-0.988 *	14.794 ***	0.36	1024	1.09	1.14
[51]	850431.910	0.336	0.405	0.670 ***	-0.090	-13.729 ***	0.33	968	4.63 **	1.17
[52]	850440.110	-0.089	-0.159	0.336 ***	-0.348	-11.971 ***	0.24	1041	30.5 ***	1.44
[53]	850440.900	0.331	0.333	-0.024	-0.078	4.744 ***	0.09	1005	8.54 ***	1.49
[54]	850450.000	0.344	0.320	0.090	-0.227	-2.030	0.17	980	11 ***	0.97
[55]	850730.000	-0.380	-0.300	-0.448 ***	-0.970 *	8.745 ***	0.46	992	1.26	1.20
[56]	852290.900	0.059	0.261	-0.719 ***	-4.082 ***	3.557	0.17	1039	122 ***	0.79
[57]	852990.900	1.118 ###	1.171 ###	0.708 ***	1.580 **	9.408 ***	0.22	1072	0.02	0.91
[58]	853222.000	0.412	0.447	-0.314 ***	-1.901 ***	8.729 ***	0.66	1074	90.2 ***	0.89
[59]	853223.000	0.400	0.405	-0.026	1.443 **	0.756	0.49	1009	4.19 **	0.82
[60]	853321.000	-0.096	-0.111	0.574 ***	-0.952 **	7.680 ***	0.11	1021	2.44	1.15
[61]	853340.000	0.635	0.786	-0.734 ***	1.600 ***	6.506 ***	0.27	1013	88.8 ***	1.02
[62]	853400.000	0.891	0.891	-0.023	0.774	7.281 ***	0.56	1053	10.6 ***	0.80
[63]	853641.000	0.528	0.544	0.238 ***	1.541 **	-13.510 ***	0.17	1017	38.3 ***	1.19
[64]	853649.000	0.461	0.479	-0.224 ***	-1.011 *	-14.870 ***	0.14	1049	20.4 ***	1.40
[65]	853650.900	0.120	0.043	1.056 ***	-0.369	3.481 **	0.44	1080	1.62	1.10
[66]	853669.000	0.088	0.076	0.265 ***	0.041	3.338 *	0.12	919	8.9 ***	1.15
[67]	853710.000	-0.062	-0.054	0.151 **	-1.115 *	2.477	0.19	1075	16.4 ***	1.30
[68]	853890.900	0.290	0.220	0.526 ***	0.810	0.053	0.52	1077	31.4 ***	0.70
[69]	854110.920	-0.484	-0.478	-0.093	-1.185 *	3.968 *	0.09	1022	1.51	1.39
[70]	854121.910	0.030	0.105	-0.533	-1.826 **	11.250 ***	0.22	1031	0.46	1.29
[71]	854129.910	-0.621	-0.568	-0.342	1.656	-5.297 *	0.30	967	14.3 ***	1.40
[72]	854140.990	0.682	0.593	0.733 ***	0.564	-5.771 **	0.23	1047	7.4 ***	0.87
[73]	854390.000	-0.496	-0.579	0.278	0.662	-9.171 **	0.13	859	7.72 ***	1.29
[74]	854451.910	0.464	0.455	0.036	0.489	15.409 ***	0.13	1064	3.15 *	1.25
[75]	870899.900	-0.412	-0.452	0.373 ***	0.478	-3.809 **	0.54	1077	0	0.99
[76]	900912.000	0.252	0.270	-0.154 *	-2.536 ***	-3.142	0.57	927	27.9 ***	1.11
[77]	901380.000	-0.460	-0.603	0.929 ***	0.569	-0.230	0.47	938	0.62	1.47
[78]	903180.190	0.486	0.474	0.174 **	-1.033 *	6.208 ***	0.09	1030	0.08	1.83
[79]	903190.100	1.739 ###	1.787 ###	0.184 *	2.316 **	-2.958	0.07	800	7.42 ***	1.67
[80]	961210.000	0.608	0.613	0.042	-0.584	2.383	0.34	1012	0	1.18

Note: ER(only) and ER are estimated in equation (3) and (4), resectively. One-side test of coefficient of ER being greater than zero (or less than unity) with statistical significance at 1% and 5% level are shown respectively by ***and** (or by### and ##). LM is the test for the null of homoskedastic disturbances and DW is the Durbin–Watson statistics for unbalanced panel. For other coefficients, F stat and LM, statistical significance at 1%, 5%, and 10% level are shown respectively by ***, **, and *.

Table 2-e. Market share and exchange rate pass-through (Germany)

	HS9	ER(only)	ER	Share*ER	Gas	Wage	Adj R^2	NOB	LM	DW
[01]	370790.000	0.439	0.480	-0.189 ***	-0.356	9.324 ***	0.25	1077	31.6 ***	0.71
[02]	392062.000	0.834	0.872	-0.169 ***	1.187	-1.374	0.53	929	2.07	0.99
[03]	392099.000	-0.376	-0.497	0.237 ***	-2.173 **	-1.777	0.50	644	112 ***	1.59
[04]	392690.000	0.700	0.672	0.079	-1.085 **	12.543 ***	0.14	1079	24.8 ***	1.29
[05]	401693.000	0.179	0.214	-0.217 ***	0.571	-5.325 ***	0.13	1051	7.02 ***	1.31
[06]	401699.000	1.083 ###	1.083 ###	-0.067	0.336	2.147	0.62	1074	1.26	1.16
[07]	482390.900	0.403	0.377	0.111 ***	1.422 *	9.945 ***	0.38	876	20.9 ***	1.46
[08]	491110.000	0.424	0.402	0.307 ***	-0.980	2.330	0.14	1005	0.21	1.80
[09]	591190.000	0.347	0.328	-0.026	-1.443	-7.519 ***	0.07	736	6.39 **	1.64
[10]	731511.900	-0.297	-0.297	-0.094 ***	0.935	-3.760 *	0.23	833	20.9 ***	1.77
[11]	731815.190	0.528	0.543	-0.191 ***	0.432	-6.172 **	0.15	975	6 **	1.42
[12]	731815.900	-0.014	-0.009	-0.026	-1.037	1.190	0.16	995	40.8 ***	1.64
[13]	731816.900	0.256	0.267	-0.246 ***	-1.773 ***	-1.742	0.56	948	0.24	1.33
[14]	731822.000	-1.819 **	-1.885 **	-0.112 **	-2.514 *	-6.016	0.18	615	15.3 ***	1.34
[15]	732020.000	-0.035	-0.037	0.017	3.075 ***	1.467	0.41	931	0.06	1.53
[16]	732690.000	0.442	0.481	-0.101	-0.296	9.025 ***	0.93	849	10.5 ***	1.54
[17]	820559.000	0.606	0.606	0.002	-0.543	3.378	0.22	849	28.4 ***	1.78
[18]	820890.000	1.772 ###	1.774 ###	-0.049	-0.018	12.849 **	0.58	769	50.6 ***	1.30
[19]	840991.100	0.598	0.650	0.222 ***	-0.216	6.447 ***	0.57	1021	0.07	1.25
[20]	841330.000	0.094	0.101	-0.050 **	-1.023 ***	-4.290 ***	0.53	1045	3.65 *	1.53
[21]	841360.100	0.398	0.434	-0.247 ***	1.195 *	4.451 **	0.22	937	32.8 ***	1.08
[22]	841391.000	0.651	0.612	0.138 ***	-1.132 *	-14.576 ***	0.32	1031	5.42 **	1.32
[23]	841459.000	-0.060	-0.031	-0.070 **	-0.063	7.899 ***	0.23	1016	0.83	1.33
[24]	841590.000	-0.455	-0.437	-0.052 *	-0.379	1.122	0.28	866	75.5 ***	1.45
[25]	842123.000	0.698	0.672	-0.241 ***	1.016 *	1.156	0.20	939	0.5	1.41
[26]	842129.000	1.516 ###	1.549 ###	-0.079	3.376 ***	-6.274 *	0.25	654	6.63 ***	1.60
[27]	842199.000	0.351	0.346	-0.030	1.688 **	-11.235 ***	0.26	988	13.4 ***	1.53
[28]	846693.000	0.113	0.145	-0.495 ***	-1.776 **	4.360 *	0.29	924	0.95	1.76
[29]	846711.000	0.578	0.576	-0.022	1.307 **	10.796 ***	0.45	852	114 ***	0.99
[30]	847330.000	-0.325	-0.326	0.006	0.358	0.623	0.35	1080	39.1 ***	0.83
[31]	847989.900	-0.099	-0.123	0.203 ***	1.529 **	14.794 ***	0.14	997	13.2 ***	1.50
[32]	847990.000	0.530	0.498	0.133	1.770	11.178 ***	0.12	1022	29 ***	1.34
[33]	848110.000	-0.187	-0.171	-0.036	-0.770	-7.710 ***	0.70	716	42.8 ***	1.39
[34]	848120.000	0.542	0.553	-0.026	-1.706 ***	-5.793 ***	0.65	990	0.64	0.93
[35]	848130.900	-0.455	-0.452	-0.143 **	-3.055 ***	-10.141 ***	0.41	670	59.7 ***	1.49
[36]	848180.190	0.382	0.477	-0.217 ***	0.134	2.461	0.19	978	66.1 ***	1.37
[37]	848190.000	0.708	0.699	-0.187 ***	1.386	-8.454 ***	0.24	821	11.7 ***	1.42
[38]	848210.000	0.253	0.312	-0.162 ***	0.438	0.852	0.67	1014	239 ***	1.29
[39]	848250.000	0.684	0.728	-0.173 ***	0.477	-2.671	0.33	877	123 ***	1.12
[40]	848299.000	0.983	0.963	0.112 ***	2.234 ***	3.085	0.33	873	82.2 ***	0.92
[41]	848310.000	0.767	0.717	-0.618 ***	0.821	1.602	0.69	1072	17.9 ***	1.39
[42]	848330.200	-0.581	-0.567	0.076	1.527 **	-1.271	0.16	1044	3.2 *	1.17
[43]	848340.200	-1.607 ***	-1.585 ***	-0.363 ***	-0.912	-11.858 ***	0.29	1050	3.59 *	1.18
[44]	848350.000	0.748	0.713	0.055 ***	0.998	-5.530 **	0.22	959	64.7 ***	1.50
[45]	848360.000	0.527	0.564	-0.305 ***	-0.745	4.966 *	0.30	911	13.2 ***	1.16
[46]	848410.000	0.289	0.308	-0.060 *	-2.007 ***	-0.311	0.15	959	4.01 **	1.66
[47]	848590.000	0.018	0.022	-0.150 ***	0.620	-2.832	0.25	919	54.3 ***	1.48
[48]	850110.191	0.477	0.497	-0.081	-1.384 ***	-0.586	0.20	1027	8.85 ***	1.32
[49]	850151.000	1.111 ###	1.081 ###	-0.143 ***	-0.277	7.529 **	0.23	762	0.21	1.69
[50]	850300.000	0.391	0.476	-0.264 ***	0.700	-1.898	0.40	805	2.25	1.09
[51]	850431.910	0.650	0.655	0.131 **	0.409	13.730 ***	0.28	771	3 *	1.36
[52]	850440.110	1.046 ###	1.061 ###	-0.055	-0.050	0.197	0.17	1043	0.27	1.55
[53]	850440.900	0.432	0.521	-0.158 ***	-1.042 **	0.794	0.17	987	35.7 ***	1.41
[54]	850450.000	0.383	0.277	0.266 **	-1.644 *	-0.495	0.18	914	38 ***	0.93
[55]	850730.000	0.893	0.863	-0.213 ***	-0.144	11.771 ***	0.59	1007	30.7 ***	0.93
[56]	852290.900	0.752	0.747	0.071 **	2.156 ***	-6.963 ***	0.67	976	15.8 ***	0.88
[57]	852990.900	-0.313	-0.356	0.630 ***	3.785 ***	18.157 ***	0.18	1079	1.34	0.79
[58]	853222.000	0.037	0.054	-0.145 ***	1.080 *	-4.144 **	0.45	974	0	1.07
[59]	853223.000	0.707	0.835	-0.468 ***	-0.495	12.993 ***	0.56	697	52.2 ***	0.89
[60]	853321.000	0.463	0.456	0.008	-0.243	-5.130 *	0.22	888	11.5 ***	1.33
[61]	853340.000	0.124	0.195	-0.139	-0.441	12.341 ***	0.25	926	176 ***	1.02
[62]	853400.000	0.757	0.427	0.480 ***	-1.693 *	9.459 ***	0.53	923	3.35 *	1.31
[63]	853641.000	0.182	0.182	0.002	0.814	-4.349 **	0.27	947	13.6 ***	0.83
[64]	853649.000	1.254 ###	1.279 ###	-0.074	-1.336	-0.346	0.05	636	41.6 ***	1.33
[65]	853650.900	0.524	0.436	0.260 ***	0.650 *	6.650 ***	0.39	1080	2.04	1.02
[66]	853669.000	-0.097	-0.146	0.282 ***	1.459 *	16.164 ***	0.16	723	28.7 ***	1.45
[67]	853710.000	0.875	0.877	0.016	0.923 **	5.610 ***	0.33	1075	2.12	1.24
[68]	853890.900	0.684	0.635	0.132 ***	0.572	0.782	0.15	950	6.64 ***	1.24
[69]	854110.920	-1.043	-0.888	-0.333 ***	-4.048 ***	10.754 *	0.23	603	27.7 ***	1.25
[70]	854121.910	0.878	1.162 ###	-0.579 ***	-3.131 **	5.172	0.43	745	20.4 ***	1.55
[71]	854129.910	2.534 ###	2.508 ###	0.801 **	0.107	7.442	0.27	682	23.1 ***	1.13
[72]	854140.990	0.258	0.242	0.242	-1.166	3.114	0.52	870	19.9 ***	1.08
[73]	854390.000	0.211	0.271	-0.094	0.365	0.554	0.29	803	17.3 ***	1.48
[74]	854451.910	0.530	0.551	-0.137 ***	-0.247	4.581	0.16	977	13 ***	1.57
[75]	870899.900	0.313	0.311	0.033	0.134	-13.361 ***	0.45	1075	0	1.14
[76]	900912.000	0.731	0.721	0.025	-0.064	-5.159 ***	0.24	806	0.17	1.77
[77]	901380.000	-0.666	-0.530	0.971 ***	1.493 **	-16.916 ***	0.46	762	10.4 ***	1.44
[78]	903180.190	-0.236	-0.189	-0.116 **	-0.200	-8.836 ***	0.06	918	23 ***	1.59
[79]	903190.100	0.748	0.802	-0.132	-1.623	13.025 ***	0.27	745	21.4 ***	1.47
[80]	961210.000	1.190 ###	1.188 ###	-0.006	5.495 ***	4.559	0.43	986	23.2 ***	1.11

Note: ER(only) and ER are estimated in equation (3) and (4), resectively. One-side test of coefficient of ER being greater than zero (or less than unity) with statistical significance at 1% and 5% level are shown respectively by ***and** (or by### and ##). LM is the test for the null of homoskedastic disturbances and DW is the Durbin–Watson statistics for unbalanced panel. For other coefficients, F stat and LM, statistical significance at 1%, 5%, and 10% level are shown respectively by ***, **, and *.

Table 2-f. Market share and exchange rate pass-through (USA)

	HS9	ER(only)	ER	Share*ER	Gas	Wage	Adj R^2	NOB	LM	DW		HS9	ER(only)	ER	Share*ER	Gas	Wage	Adj R^2	NOB	LM	DW
[01]	370790.000	0.234	0.262	-0.151 ***	-0.939 ***	9.132 ***	0.36	1079	18.5 ***	0.54	[41]	848310.000	0.772	0.778	-0.029	0.123	-3.296 ***	0.85	1080	10.1 ***	0.59
[02]	392062.000	1.178 ###	1.165 ###	-0.144 ***	-1.197 **	-0.949	0.39	1058	2.24	1.32	[42]	848330.200	0.170	0.164	0.046 **	-0.729 **	-3.148 **	0.43	1080	110 ***	1.08
[03]	392099.000	-0.293	-0.323	0.243 ***	-0.905	-2.898	0.17	959	1.47	1.29	[43]	848340.200	0.985	1.020 ###	-0.203 ***	0.321	-2.243 **	0.48	1080	18.5 ***	0.74
[04]	392690.000	0.236	0.230	-0.117 *	-0.988 ***	7.897 ***	0.26	1080	0.26	0.93	[44]	848350.000	0.171	0.173	-0.018	0.820 *	5.063 ***	0.41	1080	15.9 ***	0.59
[05]	401693.000	0.400	0.435	-0.351 ***	-1.404 ***	3.747 ***	0.30	1080	30.4 ***	1.20	[45]	848360.000	0.926	0.969	-0.463 ***	0.602 *	-2.241 **	0.41	1078	53.4 ***	1.28
[06]	401699.000	0.831	0.947	-0.459 ***	-0.498 *	11.195 ***	0.46	1080	3.92 **	0.85	[46]	848410.000	0.663	0.668	-0.023	0.393	-1.521 *	0.23	1076	0.01	1.37
[07]	482390.900	0.695	0.704	0.343 ***	2.567 ***	0.951	0.46	1077	3.01 *	1.40	[47]	848590.000	1.078 ###	1.067 ###	0.034 **	0.293	0.016	0.31	1042	19.6 ***	1.24
[08]	491110.000	0.028	0.039	0.262 ***	-0.305	5.935 ***	0.10	1076	96.3 ***	1.72	[48]	850110.191	0.618	0.601	0.251 ***	-1.126 **	-2.544 *	0.29	1071	101 ***	0.87
[09]	591190.000	0.296	0.310	-0.049	1.659 ***	6.109 ***	0.20	1007	0.09	1.36	[49]	850151.000	0.459	0.493	-0.274 ***	1.099 **	-6.813 ***	0.54	1063	2.24	1.39
[10]	731511.900	0.808	0.837	-0.171 ***	0.858 ***	-2.460 ***	0.53	1078	22.6 ***	1.09	[50]	850300.000	0.827	0.796	-0.632 ***	0.215	5.962 ***	0.23	1034	2.57	0.85
[11]	731815.190	0.623	0.620	0.022	1.086 ***	-4.767 ***	0.76	1080	13.4 ***	0.68	[51]	850431.910	-0.161	-0.153	-0.023	-0.927	3.339	0.18	992	30.7 ***	1.38
[12]	731815.900	0.650	0.660	-0.101 ***	-0.229	-5.734 ***	0.71	1080	0.09	0.98	[52]	850440.110	0.488	0.429	0.307 ***	-1.137 ***	1.384	0.45	1080	7 ***	0.89
[13]	731816.900	0.874	0.885	-0.183 ***	-0.056	-1.741 ***	0.80	1080	4.82 **	0.65	[53]	850440.900	0.462	0.493	-0.298 ***	-0.341	8.361 ***	0.44	1074	5.06 **	1.11
[14]	731822.000	1.172 ###	1.202 ###	-0.298 ***	1.139 ***	4.830 ***	0.78	1080	1.59	0.87	[54]	850450.000	0.949	0.825	0.549 ***	-1.465 *	0.193	0.39	1050	14.7 ***	1.12
[15]	732020.000	0.040	0.040	0.001	-0.873 *	10.236 ***	0.37	1076	0.05	0.66	[55]	850730.000	1.211 ###	1.259 ###	-0.223 ***	1.201 ***	2.970 **	0.48	1062	53.6 ***	1.50
[16]	732690.000	0.856	0.877	-0.223 **	0.899 *	0.029	0.98	1080	28.1 ***	1.23	[56]	852290.900	0.800	0.799	0.103 ***	-0.253	0.998	0.57	1072	131 ***	1.11
[17]	820559.000	0.891	0.875	0.109 **	3.132 ***	10.087 ***	0.29	1075	0.17	1.54	[57]	852990.900	0.934	0.939	0.686 ***	-2.437 ***	-3.814 **	0.43	1080	2.35	0.72
[18]	820890.000	1.019 ###	0.888	0.487 ***	0.229	12.234 ***	0.39	1070	0	1.54	[58]	853222.000	1.225 ###	1.233 ###	-0.021 **	0.263	-2.776 ***	0.71	1080	124 ***	0.88
[19]	840991.100	0.742	0.710	0.132 ***	1.010 ***	-5.740 ***	0.73	1080	4.54 **	0.43	[59]	853223.000	0.326	0.332	-0.012	0.597	6.294 **	0.66	990	85.4 ***	0.65
[20]	841330.000	0.295	0.283	0.117 ***	-0.027	-4.261 ***	0.86	1080	3.29 *	0.47	[60]	853321.000	0.397	0.386	0.054 **	0.808 **	-5.671 ***	0.46	1065	0.71	1.22
[21]	841360.100	1.045 ###	1.051 ###	-0.172 ***	0.728 **	-1.738	0.30	988	28.2 ***	1.34	[61]	853340.000	0.674	0.635	0.129 ***	-0.188	0.643	0.49	1079	18.3 ***	1.02
[22]	841391.000	1.340 ###	1.325 ###	0.068	0.639	8.468 ***	0.40	1080	0.52	0.70	[62]	853400.000	0.366	0.314	0.977 ***	-3.718 ***	9.259 ***	0.16	1063	103 ***	0.83
[23]	841459.000	1.023 ###	1.054 ###	-0.215 ***	-0.148	2.376 ***	0.56	1078	0.93	0.70	[63]	853641.000	0.515	0.378	0.426 ***	1.249 ***	-1.640	0.48	1069	12.1 ***	0.92
[24]	841590.000	0.836	0.857	-0.174 ***	1.319 **	-2.338	0.35	966	94.7 ***	1.28	[64]	853649.000	0.693	0.697	-0.014	-1.033 **	-3.215 *	0.19	1027	18.7 ***	1.35
[25]	842123.000	0.598	0.599	-0.341 ***	0.099	-4.674 ***	0.42	1075	48.6 ***	0.87	[65]	853650.900	0.827	0.835	-0.053	1.635 ***	-1.668 *	0.65	1080	11.5 ***	0.69
[26]	842129.000	1.330 ###	1.319 ###	0.012	-1.610 ***	9.780 ***	0.30	940	19.6 ***	1.49	[66]	853669.000	0.577	0.617	0.884 ***	0.556	8.065 ***	0.42	1004	12 ***	0.65
[27]	842199.000	0.766	0.774	-0.074	1.853 ***	5.794 ***	0.48	1079	1.94	1.13	[67]	853710.000	0.481	0.493	-0.076 **	-1.548 ***	1.008	0.31	1080	42.8 ***	1.37
[28]	846693.000	0.814	0.844	-0.240 ***	-1.764 ***	5.831 ***	0.31	1072	42 ***	1.39	[68]	853890.900	0.528	0.525	0.350 ***	0.900 *	1.752	0.17	1042	2.63	0.94
[29]	846711.000	0.474	0.499	-0.091 **	0.260	-2.485 **	0.71	1003	98.4 ***	1.52	[69]	854110.920	0.682	0.950	-0.992 ***	-2.711 ***	27.889 ***	0.24	980	76.5 ***	0.88
[30]	847330.000	0.515	0.524	-0.055	0.983 **	-14.620 ***	0.52	1080	19.2 ***	0.65	[70]	854121.910	1.171 ###	1.336 ###	-0.473 ***	-0.915	0.896	0.32	973	0.05	0.90
[31]	847989.900	0.602	0.586	0.114 ***	-0.693 **	4.626 ***	0.28	1080	27.4 ***	1.58	[71]	854129.910	0.997	1.087 ###	-0.510 ***	-1.842 *	6.888 ***	0.44	1047	37.3 ***	1.00
[32]	847990.000	0.696	0.701	-0.023	-1.093	4.588 **	0.16	1074	6.93 ***	1.32	[72]	854140.990	0.719	0.718	0.358 **	0.593	-54.034 ***	0.30	972	38 ***	0.80
[33]	848110.000	0.836	0.811	0.100 ***	-0.276	8.240 ***	0.22	950	28.4 ***	1.00	[73]	854390.000	0.042	0.048	-0.012	-6.162 ***	12.369 ***	0.18	1024	12.8 ***	1.19
[34]	848120.000	0.466	0.407	0.289 ***	-0.131	-2.248	0.22	1063	0.57	1.07	[74]	854451.910	0.459	0.484	0.215 ***	-0.610	-4.336 ***	0.20	1059	0.14	1.34
[35]	848130.900	0.905	0.911	-0.088 ***	1.305 **	6.061 ***	0.25	996	3.92 **	0.74	[75]	870899.900	0.761	0.754	0.031	-0.263	2.659 ***	0.61	1080	89.2 ***	0.54
[36]	848180.190	0.592	0.678	-0.434 ***	-0.053	2.151	0.29	1079	24.4 ***	1.33	[76]	900912.000	0.806	0.774	0.037 ***	-0.606 *	-2.330 ***	0.28	861	3.1 *	1.54
[37]	848190.000	0.186	0.217	-0.165 ***	1.000 **	5.183 ***	0.33	1079	1.28	0.86	[77]	901380.000	0.898	0.136	1.988 ***	-2.597 **	4.042	0.37	982	2.9 *	1.13
[38]	848210.000	0.948	1.010 ###	-0.272 ***	0.028	-2.463 ***	0.60	1020	55.7 ***	0.86	[78]	903180.190	0.123	0.136	-0.105 ***	-1.636 ***	4.215 **	0.13	1049	0.17	1.80
[39]	848250.000	0.862	0.859	0.018	-0.621 **	-0.145	0.60	1003	60.4 ***	0.91	[79]	903190.100	1.337 ###	1.349 ###	-0.368 ***	-1.927 ***	11.038 ***	0.11	1051	14.3 ***	1.62
[40]	848299.000	0.895	0.913	-0.063	0.466	-7.980 ***	0.57	1080	13.1 ***	0.65	[80]	961210.000	0.256	0.228	-0.244 ***	0.987	-14.461 ***	0.67	1075	33.1 ***	0.78

Note: ER(only) and ER are estimated in equation (3) and (4), resectively. One-side test of coefficient of ER being greater than zero (or less than unity) with statistical significance at 1% and 5% level are shown respectively by ***and** (or by### and ##). LM is the test for the null of homoskedastic disturbances and DW is the Durbin–Watson statistics for unbalanced panel. For other coefficients, F stat and LM, statistical significance at 1%, 5%, and 10% level are shown respectively by ***, **, and *.

Table 3. Market share and ERPT (non-linear specification)

Importing countries	negative	positive	Convex	Concave
Korea	37.5	17.5	7.5	33.8
China	25.0	12.5	16.3	10.0
Taiwan	17.5	43.8	40.0	15.0
Hong Kong	27.5	23.8	22.5	15.0
Germany	25.0	35.0	36.3	16.3
USA	20.0	32.5	35.0	6.3
Total	25.4	27.5	26.3	16.0

Note: Figures are percentage of commodities with indicated change of ERPT with respect to an increase in market share. Only the coefficients statistically significant at one percent level are used for calculation.

Table 3-a. Non-linear market share and exchange rate pass-through, Korea

	HS9	ER(only)	ER	Share*ER	Share^2*ER	Gas	Adj R^2	NOB	LM	DW		HS9	ER(only)	ER	Share*ER	Share^2*ER	Gas	Adj R^2	NOB	LM	DW
[01]	370790.000	0.149	0.164	-0.291	0.422	-1.614 ***	0.64	992	59.5 ***	0.64	[41]	848310.000	0.784	0.656	3.594 ***	-6.983 ***	-0.247	0.46	1078	0.41	1.26
[02]	392062.000	-0.355	-0.431	0.646 ***	-0.331	-0.025	0.26	1030	0.33	1.29	[42]	848330.200	-0.176	-0.226	0.820 **	-2.556 ***	1.090 ***	0.34	1078	7.4 ***	1.42
[03]	392099.000	-0.001	-0.007	-1.176 ***	1.055	-1.422 **	0.38	982	81.3 ***	1.17	[43]	848340.200	0.456	0.328	2.255 ***	-3.276 ***	0.204	0.31	1080	1.28	1.26
[04]	392690.000	0.033	0.078	-0.989 **	2.694 **	-0.984 *	0.14	1080	4.49 **	1.39	[44]	848350.000	0.527	0.233	1.479 ***	-1.579 ***	0.034	0.39	974	41.6 ***	1.44
[05]	401693.000	0.047	0.006	0.686 **	-0.896	0.883 *	0.42	1073	0.1	1.52	[45]	848360.000	0.983	0.702	2.417 ***	-3.083 ***	0.287	0.38	1037	10.4 ***	1.53
[06]	401699.000	0.022	-0.031	2.675 ***	-3.956 ***	0.151	0.41	1080	6.09 **	1.30	[46]	848410.000	-0.019	-0.349	1.410 ***	-1.635 **	1.671 **	0.16	834	4.28 **	1.49
[07]	482390.900	-0.517	-0.481	0.824 **	-1.068	0.479	0.13	1022	0.62	1.48	[47]	848590.000	0.142	0.147	-0.254	-1.355 ***	-0.742	0.19	1033	0.3	1.41
[08]	491110.000	-0.326	-0.447	0.699	-1.428 *	0.351	0.08	742	2.04	1.98	[48]	850110.191	-0.249	-0.064	-1.309 ***	2.533 ***	1.899 ***	0.14	980	8.37 ***	1.24
[09]	591190.000	0.602	0.504	1.140 ***	-1.074 **	-0.594	0.42	859	61.9 ***	1.21	[49]	850151.000	-0.002	-0.040	0.780	-1.696	-0.876	0.30	1053	5.83 **	1.69
[10]	731511.900	-0.013	-0.011	0.302	-0.430	1.329 **	0.27	983	197 ***	1.35	[50]	850300.000	-0.534	-0.591	0.732 *	-1.164	0.119	0.19	992	83.3 ***	1.65
[11]	731815.190	0.593	0.530	1.448 ***	-1.293 ***	0.849	0.18	910	0.67	1.53	[51]	850431.910	-0.301	-0.429	0.903 **	-0.450	-4.872 ***	0.40	907	80.5 ***	1.13
[12]	731815.900	0.096	0.201	-0.437	-0.371	-2.957 ***	0.26	958	9.82 ***	1.35	[52]	850440.110	-0.419	-0.432	0.167	0.046	1.018	0.24	988	1.33	1.66
[13]	731816.900	-0.089	-0.183	0.848 **	-0.245	-0.034	0.17	894	21.7 ***	1.53	[53]	850440.900	0.512	0.466	0.490 **	-0.375	-1.095	0.12	1005	12.5 ***	1.53
[14]	731822.000	0.141	0.117	1.368 ***	-1.691 ***	2.300 *	0.23	754	5.13 **	1.08	[54]	850450.000	0.391	0.502	0.107	-2.762	-2.642 ***	0.40	1042	0.54	1.21
[15]	732020.000	-0.659	-0.696	1.603 ***	-2.130 **	1.957 **	0.15	1024	37.2 ***	1.00	[55]	850730.000	0.331	0.294	0.614 **	-0.961 *	1.562 **	0.41	866	2.96 *	1.57
[16]	732690.000	-0.439	-0.428	-0.208	-0.206	-0.820	0.95	991	4.05 **	1.68	[56]	852290.900	-0.391	-0.454	0.987 *	0.058	-2.550 ***	0.46	878	118 ***	1.18
[17]	820559.000	-0.299	-0.483	1.496 ***	-2.027 ***	0.285	0.36	891	20.6 ***	1.84	[57]	852990.900	-0.522	-0.527	-0.358	0.235	-2.277 ***	0.40	1004	46.1 ***	0.96
[18]	820890.000	-0.124	-0.182	3.475 ***	-8.217 ***	-0.296	0.24	949	39.9 ***	1.76	[58]	853222.000	0.122	0.014	1.457 **	-3.918	0.023	0.47	1007	34.1 ***	1.12
[19]	840991.100	-0.281	-0.423	1.295 ***	-0.814 **	-0.917	0.32	936	5.61 **	1.16	[59]	853223.000	-0.003	-0.181	1.246 ***	-1.841 **	1.548	0.44	791	32.9 ***	1.00
[20]	841330.000	0.284	0.281	0.401 **	-0.828 ***	0.920 *	0.24	897	1.08	1.37	[60]	853321.000	-0.654	-0.701	7.370 ***	-27.175 ***	0.840	0.26	972	16.5 ***	0.83
[21]	841360.100	0.016	0.006	0.764 ***	-1.273 ***	0.255	0.50	1076	35.6 ***	1.44	[61]	853340.000	0.260	0.187	2.983 ***	-8.168 **	-1.504 **	0.30	1027	15.1 ***	1.19
[22]	841391.000	0.166	0.152	0.202	-0.145	0.390	0.44	1018	57.5 ***	1.35	[62]	853400.000	-0.486	-0.403	-2.191 ***	3.967 ***	-1.471 *	0.34	995	0.51	1.15
[23]	841459.000	-0.280	-0.272	0.345 *	-0.563 ***	-0.383	0.07	1049	0.76	1.64	[63]	853641.000	0.234	0.211	4.402 ***	-30.094 ***	-0.586	0.19	964	21.9 ***	1.21
[24]	841590.000	0.203	0.217	-0.019	0.103	-1.631 *	0.24	674	4.94 **	1.34	[64]	853649.000	-0.012	0.211	-1.079 ***	0.063	0.237	0.21	880	0.09	1.34
[25]	842123.000	0.543	0.578	-0.027	-0.107	0.189	0.17	759	21.2 ***	1.86	[65]	853650.900	0.901	0.887	-4.722 ***	19.719 ***	-0.388	0.19	1079	39.7 ***	1.04
[26]	842129.000	0.327	0.226	0.676 ***	-0.899 ***	-0.294	0.05	959	21.8 ***	1.78	[66]	853669.000	0.584	0.660	-0.063	-2.219 **	-0.723	0.32	811	6.44 **	1.55
[27]	842199.000	-0.278	-0.363	0.691 ***	-1.118 ***	-0.719	0.05	1027	18.5 ***	1.64	[67]	853710.000	0.204	0.216	-0.391 **	0.263	-1.166 ***	0.26	1079	23 ***	1.71
[28]	846693.000	0.373	0.199	2.041 ***	-2.754 ***	2.406 ***	0.24	1029	3.99 **	1.88	[68]	853890.900	0.352	0.325	0.058	-1.347 *	1.091 *	0.13	1068	9.17 ***	1.24
[29]	846711.000	-0.071	0.025	0.405 **	-0.989 ***	-0.148	0.57	962	104 ***	1.65	[69]	854110.920	-1.531	-1.513	38.442 ***	-235.667 ***	-0.071	0.29	933	72.8 ***	1.09
[30]	847330.000	0.519	0.402	1.802 ***	-5.926 ***	5.003 ***	0.27	1032	116 ***	1.27	[70]	854121.910	-0.319	-0.165	4.077 ***	-4.533 ***	1.186	0.33	965	19.2 ***	1.33
[31]	847989.900	0.077	0.152	-2.081 ***	3.652 ***	-0.142	0.37	1080	14.1 ***	1.65	[71]	854129.910	0.630	0.746	-3.991	-0.476	4.392 **	0.10	903	30.1 ***	1.01
[32]	847990.000	0.077	0.099	-0.267	0.701	0.177	0.22	1077	5.56 **	1.70	[72]	854140.990	-1.226 **	-1.255 **	-1.302	-7.057	3.467 **	0.25	958	43.8 ***	1.07
[33]	848110.000	-0.211	-0.219	0.188	-0.449 *	0.478	0.28	985	19.7 ***	1.72	[73]	854390.000	0.106	-0.349	3.517 ***	-4.391 ***	-2.480 *	0.23	854	2.29	1.67
[34]	848120.000	0.219	0.132	1.165 ***	-2.437 ***	-0.483	0.40	1064	15.1 ***	1.22	[74]	854451.910	0.153	0.181	0.444	-1.488 ***	-1.660 *	0.25	986	16.3 ***	1.79
[35]	848130.900	-0.528	-0.462	-0.797 ***	0.800 **	1.037 *	0.33	1003	58.7 ***	1.29	[75]	870899.900	-0.148	-0.146	-0.026	0.095	0.218	0.13	1016	21.6 ***	1.14
[36]	848180.190	0.029	-0.006	0.485 ***	-0.661 *	-0.890 **	0.17	1077	6.36 **	1.34	[76]	900912.000	0.409	0.534	-1.720 ***	1.399 ***	1.299 *	0.61	708	56.5 ***	1.46
[37]	848190.000	-0.280	-0.216	-0.234	0.119	0.012	0.21	1024	17.2 ***	1.39	[77]	901380.000	-0.967	-0.663	-2.050 ***	2.243 ***	-0.884	0.39	871	8.29 ***	1.32
[38]	848210.000	0.296	0.251	0.066	0.532	1.370 ***	0.65	1017	227 ***	0.72	[78]	903180.190	0.307	0.264	0.240	0.004	0.325	0.08	1073	2.24	2.02
[39]	848250.000	0.326	0.184	0.830 ***	-0.864 ***	1.093 **	0.61	921	206 ***	1.95	[79]	903190.100	-0.241	-0.230	-0.206	0.289	-3.708 ***	0.12	879	2.16	1.71
[40]	848299.000	0.300	0.266	0.611 **	-0.888 **	0.439	0.57	877	87.8 ***	1.30	[80]	961210.000	-0.552	-0.623	0.432	-0.362	-1.054	0.37	829	0.02	1.46

Note: ER(only) and ER are estimated in equation (3) and (4), resectively. Estimates for Wage is suppressed due to space constraint. One-side test of coefficient of ER being greater than zero (or less than unity) with statistical significance at 1% and 5% level are shown respectively by ***and** (or by### and ##). LM is the test for the null of homoskedastic disturbances and DW is the Durbin–Watson statistics for unbalanced panel. For other coefficients, F stat and LM, statistical significance at 1%, 5%, and 10% level are shown respectively by ***, **, and *.

Table 4. Difference in standard deviation of port shares between 1988 and 2004

HS9	KOR	CHN	TWN	HK	GMN	US	HS9	KOR	CHN	TWN	HK	GMN	US
370790000	-0.0653	-0.6059	-0.0793	-0.0914	-0.0094	-0.0201	848310000	0.0136	-0.0720	0.0200	-0.1072	-0.0342	-0.0490
392062000	0.0319	-0.1812	-0.3195	-0.2680	-0.0544	0.0269	848330200	-0.0597	-0.1527	-0.0238	-0.0423	-0.1017	-0.0395
392099000	-0.0855	-0.3848	-0.0140	-0.1401	-0.4009	-0.0950	848340200	-0.0220	-0.1830	0.0368	-0.0241	0.1075	-0.0128
392690000	-0.0616	-0.1465	-0.0267	-0.0595	-0.0054	-0.0374	848350000	0.0514	-0.3543	0.1066	0.0262	0.2156	0.0249
401693000	-0.0445	-0.1500	-0.0101	-0.0357	-0.0728	-0.0292	848360000	0.0029	-0.0649	-0.0252	-0.0481	-0.2102	0.0019
401699000	-0.0071	-0.0991	-0.0217	0.0072	-0.0082	-0.0341	848410000	-0.0345	-0.1824	0.0029	-0.1527	0.1450	0.0937
482390900	-0.0991	-0.1403	-0.0558	-0.0841	0.0988	0.0483	848590000	-0.0032	-0.1481	-0.0689	0.0290	-0.0964	-0.1497
491110000	-0.1065	-0.2395	0.0151	-0.0056	0.0639	-0.0207	850110191	0.0195	-0.9457	-0.0225	-0.0769	0.0864	0.0284
591190000	-0.1060	-1.1655	-0.0433	-0.1177	-0.6706	-0.1147	850151000	-0.0926	-0.4438	-0.0687	-0.1177	-0.2251	-0.0509
731511900	-0.0411	-0.7511	0.0168	0.0503	-0.0134	0.0019	850300000	-0.0130	-0.2074	-0.0226	-0.0815	0.1727	-0.0463
731815190	0.0170	-0.1973	0.0512	-0.1885	-0.0337	0.0804	850431910	-0.1182	-0.2071	0.0588	-0.2394	0.4242	0.0103
731815900	-0.0842	-0.7288	0.0049	0.0009	-0.0224	-0.0068	850440110	-0.1305	-0.2012	-0.0305	-0.0239	-0.0435	-0.1072
731816900	0.0244	-0.7227	0.0270	-0.1597	-0.0701	-0.0214	850440900	-0.1457	-0.4467	-0.0293	-0.1787	0.0630	-0.0393
731822000	0.0524	-0.9820	0.1957	-0.0911	-0.4674	-0.0128	850450000	-0.0868	-0.3430	-0.0501	-0.0776	-0.0377	-0.0074
732020000	-0.0379	-0.3114	-0.0464	-0.0967	-0.1381	-0.0739	850730000	0.0588	-0.2022	0.1043	0.1826	0.1416	0.1879
732690000	-0.1877	-0.3477	-0.0595	-0.0238	-0.1495	-0.0237	852290900	0.0258	-0.4243	-0.0575	-0.2215	0.0472	0.0257
820559000	-0.2003	-0.2325	0.0062	-0.1352	0.0065	-0.0373	852990900	-0.0709	-0.2281	-0.0394	-0.0450	-0.0733	-0.0439
820890000	-0.0873	-0.2706	-0.0349	-0.1135	0.0352	0.0710	853222000	-0.0455	-0.1629	-0.0117	0.0288	0.1168	-0.0585
840991100	-0.0741	-0.1575	0.0293	0.0104	-0.0765	0.0301	853223000	-0.0472	-0.1708	0.0288	0.0443	0.1183	-0.0278
841330000	-0.0542	-0.0892	0.0526	0.0077	-0.0342	-0.0400	853321000	0.0064	-0.1942	0.0052	0.0055	0.2847	0.1718
841360100	-0.0445	-0.1692	-0.0440	-0.1440	-0.0950	-0.0857	853340000	-0.0572	-0.2621	0.0076	-0.0291	0.0674	-0.0555
841391000	0.1683	-0.2346	-0.0020	-0.0849	0.0144	0.0580	853400000	-0.0703	-0.1385	-0.0510	-0.0254	0.0727	-0.0133
841459000	-0.0302	-0.2690	0.0463	0.0043	0.1645	-0.0149	853641000	-0.0057	-0.2794	-0.0022	-0.0458	0.0685	-0.0436
841590000	-0.0819	-0.3472	-0.0518	-0.1174	-0.1830	0.0095	853649000	-0.0398	-0.1664	0.0916	0.0015	-0.0695	-0.0161
842123000	-0.0044	-0.1321	-0.0500	-0.0430	0.1656	0.0590	853650900	-0.0159	-0.1803	-0.0421	-0.0326	-0.0424	-0.0055
842129000	-0.2883	-0.3182	-0.1146	-0.1453	0.0255	-0.1009	853669000	0.0344	-0.1628	-0.0214	-0.0832	0.0171	0.0180
842199000	-0.0467	-0.1454	0.0092	-0.0164	-0.1087	-0.0040	853710000	-0.0176	-0.1107	0.0307	0.0439	0.0375	-0.0750
846693000	-0.1962	-0.5194	-0.1390	-0.1548	-0.0601	-0.1664	853890900	-0.0703	-0.2734	-0.0502	-0.0950	-0.0136	-0.0039
846711000	-0.1654	-0.9818	-0.0478	-0.5728	-0.1108	0.0182	854110920	-0.0223	-0.3104	-0.0434	-0.0140	-0.0840	-0.0163
847330000	-0.0357	-0.2649	-0.0612	-0.0935	0.0692	0.0077	854121910	0.1556	-0.2265	-0.0124	-0.0090	-0.0618	0.0012
847989900	-0.0675	-0.1435	-0.0016	-0.0696	-0.0351	-0.0367	854129910	-0.0176	-0.3611	-0.0086	-0.0236	-0.0608	0.0657
847990000	-0.1091	-0.1859	-0.0685	0.0197	0.0300	-0.0072	854140990	-0.0100	-1.1849	-0.0225	-0.0360	0.0408	-0.0248
848110000	-0.0509	-0.4217	-0.0066	-0.0089	-0.0998	-0.0480	854390000	-0.0550	-0.7391	-0.0541	-0.1297	-0.1149	-0.0145
848120000	-0.0483	-0.1938	0.0039	0.0070	-0.1143	-0.0037	854451910	-0.1373	-0.3370	-0.0588	-0.1007	0.0380	0.0086
848130900	-0.0299	-0.2853	-0.0581	-0.0106	-0.4621	0.0799	870899900	-0.0226	-0.1526	0.0481	0.0329	0.0939	0.0419
848180190	-0.1429	-0.0916	-0.1318	-0.1158	0.0932	-0.0624	900912000	-0.0133	-0.4128	0.2833	0.3698	1.0383	0.2327
848190000	0.0328	-0.4299	-0.1092	-0.0638	-0.0982	-0.1206	901380000	-0.1536	-0.6526	0.0021	0.0840	0.0007	-0.0258
848210000	-0.0380	-0.1945	-0.0289	0.0042	0.0570	0.0154	903180190	-0.1206	-0.1839	-0.0265	-0.0976	0.0543	-0.0035
848250000	-0.0415	-0.2693	-0.0238	-0.2514	0.1465	0.0016	903190100	-0.1099	-0.3744	-0.0594	-0.3948	-0.1295	-0.0108
848299000	-0.1398	-1.4302	-0.1979	-0.9007	0.0888	-0.0188	961210000	-0.1525	-0.9656	0.1052	0.0507	-0.0082	-0.0155

Note: Annual averages of monthly standard deviations for each year are used.

Table 5-a. Market share and marginal cost (gassoline), Korea

	HS9	ER(only)	ER	Gas	Share*Gas	Share^2*Gas	Adj R^2	NOB	LM	DW
[01]	370790.000	0.149	0.152	-1.652	0.150	-0.219	0.64	992	58.8 ***	0.64
[02]	392062.000	-0.355	-0.366	-0.042	-0.341	0.201	0.27	1030	0.26	1.31
[03]	392099.000	-0.001	-0.107	-1.332	0.449 *	-0.392	0.38	982	91 ***	1.16
[04]	392690.000	0.033	0.042	-1.050	0.251	-1.013	0.14	1080	2.35	1.40
[05]	401693.000	0.047	0.059	0.916	-0.321	0.363	0.42	1073	0.08	1.53
[06]	401699.000	0.022	0.176	0.223	-1.128 ***	1.638 ***	0.41	1080	7.34 ***	1.28
[07]	482390.900	-0.517	-0.407	0.470	-0.363	0.456	0.13	1022	0.64	1.48
[08]	491110.000	-0.326	-0.405	0.386	-0.332	0.670	0.08	742	2.27	1.98
[09]	591190.000	0.602	0.634	-0.499	-0.706 **	0.685	0.44	859	63.6 ***	1.24
[10]	731511.900	-0.013	0.041	1.336 ***	-0.260	0.344 *	0.27	983	203 ***	1.36
[11]	731815.190	0.593	0.684	0.919	-0.608 **	0.543	0.18	910	0.81	1.52
[12]	731815.900	0.096	0.121	-3.018 *	0.217	0.063	0.26	958	9.86 ***	1.35
[13]	731816.900	-0.089	-0.063	0.020	-0.373	0.095	0.17	894	20.6 ***	1.53
[14]	731822.000	0.141	0.234	2.387	-0.635	0.797	0.23	754	3.99 **	1.08
[15]	732020.000	-0.659	-0.504	2.148 **	-0.853 **	1.208 *	0.16	1024	37.2 ***	0.99
[16]	732690.000	-0.439	-0.454	-0.865	0.072	0.086	0.95	991	3.99 **	1.68
[17]	820559.000	-0.299	-0.314	0.412	-0.680 ***	0.906 **	0.37	891	21.7 ***	1.84
[18]	820890.000	-0.124	0.055	-0.095	-1.352 ***	3.110 ***	0.23	949	39.8 ***	1.76
[19]	840991.100	-0.281	-0.278	-0.818	-0.397 *	0.145	0.30	936	5.54 **	1.13
[20]	841330.000	0.284	0.301	0.900 **	-0.173	0.361	0.25	897	0.94	1.37
[21]	841360.100	0.016	0.060	0.265	-0.281 ***	0.496 ***	0.50	1076	33.5 ***	1.42
[22]	841391.000	0.166	0.170	0.409	-0.117	0.104	0.44	1018	57.7 ***	1.35
[23]	841459.000	-0.280 **	-0.260 **	-0.416	-0.168 *	0.254 **	0.07	1049	0.97	1.64
[24]	841590.000	0.203	0.225	-1.635	-0.015	-0.020	0.24	674	5.14 **	1.34
[25]	842123.000	0.543	0.563	0.179	0.010	0.054	0.17	759	20.8 ***	1.86
[26]	842129.000	0.327	0.274	-0.239	-0.324 ***	0.407 ***	0.05	959	24.6 ***	1.79
[27]	842199.000	-0.278	-0.320	-0.701	-0.358 ***	0.551 ***	0.05	1027	19.3 ***	1.64
[28]	846693.000	0.373	0.298	2.443 **	-1.003 ***	1.349 ***	0.25	1029	5.17 **	1.92
[29]	846711.000	-0.071	0.003	-0.119	-0.097	0.353 *	0.57	962	97.4 ***	1.68
[30]	847330.000	0.519	0.459	5.028 **	-0.708	2.302 *	0.27	1032	115 ***	1.27
[31]	847989.900	0.077	0.021	-0.216	0.857 ***	-1.569 ***	0.36	1080	12.3 ***	1.63
[32]	847990.000	0.077	0.084	0.141	0.047	-0.195	0.22	1077	5.27 **	1.70
[33]	848110.000	-0.211	-0.212	0.472	-0.096	0.197 *	0.28	985	20 ***	1.72
[34]	848120.000	0.219	0.190	-0.505	-0.455	0.993 *	0.39	1064	14.4 ***	1.21
[35]	848130.900	-0.528	-0.519 **	0.968 *	0.439	-0.438	0.34	1003	58.7 ***	1.31
[36]	848180.190	0.029	0.039	-0.903 **	-0.208 *	0.283 *	0.17	1077	6.92 ***	1.34
[37]	848190.000	-0.280	-0.241	-0.030	0.120	-0.038	0.22	1024	17 ***	1.39
[38]	848210.000	0.296	0.309	1.447	-1.132	1.574	0.66	1017	234 ***	0.76
[39]	848250.000	0.326	0.309	1.208 ***	-0.165 *	0.172	0.60	921	202 ***	1.90
[40]	848299.000	0.300	0.320	0.551	-0.191 **	0.303 *	0.57	877	83.3 ***	1.29
[41]	848310.000	0.784	0.897	-0.042	-1.557 ***	3.114 ***	0.45	1078	0.03	1.24
[42]	848330.200	-0.176	-0.206	1.092 ***	-0.384	1.106 **	0.33	1078	7.19 ***	1.41
[43]	848340.200	0.456	0.523	0.273	-1.000 ***	1.487 ***	0.31	1080	1.46	1.26
[44]	848350.000	0.527	0.407	0.175	-0.635 **	0.687 **	0.39	974	42.3 ***	1.43
[45]	848360.000	0.983	0.986	0.497	-1.006 ***	1.278 ***	0.37	1037	6.49 **	1.48
[46]	848410.000	-0.019	-0.195	1.734 ***	-0.587 *	0.671	0.16	834	3.86 **	1.49
[47]	848590.000	0.142	0.096	-0.709	0.167	0.606	0.19	1033	0.19	1.42
[48]	850110.191	-0.249	-0.141	1.850 *	0.695 ***	-1.286 ***	0.15	980	6.62 **	1.26
[49]	850151.000	-0.002	-0.001	-0.856 *	-0.278	0.629	0.30	1053	5.86 **	1.68
[50]	850300.000	-0.534 **	-0.531 **	0.148	-0.376	0.617 ***	0.19	992	82.9 ***	1.66
[51]	850431.910	-0.301	-0.318	-4.624 **	-0.291	0.172	0.39	907	83.5 ***	1.12
[52]	850440.110	-0.419 **	-0.410 **	1.029	-0.079	-0.005	0.24	988	1.26	1.66
[53]	850440.900	0.512	0.516	-1.107	-0.270	0.230	0.12	1005	14.2 ***	1.54
[54]	850450.000	0.391	0.445	-2.638	-0.018	0.798	0.40	1042	0.78	1.20
[55]	850730.000	0.331	0.350	1.576 ***	-0.236	0.381	0.41	866	2.88 *	1.57
[56]	852290.900	-0.391	-0.354	-2.400	-0.594 **	0.455	0.47	878	121 ***	1.18
[57]	852990.900	-0.522 **	-0.532 **	-2.300	0.124	-0.258	0.40	1004	46.9 ***	0.96
[58]	853222.000	0.122	0.077	0.051	-0.587	1.622	0.47	1007	33.6 ***	1.12
[59]	853223.000	-0.003	-0.037	1.667	-0.324	0.403	0.43	791	32.7 ***	0.99
[60]	853321.000	-0.654 **	-0.467	1.025	-3.529 ***	13.338 ***	0.27	972	16.5 ***	0.85
[61]	853340.000	0.260	0.296	-1.431 **	-1.438 **	4.034	0.31	1027	16.1 ***	1.20
[62]	853400.000	-0.486	-0.530	-1.439	0.990 ***	-1.842 ***	0.35	995	0.52	1.15
[63]	853641.000	0.234	0.276	-0.480	-1.861	12.326	0.19	964	22.7 ***	1.21
[64]	853649.000	-0.012	0.046	0.115	0.398	0.089	0.20	880	0.29	1.34
[65]	853650.900	0.901	0.730	-0.433	2.061 ***	-8.483 ***	0.18	1079	42.8 ***	1.04
[66]	853669.000	0.584	0.586	-0.758	-0.063	1.279	0.32	811	6.86 ***	1.54
[67]	853710.000	0.204	0.170	-1.213 ***	0.157 ***	-0.086	0.26	1079	22.7 ***	1.71
[68]	853890.900	0.352	0.317	1.067	0.027	0.438	0.13	1068	8.43 ***	1.24
[69]	854110.920	-1.531 ***	-1.115 **	0.060	-16.033 ***	98.480 ***	0.28	933	72.4 ***	1.07
[70]	854121.910	-0.319	-0.049	1.204 ***	-1.653 ***	1.714 ***	0.31	965	18.3 ***	1.32
[71]	854129.910	0.630	0.631	4.310	1.463 **	0.933	0.10	903	29.5 ***	1.01
[72]	854140.990	-1.226 **	-1.243 **	3.763	0.003	4.731	0.24	958	46.7 ***	1.07
[73]	854390.000	0.106	-0.203	-2.347	-1.527 ***	2.024 ***	0.22	854	2.78 *	1.68
[74]	854451.910	0.153	0.180	-1.697 *	-0.171	0.580 *	0.25	986	18.5 ***	1.78
[75]	870899.900	-0.148	-0.147	0.187	-0.101	0.156	0.13	1016	24.2 ***	1.14
[76]	900912.000	0.409	0.261	1.119	0.672 ***	-0.558 ***	0.58	708	68.5 ***	1.37
[77]	901380.000	-0.967	-0.797	-0.936	0.848 ***	-0.898 ***	0.39	871	7.33 ***	1.32
[78]	903180.190	0.307	0.280	0.358	-0.196	0.099	0.08	1073	2.39	2.03
[79]	903190.100	-0.241	-0.243	-3.703 ***	0.012	-0.002	0.12	879	2.42	1.71
[80]	961210.000	-0.552	-0.582	-1.105	-0.209	0.173	0.37	829	0.02	1.46

Note: ER(only) and ER are estimated in equation (3) and (4), resectively. Estimates for Wage is suppressed due to space constraint. One-side test of coefficient of ER being greater than zero (or less than unity) with statistical significance at 1% and 5% level are shown respectively by ***and** (or by### and ##). LM is the test for the null of homoskedastic disturbances and DW is the Durbin–Watson statistics for unbalanced panel. For other coefficients, F stat and LM, statistical significance at 1%, 5%, and 10% level are shown respectively by ***, **, and *.

Table 6-a. Market share and marginal cost (male wage), Korea

	HS9	ER(only)	ER	WM	Share*WM	Share^2*WM	Adj R^2	NOB	LM	DW		HS9	ER(only)	ER	WM	Share*WM	Share^2*WM	Adj R^2	NOB	LM	DW
[01]	370790.000	0.149	0.151	4.609 **	0.113	-0.168	0.64	992	59.2 ***	0.64	[41]	848310.000	0.784	0.897	-1.527	-1.275 ***	2.533 ***	0.45	1078	0.07	1.25
[02]	392062.000	-0.355	-0.367	-11.593 ***	-0.268 ***	0.151	0.27	1030	0.26	1.30	[42]	848330.200	-0.176	-0.204	0.328	-0.318 **	0.918 ***	0.33	1078	7.34 ***	1.42
[03]	392099.000	-0.001	-0.106	-12.328 ***	0.375 ***	-0.326	0.38	982	89.6 ***	1.16	[43]	848340.200	0.456	0.522	3.221 *	-0.820 ***	1.212 ***	0.31	1080	1.46	1.26
[04]	392690.000	0.033	0.039	3.723 *	0.221	-0.835 **	0.14	1080	2.48	1.40	[44]	848350.000	0.527	0.407	6.366 ***	-0.524 ***	0.563 ***	0.39	974	41.9 ***	1.43
[05]	401693.000	0.047	0.059	5.296 ***	-0.256 **	0.301	0.42	1073	0.08	1.53	[45]	848360.000	0.983	0.977	5.932 ***	-0.836 ***	1.065 ***	0.37	1037	7.17 ***	1.49
[06]	401699.000	0.022	0.176	-1.538	-0.931 ***	1.349 ***	0.41	1080	7.24 ***	1.29	[46]	848410.000	-0.019	-0.201	-4.525 *	-0.485 ***	0.556 **	0.16	834	4.06 **	1.49
[07]	482390.900	-0.517	-0.402	5.745 ***	-0.295 **	0.375	0.13	1022	0.6	1.48	[47]	848590.000	0.142	0.096	7.661 ***	0.128	0.488 **	0.19	1033	0.2	1.42
[08]	491110.000	-0.326	-0.403	-3.153	-0.266	0.536 *	0.08	742	2.21	1.98	[48]	850110.191	-0.249	-0.141	4.676 ***	0.552 ***	-1.030 ***	0.15	980	6.79 ***	1.26
[09]	591190.000	0.602	0.637	2.805	-0.545 ***	0.527 ***	0.43	859	63.6 ***	1.24	[49]	850151.000	-0.002	0.000	-3.420	-0.238	0.535	0.30	1053	5.93 **	1.68
[10]	731511.900	-0.013	0.037	0.163	-0.196 ***	0.260 **	0.27	983	203 ***	1.36	[50]	850300.000	-0.534	-0.532	2.299	-0.301 **	0.493 *	0.19	992	82.9 ***	1.66
[11]	731815.190	0.593	0.684	3.195	-0.501 ***	0.448 ***	0.18	910	0.83	1.52	[51]	850431.910	-0.301	-0.320	-4.571	-0.263 **	0.150	0.39	907	82.7 ***	1.12
[12]	731815.900	0.096	0.124	-0.870	0.179	0.054	0.26	958	9.88 ***	1.35	[52]	850440.110	-0.419	-0.412	-1.174	-0.060	-0.012	0.24	988	1.28	1.66
[13]	731816.900	-0.089	-0.065	6.433 *	-0.302 **	0.079	0.17	894	20.6 ***	1.53	[53]	850440.900	0.512	0.515	-2.914	-0.213 ***	0.179 *	0.12	1005	14 ***	1.54
[14]	731822.000	0.141	0.238	-8.400 **	-0.518 ***	0.646 ***	0.23	754	4.08 **	1.08	[54]	850450.000	0.391	0.451	-4.805 *	-0.025	0.734	0.40	1042	0.74	1.20
[15]	732020.000	-0.659	-0.507	2.288	-0.679 ***	0.951 ***	0.16	1024	37.1 ***	0.99	[55]	850730.000	0.331	0.350	-1.880	-0.205 *	0.332 *	0.41	866	2.94 *	1.57
[16]	732690.000	-0.439	-0.456	-0.285	0.063	0.071	0.95	991	4.01 **	1.68	[56]	852290.900	-0.391	-0.358	3.752	-0.453 ***	0.291	0.47	878	120 ***	1.18
[17]	820559.000	-0.299	-0.316	10.735 ***	-0.557 ***	0.744 ***	0.37	891	21.8 ***	1.84	[57]	852990.900	-0.522	-0.533	-28.340 ***	0.100	-0.186	0.40	1004	46.8 ***	0.96
[18]	820890.000	-0.124	0.051	21.573 ***	-1.135 ***	2.631 ***	0.24	949	39.7 ***	1.76	[58]	853222.000	0.122	0.076	-9.622 ***	-0.480 **	1.305	0.47	1007	33.7 ***	1.12
[19]	840991.100	-0.281	-0.281	-7.457 ***	-0.351 ***	0.150	0.31	936	5.77 **	1.13	[59]	853223.000	-0.003	-0.042	-29.775 ***	-0.291 *	0.372	0.43	791	32.8 ***	0.99
[20]	841330.000	0.284	0.302	7.329 ***	-0.142 **	0.294 ***	0.25	897	0.97	1.37	[60]	853321.000	-0.654	-0.469	16.487 ***	-2.841 ***	10.733 ***	0.26	972	16.5 ***	0.85
[21]	841360.100	0.016	0.061	-2.811 **	-0.237 ***	0.412 ***	0.50	1076	34 ***	1.43	[61]	853340.000	0.260	0.292	-3.533	-1.142 ***	3.201 ***	0.31	1027	15.8 ***	1.20
[22]	841391.000	0.166	0.171	-3.680 **	-0.095	0.084	0.44	1018	57.7 ***	1.35	[62]	853400.000	-0.486	-0.533	-4.588	0.810 ***	-1.504 ***	0.35	995	0.53	1.15
[23]	841459.000	-0.280	-0.261	5.339 ***	-0.135 **	0.206 ***	0.07	1049	0.93	1.64	[63]	853641.000	0.234	0.278	-1.971	-1.523 ***	10.143 ***	0.19	964	22.5 ***	1.21
[24]	841590.000	0.203	0.226	2.618	-0.006	-0.023	0.24	674	5.08 **	1.34	[64]	853649.000	-0.012	0.047	3.961	0.344 ***	0.039	0.20	880	0.23	1.34
[25]	842123.000	0.543	0.562	2.238	0.007	0.045	0.17	759	20.8 ***	1.86	[65]	853650.900	0.901	0.731	1.503	1.669 ***	-6.919 ***	0.18	1079	41.9 ***	1.04
[26]	842129.000	0.327	0.274	-3.880 **	-0.258 ***	0.328 ***	0.05	959	24 ***	1.79	[66]	853669.000	0.584	0.589	-9.825 **	-0.034	0.984 ***	0.32	811	6.77 ***	1.54
[27]	842199.000	-0.278	-0.319	0.168	-0.283 ***	0.439 ***	0.05	1027	19.1 ***	1.64	[67]	853710.000	0.204	0.170	1.278	0.132 **	-0.077	0.26	1079	22.7 ***	1.71
[28]	846693.000	0.373	0.309	-3.543	-0.809 ***	1.092 ***	0.25	1029	4.93 **	1.91	[68]	853890.900	0.352	0.316	16.179 ***	0.007	0.394 *	0.13	1068	8.66 ***	1.24
[29]	846711.000	-0.071	0.010	-5.272 ***	-0.096	0.307 ***	0.57	962	98.8 ***	1.67	[69]	854110.920	-1.531	-1.095	6.005	-13.069 ***	80.079 ***	0.28	933	71.8 ***	1.07
[30]	847330.000	0.519	0.459	-11.487 ***	-0.581 ***	1.904 ***	0.27	1032	116 ***	1.27	[70]	854121.910	-0.319	-0.041	-12.337 ***	-1.362 ***	1.418 ***	0.32	965	18.3 ***	1.32
[31]	847989.900	0.077	0.020	0.725	0.714 ***	-1.296 ***	0.36	1080	12.7 ***	1.63	[71]	854129.910	0.630	0.637	-0.586	1.214	0.862	0.10	903	29.7 ***	1.01
[32]	847990.000	0.077	0.085	-0.179	0.050	-0.178	0.22	1077	5.33 **	1.70	[72]	854140.990	-1.226 **	-1.251 **	19.536 ***	0.079	3.629	0.24	958	46.2 ***	1.07
[33]	848110.000	-0.211	-0.212	-2.701 **	-0.076	0.161 *	0.28	985	20 ***	1.72	[73]	854390.000	0.106	-0.209	-19.265 ***	-1.254 ***	1.644 ***	0.22	854	2.75 *	1.68
[34]	848120.000	0.219	0.195	-1.978	-0.392 ***	0.834 ***	0.40	1064	14.6 ***	1.21	[74]	854451.910	0.153	0.179	10.554 ***	-0.141	0.483 ***	0.25	986	18 ***	1.78
[35]	848130.900	-0.528	-0.524	-1.064	0.348 ***	-0.346 **	0.34	1003	59.2 ***	1.30	[75]	870899.900	-0.148	-0.147	3.966 ***	-0.076	0.116	0.13	1016	24 ***	1.14
[36]	848180.190	0.029	0.039	6.449 ***	-0.172 ***	0.233 **	0.17	1077	6.8 ***	1.34	[76]	900912.000	0.409	0.253	9.942 ***	0.564 ***	-0.467 ***	0.59	708	65.5 ***	1.39
[37]	848190.000	-0.280	-0.243	0.389	0.089	-0.024	0.22	1024	17.1 ***	1.39	[77]	901380.000	-0.967	-0.794	13.892 ***	0.694 ***	-0.740 ***	0.39	871	7.58 ***	1.32
[38]	848210.000	0.296	0.303	-2.061	-0.729 ***	0.955 ***	0.66	1017	233 ***	0.75	[78]	903180.190	0.307	0.284	5.900 ***	-0.141	0.057	0.08	1073	2.4	2.03
[39]	848250.000	0.326	0.303	1.521	-0.176 **	0.182 *	0.60	921	203 ***	1.91	[79]	903190.100	-0.241	-0.244	5.452	0.023	-0.021	0.12	879	2.37	1.71
[40]	848299.000	0.300	0.323	12.035 ***	-0.171 **	0.266 **	0.57	877	84.2 ***	1.30	[80]	961210.000	-0.552	-0.582	-14.495 ***	-0.175	0.149	0.37	829	0.02	1.46

Note: ER(only) and ER are estimated in equation (3) and (4), resectively. Estimates for Gas is suppressed due to space constraint. One-side test of coefficient of ER being greater than zero (or less than unity) with statistical significance at 1% and 5% level are shown respectively by ***and** (or by### and ##). LM is the test for the null of homoskedastic disturbances and DW is the Durbin–Watson statistics for unbalanced panel. For other coefficients, F stat and LM, statistical significance at 1%, 5%, and 10% level are shown respectively by ***, **, and *.

Table 7. Changes in average ERPT

	Korea		China		Taiwan	
	75.0		63.8		81.3	
percentage point change	increase	decline	increase	decline	increase	decline
5	20.0	20.0	27.5	8.8	15.0	21.3
10	16.3	11.3	16.3	7.5	8.8	20.0
15	8.8	8.8	12.5	6.3	6.3	16.3
20	3.8	3.8	7.5	3.8	2.5	13.8

	HongKong		GMN		US	
	73.8		76.3		75.0	
percentage point change	increase	decline	increase	decline	increase	decline
5	7.5	21.3	11.3	15.0	3.8	8.8
10	6.3	11.3	5.0	6.3	1.3	3.8
15	3.8	5.0	1.3	5.0	1.3	2.5
20	2.5	2.5	0.0	1.3	1.3	2.5

Note: The figures just below the name of importing countries indicate the percentage of commodities showing time-varing ERPT behaviors. The figures under either 'increase' or 'decrease' indicate the percentage of commodities with corresponding percentage point changes in ERPT.