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Pricing-To-Markets and Firm Size: Survey Evidence from Swiss Exporters

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Pricing-To-Markets and Firm Size: Survey Evidence from Swiss Exporters

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Survey information on Swiss exporters is used to test the hypothesis that firm-specific factors, in particular firm size, are important determinants of pricing-to-market (PTM). The survey asked exporters whether they set different prices across markets and, if so, whether price segmentation occurred because of pricing conditions in the local market or other factors. The empirical analysis is based on a probit model that regresses a binary-choice variable of PTM on firm size and other control variables. The key result is that firm size and PTM are positively and significantly correlated. This result is robust across different PTM classifications, regression specifications, export destinations, and industrial sectors.

JEL Codes: F10, F14.
Keywords: Pricing-to-market, Firm size.

1 Introduction

Do firm-specific factors explain why some companies price-discriminate across export markets and others do not? Two decades of micro-based theoretical research in international macroeconomics have shown that our thinking on crucial issues like the desirability of fixed versus flexible exchange rates can be strongly influenced by specific assumptions about the price-setting behavior of firms.[1] Traditional empirical research, however, has primarily emphasized country- and sector-specific factors to explain international price discrimination (GOLDBERG and KNETTER 1997). This paper, in contrast, reports on the importance of firm size.

There are a number of potential reasons why large exporters are more likely to set different prices in different markets than small exporters. At the most basic level, basic microeconomics teaches us that firms need a sufficient degree of market power to be able to act as price-setters (and not price-takers). Without market power, there will be no price discrimination, be it at a na-

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1 OBSTFELD and ROGOFF (2000), ENGEL (2000) and DEVEREUX and ENGEL (2003) are just a few examples.

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tional or international level. The degree of market power, of course, depends not only on a firm's absolute size; what matters most of all, is its size relative to the size of the market (and possibly the size of competitor firms).

A second link between firm size and international price discrimination comes from the literature examining international trade and growth theories on the basis of firm-level evidence. A widely reported result in this literature is that not all firms are equally likely to export to foreign markets. Whether they do may depend on their productivity but also on their size (see, for instance, TYBOUT 2003, VERMEULEN 2004 and WAGNER 2005). Just as larger firms are more likely to export at all, larger exporters tend to sell to more markets, whereas small firms frequently concentrate on a single market or buyer.[2] The more markets a firm supplies, the greater is the likelihood that there is at least one market with sufficiently distinct characteristics to induce the firm to set a different price there.

Third, larger exporting firms are more likely to bear the transaction costs associated with international price discrimination. Such costs are not usually addressed in the theoretical literature, but matter in practice, since international price discrimination requires detailed knowledge of local market conditions. Moreover, by investing in market-specific branding and marketing, firms can influence the degree of market segmentation (FRIBERG 2001), which itself is a precondition for price discrimination. Since the investment in both information gathering and segmentation is largely independent of sales volume and thus more like a fixed than a variable cost, larger firms will be more frequently willing to undertake it.[3]

To test the hypothesis that firm-specific factors, in particular firm size, are important determinants of international price discrimination, we use cross-sectional information from a recent survey of Swiss exporters. This survey addressed a broad range of issues related to the price-setting behaviour of exporters. A summary of the survey results can be found in FISCHER, LUTZ and WÄLTI (forthcoming). Here we only report on one aspect covered in the survey, international price discrimination.

2 EATON, KORTUM and KRAMARZ (2004), for instance, show that in a sample of French manufacturing firms more than a third export to one market only. Counting only those firms that export at all, more than 60% export to one market only.

3 A related 'stylized fact' that has sometimes been attributed to transaction costs is the positive correlation between firm size and export intensity (see AVENIR SUISSE 2005 for evidence on this correlation for Switzerland). Several recent contributions, however, suggest that this relationship may be driven by other firm-specific factors (see, e.g., VERWAAL and DONKERS 2002; WAGNER 2003 and KALAFSKY 2004).

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While there are a handful of studies that address questions related to international price segmentation on the basis of survey data, little emphasis has been placed on firm size.[4] The Swiss survey asked exporting firms whether they set different prices across their export markets and, if so, whether price segmentation occurred because of pricing conditions in the local market or other factors. As in the original literature on international price discrimination (e.g. KRUGMAN 1987), we refer to this phenomenon as pricing-to-markets (PTM). In principle, this definition is compatible with both producer- and local-currency pricing (PCP and LCP, respectively).

This paper uses a probit model to regress a binary-choice variable of international price discrimination on firm size and other control variables. The main empirical finding is that firm size and PTM are positively and significantly correlated. To distinguish between the three different possible reasons why firm size might influence PTM, we control for both how export-oriented a firm is (its 'export intensity') and its market share. It turns out that firm size remains highly significant even in the presence of these variables.

We interpret this finding as fairly strong evidence that the transaction cost explanation is driving our results. We also investigate whether there is a difference between firms that export mainly to the Euro area and those that mainly export to other countries. Our results provide weak evidence that firms whose main export market is in the Euro area tend to be less likely to engage in PTM. At the same time, however, firm size plays a bigger role for these firms in influencing the choice of whether to price-discriminate across export markets or not. These results are robust across different PTM classifications, regression specifications, and industrial sectors.

The paper is organized as follows. Section 2 discusses the survey data and how we define the PTM variable. Section 3 presents our baseline econometric results. Section 4 performs a number of robustness checks and section 5 others conclusions.

4 See FRIBERG and WILANDER (2007) and the studies listed in FABIANI, LOUPAIS, MARTINS and SABBATINI (2007). One exception is LÜNNEMANN and MATHÄ (2006, Table 5) who show that, in the case of Luxembourg, larger firms set different prices across countries more frequently than smaller firms, but this result is not tested econometrically.

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2 The Export Pricing Survey and Definition of PTM

Information on the pricing behavior of Swiss exporters is taken from the 2006 Survey on Export Pricing conducted by the KOF Swiss Economic Institute at the request of the Swiss National Bank (see FISCHER, LUTZ and WÄLTI, forthcoming). The KOF regularly conducts surveys on economic conditions in Switzerland on the basis of questionnaires sent to Swiss firms, the so-called *KOF Economic Barometer* surveys. These are based on a random sample of Swiss firms, stratified by size and sectors. The one-off questionnaire on Export Pricing was distributed in August 2006 to the subset of regular participants that were known to actually export at least some of their products. In addition to price segmentation, the survey asked questions on export destination, market share, type of buyer, and currency invoicing. The Export Pricing survey was sent to 1,421 firms in industry, services (hotel and restaurant) and the financial sector, located throughout Switzerland. In this paper, we focus solely on the 826 firms in the industrial sector that were included in the survey. Among these industrial firms, 543 responded to the questionnaire, corresponding to a response rate of 65.7%.

The construction of the binary choice variable for PTM is based on two questions in the survey. The first asked:

> If your firm's main export product in 2005 was delivered to different export destinations, did the price measured in CHF differ between these markets?

Of the 531 valid responses from industrial firms to this question (i.e., 12 of the 543 survey respondents did not answer this particular question), 268 firms answered affirmatively.[5] This corresponds to 50.5% of the sample. In the recent Euro-area price-setting surveys (FABIANI, DRUANT, HERNANDO, KWAPIL, LANDAU, LOUPIAS, MARTINS, MATHA, SABBATINI, STAHL and STOKEMAN 2006, 2007) three of the country surveys also asked firms about PTM. In Belgium and Spain, 57.2% and 53% of firms answered that they set different prices across export markets. These two percentages are very similar to the Swiss survey, whereas the percentage of firms in Luxembourg, at 31%, was somewhat lower.

5 Note that the question refered to the price received by the exporting firm. Depending on who the product was sold to, it could be a price at the border or a consumer price.

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If the survey respondent answered yes, a second question sought to identify whether price segmentation resulted from differences in costs or pricing conditions across national markets. The exporters were asked:

> Please state whether the following factors were either very important, somewhat important, or unimportant in explaining price differences across your export markets: i) exchange rate fluctuations, ii) transport costs, iii) local costs (i.e., for product adaptation, marketing, import duties, regulation, taxes etc.), iv) prices of competitors, v) copyright and/or patent protection, vi) buyer preferences, and vii) income differences.

Table 1 presents the responses to the second question on price segmentation. The most important reason for price differences across markets was 'prices of competitors'. This was also the most important reason cited by firms in the three Euro-area countries questioned on international price differences (see FABIANI DRUANT, HERNANDO, KWAPIL, LANDAU, LOUPIAS, MARTINS, MATHA, SABBATINI, STAHL and STOKEMAN 2006, Table 5). The next most frequently cited reasons among Swiss exporters were buyer preferences, transport costs, exchange rate fluctuations, and local costs; each of these were deemed to be very important by at least 20% of the firms. Few firms cited copyright/patent protection and income differences as very important.

Table 1: Why does price segmentation occur?

	Very important	Somewhat important	Not important
Exchange rate fluctuations	24.8%	47.2%	28.0%
Transport costs	26.2%	50.8%	23.1%
Costs in local market	21.5%	47.0%	31.6%
Prices of competitors	74.5%	21.2%	4.3%
Copyright/patent protection	5.3%	21.0%	73.7%
Buyer preferences	29.0%	45.6%	25.4%
Income differences	11.3%	31.3%	57.5%

Notes: The table summarizes the responses of the 531 firms in our sample that set different prices across export markets. Multiple answers were permitted.

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The survey on Export Pricing also asked firms to indicate in which currencies they invoiced their customers in their main export market. While the invoicing currency does not necessarily have to correspond to the price-setting currency, empirical evidence suggests that the two are usually the same (FRIBERG and WILANDER 2006). Interestingly, 52% of the firms in our sample indicated that they used a mix of LCP and PCP in their main export market. In other words, some buyers in the main export market were invoiced in Swiss francs, others in their own currency. Of the rest of the exporting firms in our survey, 28.4% were pure LCP setters and 16.6% pure PCP setters. The remainder invoiced in vehicle currencies.[6] What is interesting about these results is that it is not just LCP firms that set different prices across export markets, but also others. In fact, focusing strictly on LCP firms would have unnecessarily restricted our sample size.

To proceed, we need to define a PTM variable. A simple choice would be to define all those firms as PTM firms that indicated in the survey that they set different prices across export markets. However, this would also include cases where these price differences are the result of differences in transport costs, i.e., between export markets that are close and those that are further away. Different prices across export markets could also reflect differences in local, i.e., export market specific, cost components. However, PTM behavior relates to firms setting prices according to local market conditions. Thus, in our econometric analysis, we define PTM firms to be those that satisfy two conditions. First, they indicated that they charge different prices across export markets. Second, they cited *at least one* of the following to be a 'very important' reason for these price differences: 'prices of competitors', 'exchange rate fluctuations', 'buyer preferences', or 'income differences'. In total, 220 out of a total of 531 firms in the sample were classified as PTM firms on this metric.

3 Baseline Results

To determine whether PTM is coincident with firm size, we regress the following probit specification:

Equation (1): $\Pr(PTM = 1 \mid x) = \Phi(x'\beta)$,

6 The survey questions were specifically addressed at the main export market. We thus do not have information on whether the prevalence of dual pricing behavior (i.e., PCP and LCP), strict PCP, strict LCP or vehicle currencies applies to other export markets, too.

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where the dependent variable, PTM, is +1 if firm i price discriminates between markets according the definition described in the previous section, 0 otherwise. The function (.) denotes the standard normal distribution and x contains the explanatory variables.

Our key explanatory variable is firm size, which is measured as the log of the number of employees. Initially, the regression model contains three additional control variables. First, a measure of export intensity is included to account for the possibility that a more export-oriented firm is more likely to set different prices across export markets. Since export intensity has often been found to correlate positively with firm size in the literature (see footnote 3), we need to include it to isolate the direct firm size effect. Without it, firm size might otherwise indirectly capture the influence of export intensity on PTM behavior. Our measure of export intensity is based on the share of exports in firm revenue and provided by KOF as a three-way categorical variable: exports relative to sales revenue less than 33%, between 34% and 66%, and above 66%.

The second additional control variable is a firm's share in its export market. This variable is included to control for the degree of market power in the destination market. It is based on another question in the export pricing survey where firms were asked to place their firm's market share in one of five categories: less than 1%, 1–5%, 6–25%, 26–50%, and more than 50%. The third additional explanatory variable is distance from the border. This is included since firms closer to the border might find it easier to collect the information necessary for PTM. Equation (1) should not be interpreted as a structural equation. Rather, we are interested in the coincidence between firm size and PTM, in particular whether larger firms are more likely to price their products to the local market than smaller firms.

Table 2 presents our baseline results. Column 2.1 shows the results of a simple regression between PTM and firm size. The coefficient on firm size is positive and highly significant. Larger firms are thus more likely to be engaged in PTM across export markets. The regression summarized in column 2.2 adds the three additional control variables discussed above. Again, firm size is positively and significantly correlated with the likelihood of PTM. Export intensity has a positive coefficient that is significant at the 10% significance level. This implies that firms with a stronger export focus are more likely to set different prices across export markets, just as our earlier theoretical consideration suggested. Distance to the border has the expected sign, i.e., the further from the border a firm is located the less likely

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it is to price-differentiate across export markets, but the estimated correlation is statistically insignificant. The effect of export market share is also statistically insignifcant (and has the wrong sign).

Table 2: Baseline probit regressions of PTM on firm size

	2.1	2.2	2.3	2.4
Firm size (all)	0.229* (0.043)	0.220* (0.045)		
Firm size (Euro area)			0.274* (0.053)	0.261* (0.056)
Firm size (non-Euro area)			0.128+ (0.074)	0.141+ (0.075)
Export market share		-0.045 (0.049)		-0.053 (0.050)
Export intensity		0.138+ (0.077)		0.129+ (0.077)
Distance to border		-0.086 (0.091)		-0.085 (0.092)
Euro area dummy			-0.799+ (0.418)	-0.646 (0.429)
Euro effect (p-value)			0.121	0.206
DOF	521	494	519	492
Cases correct	320	306	319	302
Pseudo R^2	0.054	0.061	0.062	0.066

Notes: Standard errors (robust) are shown in parentheses. DOF denotes degrees of freedom, * significance at the 5% and + significance at the 10% level. The p-values refer to likelihood ratio tests. Each regression also contains a constant term (not shown).

Next, to control for export destination, we examined whether there are systematic differences between firms that stated that a country in the Euro area is their 'main export market' and those that named other destinations.[7] This sample split takes account of the proposition that PTM behavior is less likely within a currency union. There are a number of reasons to suspect that this might be the case. The European Commission, for instance, frequently argued in the run-up to the introduction of the Euro that a common currency raises transparency and comparability for consumers. If true, this implies that arbitrage should have become easier with the common currency, which, in turn, would have reduced a firm's ability to price-to-market. More formally, FRIBERG (2001) shows in a theoretical model that a com-

7 Nearly 73% percent of industrial firms in the survey had their main export market in the Euro area.

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mon currency lowers the incentive for firms to invest in the market segmentation necessary for PTM. DEVEREUX, ENGEL and TILLE (2003) argue that third-country exporters will tend to view a monetary union as a single marketing area and therefore charge a common price. BACCHETTA and VAN WINCOOP (2005) show that the currency of a newly formed monetary union will be used more extensively for price setting than the currencies that were replaced by it, reducing the likelihood of PTM.

The corresponding results are presented in the last two columns of Table 2, first without and then with the additional control variables. Our main result holds: firm size is positively and significantly correlated with the likelihood of PTM. The 'Euro area dummy' has the expected sign. This is in line with the theoretical predictions discussed in the previous paragraph that PTM would be less prevalent within a currency union. However, the Euro-area dummy is not very precisely estimated; it is only statistically significant in the regression without the additional control variables.

In this second set of regressions, we also examine whether the correlation between firm size and PTM is different for firms whose main export market is in the Euro area. We find that the estimated coefficient is around twice as large for firms with their main export market in the Euro area. This suggests that firm size could be an even more decisive determinant of PTM within a currency union, i.e., smaller firms are even less likely to price-to-market in a currency union. However, since the difference between the two firm size coefficients is not statistically significant (see the row labeled 'Euro effect [p-value]'), we cannot be sure of this result with a high degree of precision. The results for the other control variables are similar to those in the first two columns of Table 2. Of the three variables, export intensity and distance to the border have the expected sign, but only export intensity is statistically significant.

4 Robustness Checks

In this section we present estimation results from a number of alternative specifications to examine whether the strong correlation between firm size and PTM reported in the previous section is a robust result. First, we examine whether our results are affected by the way the PTM variable is defined. Next, we control for sectoral differences. Lastly, we briefly discuss the possible endogeneity of firm size.

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4.1 Definition of PTM

To be classifed as PTM in the baseline regressions, a firm had to i) set different prices across export markets and ii) indicate that these differences were significantly influenced by conditions in local markets. The second criterion was kept fairly broad, in that firms could base their different prices on either prices of competitors, exchange rate fluctuations, local preferences, or income differences. To examine whether our results are robust, we re-estimated our probit model using two alternative classifications of PTM, one broader and one narrower than in the baseline regressions. First, we used the widest definition possible by classifying all those as PTM firms that set different prices across export markets, irrespective of the precise reasons given. Second, we narrowed the PTM classification down to only those firms that set different prices and stated that 'prices of competitors' were a very important reason. In terms of numbers, the wider of these two alternative classifications contains 268 firms, the narrower 190 firms, compared to 220 firms in our baseline specification.

The results for these two alternative measures of PTM are presented in Table 3. We only report results for the specifications where we include the additional explanatory variables, with and without the Euro area effects. Changing the criteria for determining PTM firms does not influence the estimated relationship between firm size and PTM. The overall correlation between PTM and firm size reported in columns 3.1 and 3.3 is again positive and highly significant. The effect of firm size is stronger for firms whose main export market is in the Euro area, but the difference to firms with other main export markets is not statistically significant (see columns 3.2 and 3.4). There are only two minor differences compared to our baseline estimates in Table 2. First, the correlation between PTM and firm size for firms whose main export market is not in the Euro area is a little stronger and significant at the five rather than the 10 percent significance level. Second, the correlation between PTM and export intensity is not statistically significant in one of the four regressions in Table 3.

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Table 3: Results with different definitions of PTM

	3.1	3.2	3.3	3.4
PTM criterion:	Price differences		Price differences and prices of competitors 'very important'	
Firm size (all)	0.218* (0.045)		0.232* (0.047)	
Firm size (Euro area)		0.238* (0.056)		0.272* (0.059)
Firm size (non-Euro area)		0.179* (0.076)		0.160* (0.077)
Export market share	0.014 (0.049)	0.014 (0.049)	-0.064 (0.050)	-0.069 (0.051)
Export intensity	0.136+ (0.075)	0.133+ (0.075)	0.130+ (0.079)	0.122 (0.079)
Distance to border	-0.007 (0.086)	-0.006 (0.087)	-0.129 (0.097)	-0.129 (0.098)
Euro area dummy		-0.274 (0.427)		-0.583 (0.408)
Euro effect (p-value)		0.526		0.242
DOF	500	498	490	488
Cases correct	302	304	323	325
Pseudo R^2	0.065	0.065	0.065	0.068

Notes: Standard errors (robust) are shown in parentheses. DOF denotes degrees of freedom, * significance at the 5% and + significance at the 10% level. The p-values refer to likelihood ratio tests. Each regression also contains a constant term (not shown).

4.2 Controlling for sectoral differences

Differences between sectors could matter in two important ways. On the one hand, the empirical literature has frequently found that exchange rate pass-through (EPT) differs across sectors and industries.[8] It is therefore possible that the strong correlation between PTM and firm size could be due to an omitted variable bias. If firm size varies systematically across sectors, our results so far might be picking up a sectoral effect. To examine this possibility, we include sectoral dummy variables and test whether there are significant differences between them. On the other hand, it is also possible that

8 It is important to note that, while incomplete EPT is highly indicative of PTM, this does not hold vice versa. The reason is that PTM is a necessary pre-condition for incomplete EPT, but not a sufficient one (GOLDBERG and KNETTER 1997). Our evidence on the determinants of PTM should thus not be generalized to the degree of exchange rate pass-through (EPT). However, it is possible that the same determinants apply to both PTM and EPT. If true, and firm size is also related to the degree of EPT, then differences in the distribution of firm size could be yet another explanation for why EPT appears to differ both across sectors and markets, and why it varies over time.

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the effect of firm size on PTM varies across sectors. Such a finding would not contradict our baseline result but shed additional light on the relationship between PTM and firm size. To see whether this is indeed the case, we have also estimated separate correlations between PTM and firm size for each sector.

The corresponding results are presented in Table 4. These estimates are based on the baseline regression shown in column 2.2 of Table 2, but now with additional sectoral variables. The dependent variable is our original PTM variable. We only report the coefficient on firm size and p-values for tests of the sectoral differences described in the previous paragraph. The row labeled 'Sectoral dummies (p-value)' refers to a likelihood ratio test of the null hypothesis that there are no sectoral differences in the likelihood of PTM. At the bottom of the table, the row labeled 'Firm size by sector (p-value)' is based on a likelihood ratio test of the null hypothesis that the effect of firm size on PTM does not differ across sectors. Note that the diagnostics reported in the table relate to the regression with sector-specific dummy variables.

Table 4: PTM, firm size and sectoral differences

	4.1	4.2	4.3	4.4	4.5
Firm size	0.203* (0.046)	0.204* (0.047)	0.192* (0.048)	0.218* (0.054)	0.178* (0.064)
Sectoral dummies (p-value)	0.890	0.263	0.260	0.589	0.574
Number of 2-digit sectors in sample	5	21	14	8	4
DOF	490	474	461	380	272
Cases correct	304	328	315	260	185
Pseudo R^2	0.059	0.107	0.093	0.068	0.044
Firm size by sector (p-value)	0.520	0.303	0.341	0.763	0.817

Notes: All the results in this table except the bottom row refer to regressions with additional sectoral dummy variables. Standard errors (robust) are shown in parentheses. DOF denotes degrees of freedom, * significance at the 5% and + significance at the 10% level. The p-values refer to likelihood ratio tests. Each regression also contains a constant term and the three additional exogenous variables (not shown). See the main text for more details. The p-values in the bottom row are based on separate regressions where the effect of size is allowed to differ by sector.

Based on two-digit sectoral information provided by KOF, we experimented with various groupings. Overall, the firms in the sample operate in 21 different sectors. However, the number of firms per sector varies signifi-

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cantly (from 2 for electric instruments to 113 for machine industry). To start with, we grouped firms into five broad sectoral categories with a similar number of observations: chemistry and plastics (97 observations); metals (98); machinery (113); electric, electronic, and precision instruments (110); and other sectors (125). The reports for these groupings are shown in column 4.1. In contrast, the results in column 4.2 are based on the maximum number of two-digit sectors in our sample, including those where there are only very few observations. The remaining three columns of Table 4 report results when we only consider samples where the sectors have at least 10, 20, or 50 observations each. This reduces the number of sectors from 21 to 14, 8, and 4 sectors, respectively.

The results in Table 4 reveal that our main result is not due to omitted sectoral effects. The correlation between PTM and firm size is positive and significant throughout. The size of the estimated coefficients on firm size is very similar to the baseline results. Furthermore, LR tests of the hypothesis that there are no differences across sectors are not rejected in any of the specifications in Table 4. Also, there is no indication that the correlation between PTM and firm size differs significantly by sector; all the p-values in the bottom row indicate that the hypothesis of equal coefficients is not rejected for any of the sectoral groupings we have examined.

4.3 Possible endogeneity of firm size

We have been careful to stress that the relation between PTM and firm size uncovered by our results is a *correlation*. We are not in a position to ascertain that there is indeed a *causal* relationship that runs from firm size to PTM. There is also the possibility of a reverse relationship. If larger firms are in a better position to PTM due to the transaction cost explanation offered in the introduction, it is conceivable that firms that engage in PTM hire additional staff to do so more effectively. In this case there is also a positive correlation between firm size and PTM, but the causality would run the other way.

It is not possible to examine this possibility directly as we do not have any excluded instruments due to the survey nature of our data. However, we offer two pieces of circumstantial evidence in support of our original hypothesis, i.e., that the positive correlation between firm size and PTM reflects the importance of the former for the latter, and not vice versa. First, the employment data we use as our measure of firm size tends to predate

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our survey on PTM. The employment figures are gathered for all firms by KOF every five years, with only irregular updates for specific firms when the number of employees changes significantly in the interim. The last full update took place in 2003, so most of the firm size observations precede our PTM survey by three years. There is thus little potential for reverse causality in our estimates.

Second, we undertook a further robustness check where we re-classified firms into three groups on the basis of the number of employees: small firms (less than 50 employees), medium-size firms (between 50 and 249 employees), and large firms (250 and more employees). The rationale behind this is that, even if there is the possibility that PTM firms tend to employ more people, this effect will be much reduced when the firms are grouped this way. The increase in employees would have to be quite drastic, or the firm very near the group threshold, for the firm to switch category as a result. We reestimated several of our previous regression specifications using this newly defined three-way categorical firm size variable. Since none of our results[9] changed due to this reclassification of firm size, we take this as further circumstantial evidence that the causality is more likely to run from firm size to PTM than vice versa.

5 Concluding remarks

In this paper, we have used survey evidence on Swiss exporting firms to test the hypothesis that firm-specific factors, in particular firm size, are important determinants of PTM. The survey, undertaken in August 2006, asked exporters whether they set different prices across markets and, if so, whether price segmentation occurred because of pricing conditions in the local market or other factors. The econometric analysis was based on a probit model that regresses a binary-choice variable of PTM on firm size and other control variables. The key result is that firm size and PTM are positively and significantly correlated. This result is robust across different PTM classifications, regression specifications, export destinations, and industrial sectors. Firm size thus helps to explain why some exporters pursue PTM strategies and others do not. Since our results hold when we control for both a firm's export intensity and its market share, we view our results to be highly supportive of the transaction cost explanation for why firms size matters for PTM.

9 Details are available on request.

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