

Pricing-to-market as an Example of Price Differentiation in European Markets

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Abstract

The aim of the research is to assess the degree of the pricing-to-market (PTM) strategy used in selected European countries, focusing on selected groups of consumer goods.

The study uses a literature review in the field of macroeconomics and international finance, as well as statistical and econometric methods.

The results of the research confirmed the occurrence of PTM in selected European countries, although the level differed significantly between countries. There is a positive correlation between the level of PTM and a country's level of economic development. The highest PTM levels occurred for homogeneous rather than heterogeneous consumer goods.

Our findings are extremely important, especially from the perspective of international companies. Understanding the elasticity of demand in different markets helps businesses set prices that maximize revenue. Setting prices too low or too high can affect how a brand is perceived in the market. By employing a PTM strategy, businesses can balance profitability with market competitiveness.

To date, no comprehensive research has been conducted into PTM strategies in European markets. Therefore, this research fills the gap in this area, constituting a significant contribution to empirical research in the field of pricing strategies.

Keywords: pricing-to-market, pricing strategy, price differentiation

JEL: D4, L11, P42



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Introduction

Businesses use pricing strategies to determine and alter the cost of their goods and services, with competitive pricing, value-based pricing, and markup pricing all prevalent pricing tactics. International pricing strategies entail determining the costs of goods and services for various overseas markets. Businesses going global need to select a pricing plan that fits the needs of the local market while also being in line with their overarching business objectives (Victor et al. 2018, p. 77). The following are a few often employed international pricing techniques:

- A. **Cost-based pricing.** In this approach, the price is determined by factoring in the costs of manufacturing, shipping, and selling in addition to a profit margin. Though it might not always be competitive in the local market, it guarantees that all costs are covered.
- B. **Market-based pricing.** Pricing that is based on the market's willingness to pay is also known as competition-based pricing.
- C. **Penetration pricing.** This frequently entails determining prices in relation to competitors after evaluating their prices. In markets with intense competition, it is essential. This is related to setting a lower price when entering a new market in order to draw clients and swiftly increase market share.
- D. **Price skimming.** This strategy, which differs from penetration pricing, entails setting a high starting price for a new product, particularly if it has special features. As competitors enter the market or the product becomes more widely used, the price is gradually lowered.
- E. **Economy pricing.** This strategy is the practice of reducing expenses and providing goods at the most affordable price. It is a tactic that low-cost producers and mass markets frequently employ.
- F. **Premium pricing.** That is a marketing tactic in which a product or service is positioned as premium or luxury by charging a high price. The intended consumer base for these goods typically believes that higher costs correspond to better quality.
- G. **Freemium pricing.** This strategy is especially common for online services and entails providing basic services at no cost and charging for more sophisticated features or functionalities.
- H. **Geographic pricing.** Prices are determined by a product's geographic location, taking into account local market conditions and shipping costs. When setting product prices, a company may also assess changes in the market demand.
- I. **Value-based pricing.** Rather than taking into account the true cost of production, prices are set based on customer perceptions of the worth of the good or service. This necessitates a thorough understanding of the target market and the importance that different features and benefits hold for them.

- J. Bundle pricing. This is the practice of offering a number of goods or services together at a lower cost than if you were to buy them separately. This may work well in markets where customers value good bargains.
- K. Psychological pricing. This tactic is predicated on the notion that consumers are psychologically impacted by particular prices. For example, if a product is priced at €9.99 rather than €10, it may appear more reasonable.
- L. Discounted or promotional pricing. In order to increase sales, temporary price reductions are provided. These reductions may be attributed to seasonal variations, stock clearance, or market testing.

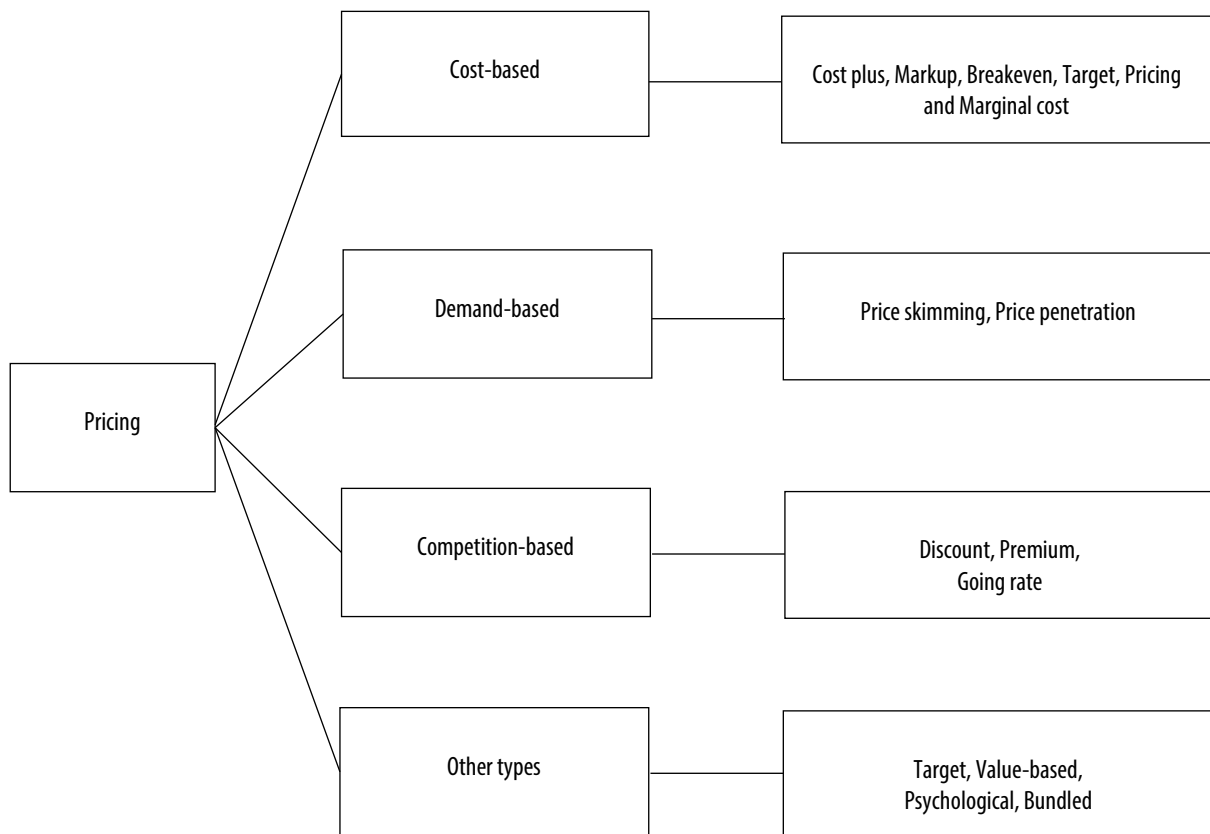


Figure 1. Company pricing strategies

Source: *The Ultimate Guide...* n.d.

Seven main elements determine a company’s pricing strategy. These elements, which together make up the “7 C’s of Pricing Strategy”, are important at national and worldwide levels (Schill and Nixon 2024, p. 177).

- A. Costs. A thorough grasp of all expenses associated with providing the product, such as those for creation, creativity, production, distribution, storage, advertising, and labor, among others. Costs rise as a result of international transportation and associated expenses for handling, insurance, and freight. Then there is taxation. Customs duties and turnover taxes, such as the local VAT, may apply, which might lead to price increases.

- B. **Competition.** A thorough and current examination of rivals' offerings, pricing, and brand in the global market, as well as the positioning of the company in relation to them.
- C. **Customers.** Due to various cultural differences and other considerations, customers abroad will perceive the product's worth differently from those in home markets. Additionally, clients can now easily compare online costs with domestic rates in real time.
- D. **Cultural differences.** When deciding on an international pricing strategy, it is important to have a thorough grasp of the cultures and demands of the people living in other countries, as well as how they value the brand and products in comparison to those of rivals.
- E. **Channels of distribution.** If distribution channels are extended, more individuals – such as importers and wholesalers – will handle the goods, leading to a rise in distribution complications and costs.
- F. **Currency Rates.** This refers to the intricacies of dealing with numerous currencies, which are prone to variations in exchange rates, along with conversion expenses.
- G. **Control of government.** In certain places, such as China and even certain European nations, bureaucracy and governmental rules and regulations may be burdensome and intricate. Some nations regulate the prices of goods, including food, gasoline, and medications.

The concept and essence of pricing-to-market

The majority of the literature on exchange rate pass-through is driven by a common finding in empirical studies, which is that import prices, even over the long term, do not fully respond to changes in the exchange rate. A partial pass-through to import prices indicates how traded goods deviate from the law of one price (LOP). The LOP states that homogeneous goods, regardless of where they are sold, must sell for the same price when their prices are converted to a common currency in competitive markets free from official trade barriers and transportation costs. Pricing-to-market (PTM) or trade costs may be the cause of a LOP violation. In other words, PTM is the capacity of firms with monopolistic competition to (intentionally) engage in price discrimination by varying their prices according to the destination markets (Rama and Vika 2019, p. 3).

Krugman (1987) first proposed the idea of PTM to explain why relative prices of identical goods in various markets differ due to fluctuations in exchange rates. Krugman defines PTM as the relative price differences for the same goods on different foreign markets that result from fluctuations in exchange rates (Krugman 1987, pp. 1–11). In the literature, setting prices according to the market is frequently linked, either directly or indirectly, to the insufficient transfer of exchange rate changes to prices. Froot and Klemperer (1989) claim that PTM happens when exporters raise their

export prices in terms of the domestic currency rather than decreasing prices in this currency during a period of temporary appreciation of the currency (Froot and Klemperer 1989, p. 2).

However, Ghosh and Wolf (1994) and Goldberg and Knetter (1997) define PTM as follows: exporters reduce their margins to limit the impact of changes in exchange rates on export prices rather than fully transferring the changes in exchange rates onto export prices. To further explain the PTM phenomenon, Knetter (1993, pp. 2–4) draws on the idea of stabilizing prices in the local currency (also known as Local Currency Pricing, or LCP). He states that, as a result of exchange rate fluctuations, rather than establishing margins, exporters would rather stabilize prices in local currency than maintain a fixed margin.

Marston (1990, p. 11) provides a slightly different definition of PTM. He states that PTM occurs when exporters lower their export prices in their own currency on the international market when that currency appreciates to avoid excessive price increases for exported goods in the buyer’s currency. However, Gil-Pareja (2003) does not specify the kind of price discrimination he refers to when he defines PTM as the occurrence of international price discrimination induced by changes in exchange rates (Gil-Pareja 2003, p. 9).

The definition of PTM in this work refers to the specific adjustment of the exporter’s margin in reaction to a shift in the domestic currency’s exchange rate relative to the importer’s currency. PTM occurs when an exporter restricts price increases for an importer whose currency has depreciated against the exporter’s currency, thereby stabilizing prices in the importer’s currency (Khalaf and Kichian 2000). To maintain market share, a foreign supplier may alter its margin rather than the price of its goods (Leigh and Rossi 2002, pp. 9–10).

Because there is an incomplete pass-through of exchange rate changes to prices, the prices of imported goods rise or fall less in the event of the domestic currency depreciating (appreciating) than predicted by standard models.

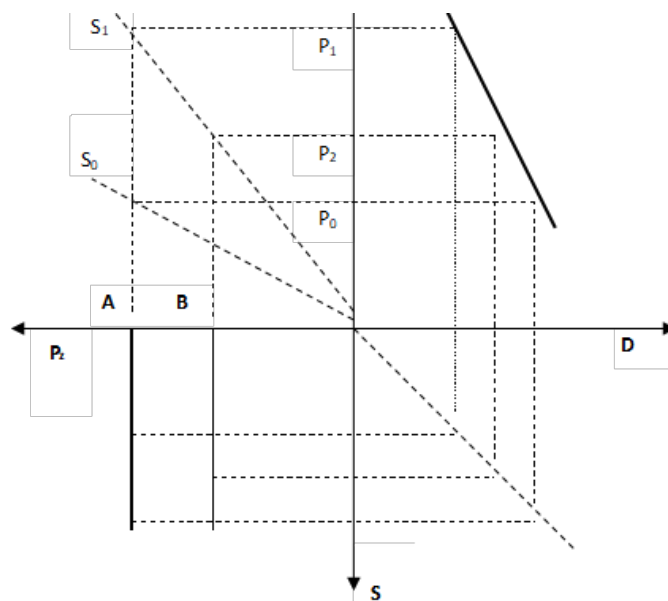


Figure 2. The incomplete transmission of exchange rate changes to import prices

Source: Marczewski 2002, p. 45.

Figure 2 illustrates how the depreciation of the importer's currency (an increase in the exchange rate from S_0 to S_1) does not cause the importer's price to change from P_0 to P_1 ; instead, it adjusts to P_2 , where $P_2 < P_1$. This occurs in the context of high price elasticity of import supply and standard price elasticity of import demand (equal to 1). Consequently, the price, expressed in foreign currency, decreases by the amount of AB for the foreign exporter. The exporter's margin will also decrease as a result. The difference in prices that a company sets for the same product on its home and international markets is known as a price gap, and it can only exist in certain situations.

A price gap can only exist for a limited amount of time, as the possibility of price arbitrage between domestic and foreign markets restricts this timeframe. Price arbitrage involves simultaneously buying a good at a lower cost on one market and selling it at a higher cost on another in order to profit. Additionally, the wider the price gap in the absence of price arbitrage, the more exchange rate volatility businesses should anticipate (Anderton, Baldwin, and Taglioni 2003, p. 4).

Antras and Staiger (2012) give another definition, describing PTM as the ability to set different prices in the domestic and foreign markets. This price discrimination is practiced by monopolistically competitive firms in order to take advantage of international pricing differences. Therefore, we can say that PTM is the way that companies adjust prices for different markets to exploit international price differences.

The motives of a pricing-to-market strategy

The interplay of supply and demand variables can be used to explain the causes of PTM. Demand models typically assume that PTM is contingent upon the structural characteristics of a given market, specifically the convexity of the exporter's demand curves (Fedoseeva 2013, p. 12). Knetter (1989) posits that in a monopolistic market, there exist two potential reasons for which the optimal export price may vary.

First, shifting marginal costs (where production costs are affected by fluctuations in exchange rates) can lead to adjustments to marginal costs, which will eventually have an equal impact on prices across all markets. The second reason is that the exporter's margin has changed (various margins are set by the exporter in various markets). Changes in the exporter's established price margin above marginal costs are associated with PTM. The import price will drop by the same amount as the exchange rate changes if the exporter's margin is greater than the marginal cost and foreign demand is defined by constant price elasticity.

Consequently, if the exporter's established margin remains constant across all markets, price discrimination will not take place under these circumstances. However, changes in the price converted into the importer's country's currency and changes in the price elasticity of demand mean that variations in the exporter's margin will be contingent on fluctuations in the exchange rate. As a result, the variation in the price elasticity of the foreign demand for exported goods determines the extent of price discrimination. Additionally, the inclination to select the PTM approach rises as demand price elasticity rises but falls as supply price elasticity rises (Anderson 2003).

The relative significance of a PTM strategy is also influenced by the market's structure, the organization of the company's costs, and its production methods. Due to the significant expenses associated with entering the market (such as advertising and setting up a distribution network), businesses that are already present in the market have some degree of monopoly power. Companies that are looking ahead must decide whether to increase market share, which will boost future profits or to increase current profits by making the right price adjustments.

Furthermore, in addition to the supply and demand factors that explain the PTM phenomenon, some economists, including Krugman (1987), Froot and Klemperer (1989) and Kasa (1992), also include exporters' expectations regarding changes in exchange rates in explaining the reasons for using this strategy, both periodic and permanent (Ok-Sun 2006, pp. 1–12).

In other words, rather than encouraging foreign companies to gain market share, a temporary strengthening of the home currency encourages them to raise their margins. Conversely, a sustained strengthening of the national currency pushes foreign businesses to lower their cost of goods sold to capture more market share. Additionally, ongoing national currency appreciation encourages new businesses to enter a particular market, expanding the selection of goods available for purchase. Consequently, this influences the degree of price elasticity of demand for the products that businesses sell and, consequently, the profits they make (Herzberg, Kapetanios, and Price 2003, p. 6).

Consequently, significant variations in the exchange rate could potentially encourage the entry of new businesses into a particular market, thereby potentially influencing price shifts within that market. In this situation, businesses might be prepared to adjust their margins to keep their market share. On the other hand, Dornbusch (1987) contends that the extent of export goods' diversification, the number of competitors and their strategic alliances, and the market's structure all influence the magnitude of PTM (Tantirigama 2003, p. 14).

When exporters have a small share of the foreign market or the market is not competitive enough to raise prices, setting prices according to the market most frequently occurs. In other words, PTM is highest in highly monopolized industries where exporters have a small share of the foreign market and thus little power to influence market prices. PTM is lowest in competitive industries overall, but because exporters typically control the majority of the market, exchange rate changes are almost entirely passed through to prices across all markets (Penkova and Hosewood 2002, p. 11). Furthermore, market-driven pricing is most frequently observed in trade between businesses that are members of the same capital group and when trade is subject to quantitative restrictions (Kenny and McGettigan 1996, p. 3).

According to Gil-Pareja (2003), there are two primary justifications for utilizing the PTM approach. First, strategic price discrimination among exporters drives PTM. Because exchange rates fluctuate, exporters adjust their prices accordingly to maximize their profits in various markets. For instance, if demand elasticity, market share, cost adjustments, and anticipated exchange rate fluctuations are taken into account when justifying the use of PTM, then exporters' strategic price discrimination is the rationale behind the adoption of PTM tactics.

Second, price stickiness causes PTM. Delays between changes in exchange rates and the calculation of export prices based on those changes lead to PTM. In this scenario, exporters do not genuinely aim for price differentials across markets; rather, the variations in export product prices across markets stem exclusively from variations in exchange rates (Gil-Pareja 2003, p. 6).

However, Bergin and Feenstra (2001, p. 8) contend that the widely accepted practices of long-term contract conclusion, market segmentation, and currency selection for foreign trade invoices may give rise to price rigidity and, as a result, the adoption of price-setting strategies based on market conditions.

The pricing-to-market model

Combining the models developed by Gagnon and Knetter (1995, p. 2) and Feenstra, Gagnon, and Knetter (1996, p. 3) results in the following PTM model. The model considers businesses that aim to maximize profits while offering unique products to various markets. The PTM strategy is applicable since this model presupposes market segmentation and, consequently, the impossibility of arbitrage between these markets. It also assumes that there is imperfect competition, that price is a strategic variable, and that using the gradual margin adjustment strategy to set prices will result in partial equilibrium. In this instance, maximizing the business's profit can be summarized as follows:

$$\max_{P_i} \left(\sum_{i=1}^n P_i X_i - C \left(\sum_{i=1}^n X_i, W \right) \right), \quad (1)$$

$$s.t \quad X_i = f_i(P_i / S_i, P_i^{sub}, N_i), \quad (2)$$

where:

P_i – price of the goods expressed in the exporter's currency;

X_i – the volume of demand for a given product (which is a function of the exporter's price expressed in the importer's currency);

S_i – exchange rate (which is the price of the importer's currency expressed in the exporter's currency);

P_i^{sub} – price of substitute goods expressed in the importer's currency;

N_i – total demand for all goods;

C – total cost function;

W – price index of semi-finished products used to produce the finished product, expressed in the exporter's currency.

There are no close substitutes for the exported goods, no strategic connections between suppliers of goods, and the exporter treats the prices of competitive goods as constant. In this case, setting prices at the following level is the first requirement needed for the exporter to make money:

$$P_i = MC\left(\frac{n_i}{n_i - 1}\right), \quad (3)$$

where:

MC – marginal cost;

n_i – price elasticity of demand for a given good, expressed as:

$$n_i = -(\Delta X_i / \Delta P_i)(P_i / X_i). \quad (4)$$

The price and margin of the exporter are dictated by the price elasticity of demand in different target markets, which is contingent upon the demand structure. A price discrimination model consistent with PTM requires a particular demand structure where the price elasticity of demand is not constant since pricing rules are dependent on the convexity of demand.

As demonstrated by formula (3), changes in the exporter's margin and marginal costs affect changes in the prices of exported goods. It can be inferred that marginal costs are independent of the market to which the goods are exported, assuming that the exporter's goods are identical in each market. This indicates that all target markets experience the same changes in marginal costs. Furthermore, this implies that PTM is only reflected in changes in exporter margins on target markets (Adolfson 1999, p. 4).

In each target market, the exporter's price (expressed in the exporter's currency) is equal to the costs plus the exporter's constant margin if there is constant price elasticity of demand. Consequently, in this instance, any fluctuations in the exchange rate are entirely reflected in the prices expressed in the importer's currency. Therefore, there are no variations in export prices that are connected to conditions in the intended market, such as shifts in market share or exchange rates. As a result, since both margin and marginal costs are constant across all markets, there can be no price discrimination. Conversely, if a market's demand is elastic and local prices rise due to the depreciation of the national currency, the exporter's margin contracts, meaning that changes in the exchange rate are not entirely reflected in prices.

Assuming that the exporter's margin is variable and that changes to it are contingent upon the circumstances present in the target market (i.e., variable price elasticity of demand), this implies that the exporter adjusts its margin to stabilize prices expressed in local currency when exchange rates fluctuate. To identify the variables that influence the exporter's price adjustments in response to exchange rate fluctuations, it is essential to consider scenarios where marginal costs are both differentiated and constant.

$$\frac{\Delta P_{it}}{\Delta S_{it}} \cdot \frac{S_{it}}{P_{it}} = \frac{\Delta n_{it}}{\Delta(P_{it}/S_{it})} \cdot \frac{(P_{it}/S_{it})}{n_{it}} \cdot \left[n_{it} - 1 + \frac{\Delta n_{it}}{\Delta(P_{it}/S_{it})} \cdot \frac{(P_{it}/S_{it})}{n_{it}} \right]^{-1}. \quad (5)$$

The degree to which changes in prices expressed in local currency impact the price elasticity of demand determines how much an exchange rate change affects prices. When the export price remains constant ($(\Delta P_{it}/\Delta S_{it})(S_{it}/P_{it}) = 0$), the transmission of exchange rate changes to prices

in the importing country's currency is considered complete. This is known as constant price elasticity of demand.

The existence of a positive value for the expression in brackets is the second prerequisite for optimizing the exporter's profits. If the price elasticity of demand increases as the price expressed in local currency increases, the entire equation is positive, indicating that the export price is adjusted to the change in the exchange rate. To maintain prices expressed in local currency and prevent the decline in the price competitiveness of exported goods, the exporter's margin must adjust in response to the appreciation of the exporter's currency, lowering the price expressed in that currency.

The possibility of changes in marginal costs due to changes in the exchange rate means that formula (5) should be accompanied by an expression showing the elasticity of marginal costs to changes in the exchange rate. This equation then takes the following form:

$$\frac{\Delta P_{it}}{\Delta S_{it}} \cdot \frac{S_{it}}{P_{it}} = \left[\frac{\Delta n_{it}}{\Delta(P_{it}/S_{it})} \cdot \frac{(P_{it}/S_{it})}{n_{it}} + (n_{it} - 1) \cdot \left(\frac{\Delta MC_{it}}{\Delta S_{it}} \cdot \frac{S_{it}}{MC_{it}} \right) \right] \cdot \left[n_{it} - 1 + \frac{\Delta n_{it}}{\Delta(P_{it}/S_{it})} \cdot \frac{(P_{it}/S_{it})}{n_{it}} \right]^{-1} \quad (6)$$

The devaluation of the exporting country's currency raises export prices more than if marginal cost remained constant. This occurs when changes in the exchange rate result in an increase in the marginal cost. As a result, the effect of exchange rate changes on prices expressed in local currency is limited. Therefore, the elasticity of marginal cost to exchange rate changes is inversely proportional to the pass-through effect of exchange rate changes on prices.

Given the assumption that marginal costs are contingent upon supply, the ideal price level within a particular market is contingent upon the volume of sales in other target markets. Consequently, when deciding on a pricing strategy, the demand in each target market should be considered. This also implies that changes in marginal cost balance the impact of exchange rate fluctuations on prices, whether they are fully or partially passed through. Thus, when the exporter's currency appreciates, the price expressed in local currency rises, which in turn reduces the demand for the exporter's goods. Reducing production helps to lower marginal costs and prices if the marginal cost of production rises in these circumstances.

This indicates that there is a negative correlation between the elasticity of marginal costs to changes in production levels and the effect of passing on exchange rate changes to prices (Adolfson 1999, p. 8). Using the first-order Taylor approximation of the expression $\ln(n_i/n_i - 1)$ around the average value and the logarithm of the equation, we get the following expression:

$$\ln P_{it} = \beta_0 + \beta_1 \ln MC_{it} + \beta_2 \ln SH_{it} + \beta_3 \ln S_{it} + \beta_4 \ln P_{it}^{sub}, \quad (7)$$

where:

β_0 – the transfer of all constant expressions from the Taylor model,

SH – market share (volume of goods exported divided by the total volume of goods imported into a given market, or X_i/N_i).

The disaggregated producer price index (PPI) can be used as an empirical proxy for marginal costs if changes in the exchange rate cause changes in marginal costs (e.g., due to changes in the prices of imported intermediates used to produce the exported goods). The direct impact of exchange rate fluctuations on export prices is represented by the exchange rate change coefficient β_3 , while the indirect effect associated with changes in marginal costs is not included. Changes in marginal costs have both direct and indirect effects on pricing policies, which are captured by the marginal cost factor β_1 . Furthermore, a consistent, uniform exporter margin across all target markets is included in the producer price index in addition to marginal costs.

The exporter's long-term pricing strategy is defined as expression (7), which is static and ignores any gradual adjustments of export prices to changes in explanatory variables. In the short run, however, there is a departure from (7), as potential economic shocks (such as fluctuations in the exchange rate) prompt both producers and consumers to adjust appropriately. Assuming that supply-side cost adjustments exist, the pricing process can be incorporated into a new model where price fluctuations are contingent upon both short-term (previous changes in explanatory variables) and long-term cointegration relationship deviations.

The pricing-to-market strategy in Europe

According to Krugman's (1987) definition, PTM is not observed when changes in the price of the exported good do not accurately reflect changes in exchange rates. The following formula is used to calculate the extent of PTM:

$$\lambda = \frac{\% \Delta P_A^{Ex}}{\% \Delta S} \div \frac{\% \Delta P_B^{Ex}}{\% \Delta S}, \quad (8)$$

where:

λ – pricing to market coefficient;

P_A^{Ex} – prices of exported goods in Country A;

P_B^{Ex} – prices of exported goods in Country B;

S – exchange rate.

The exporter's PTM does not occur if $\lambda = 1$. Conversely, PTM is present when $\lambda \neq 1$. In other words, PTM does not exist if the exchange rate transmission to the prices of goods exported to Countries A and B is equal. Furthermore, even if changes in exchange rates are not fully reflected in the prices of goods exported to these markets, PTM might not materialize.

Data on PTM strategies refer to the pricing strategies used by German exporters of consumer goods in 34 selected European countries. Calculations show that PTM did not occur only in France. This means that German exporters set the prices of exported goods at the same level as on the German market. In other countries, PTM occurred, but the level varied significantly.

Table 1. Average exchange rates and pricing-to-market coefficients for consumer goods in European countries, 2023

	GDP per capita in USD	Average exchange rate (€1 in terms of national currency)	PTM coefficient (λ)	Existence of PTM
Luxembourg	143,304	1	1.23	Yes (negative)
Ireland	137,638	1	1.32	Yes (negative)
Switzerland	89,537	0.96	1.58	Yes (negative)
Norway	82,264	11.45	1.15	Yes (negative)
Denmark	74,958	7.456	1.27	Yes (negative)
Netherlands	73,317	1	1.08	Yes (negative)
Iceland	69,833	144.46	1.71	Yes (negative)
Austria	69,069	1	1.04	Yes (negative)
Sweden	66,209	11.84	1.02	Yes (negative)
Belgium	65,813	1	1.02	Yes (negative)
Malta	63,481	1	0.81	Yes (positive)
Finland	59,869	1	1.13	Yes (negative)
France	58,765	1	1.00	No
Italy	54,259	1	0.93	Yes (positive)
Cyprus	53,931	1	0.83	Yes (positive)
Slovenia	51,407	1	0.84	Yes (positive)
Spain	50,472	1	0.88	Yes(positive)
Lithuania	49,245	1	0.74	Yes (positive)
Czechia	49,025	24.38	0.85	Yes (positive)
Poland	45,538	4.59	0.60	Yes (positive)
Estonia	45,236	1	0.91	Yes (positive)
Portugal	45,227	1	0.83	Yes (positive)
Hungary	43,601	386.43	0.69	Yes (positive)
Croatia	42,873	1	0.69	Yes (positive)
Slovakia	42,228	1	0.89	Yes (positive)
Türkiye	41,881	28.86	0.36	Yes (positive)
Romania	41,029	4.96	0.54	Yes (positive)
Latvia	40,892	1	0.81	Yes (positive)

	GDP per capita in USD	Average exchange rate (€1 in terms of national currency)	PTM coefficient (λ)	Existence of PTM
Greece	39,864	1	0.81	Yes (positive)
Bulgaria	33,780	1.95	0.55	Yes (positive)
Montenegro	28,002	1	0.59	Yes (positive)
Serbia	26,074	117.20	0.60	Yes (positive)
North Macedonia	21,391	61.52	0.50	Yes (positive)
Albania	19,556	106.85	0.62	Yes (positive)

Negative – export prices are set above the price in the exporting country.

Positive – export prices are set below the price in the exporting country.

Source: own study based on Statistisches Bundesamt 2023.

The highest PTM occurs in the most economically developed countries due to the relatively high income of consumers. If the price elasticity of demand for the exported products decreases as prices rise, the exporters increase markup during currency appreciation. This shows that export prices are set above the price in the exporting country (PTM is negative). By contrast, the lowest PTM occurs in the least developed European countries due to the relatively low income of consumers. This means that companies differentiate the prices of the same goods on different foreign markets depending on consumers’ income in a given country. In this way, the prices of goods exchanged internationally adjust to the prices set in the target markets. This shows that exporters decrease profit margins (by lowering local currency prices) during currency appreciation to protect market share.

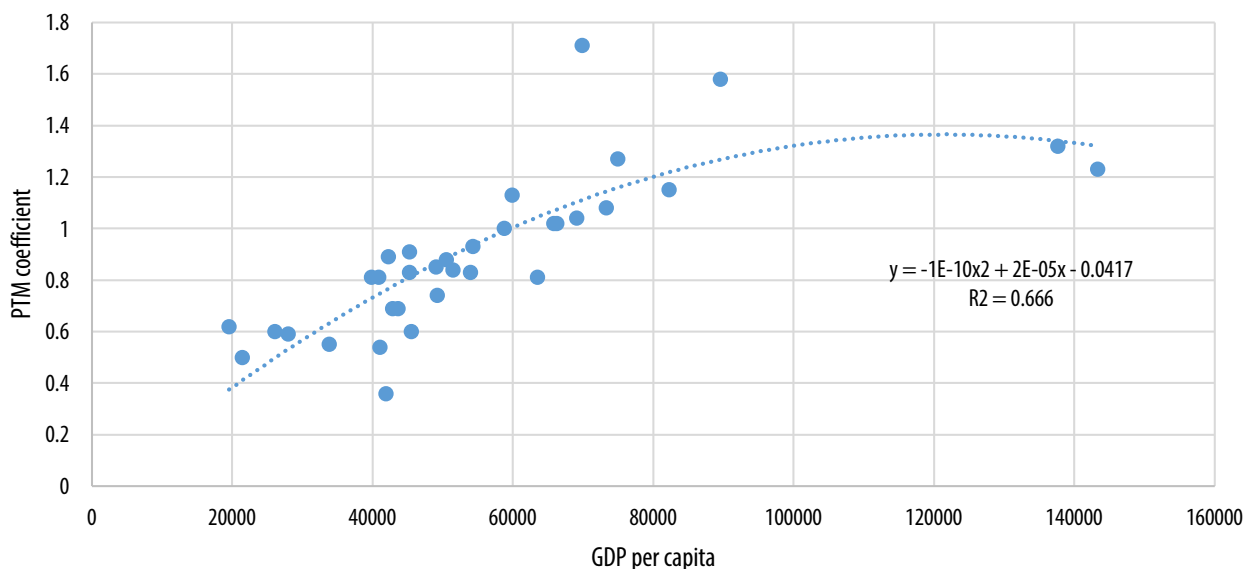


Figure 3. GDP per capita in USD, and the PTM coefficient in European countries, 2023

Source: own calculations based on Statistisches Bundesamt 2023.

The highest PTM coefficients (mainly negative) occur for alcoholic beverages because these products are generally treated as consumer goods with relatively low price elasticity of demand,

as there are no close substitutes. Therefore, in this respect, consumer demand responds relatively little to changes in the prices of these goods due to habits, traditions, or customs. However, the lowest PTM rate (mainly positive) occurs for tobacco products, meat and fish. These products are largely treated as first-need products with many substitutes, and the full transfer of exchange rate changes to prices could significantly reduce the demand for these goods.

Table 2. Average pricing-to-market coefficients for consumer goods in European countries, 2023

Country	Food and non-alcoholic beverages	Bread and cereals	Meat	Fish	Dairy products and eggs	Fruits, vegetables and potatoes	Alcoholic beverages	Tobacco	Clothing and footwear
Luxembourg	1.12	1.07	1.14	0.85	1.18	1.10	1.21	0.73	1.10
Ireland	1.07	1.03	0.90	0.71	1.16	1.00	2.31	2.22	0.99
Switzerland	1.51	1.48	1.88	1.44	1.43	1.25	1.51	1.19	1.42
Norway	1.19	1.06	1.09	0.72	1.27	1.32	2.52	1.88	1.13
Denmark	1.10	1.28	0.77	0.95	1.15	0.98	1.64	1.13	1.31
Netherlands	0.91	0.80	0.89	0.70	0.93	0.87	1.13	1.25	1.06
Iceland	1.33	1.35	1.51	0.90	1.59	1.19	3.41	1.69	1.41
Austria	1.00	1.02	1.01	0.99	0.93	0.92	0.99	0.79	1.04
Sweden	0.96	0.95	0.83	0.93	0.88	0.98	1.57	0.90	1.13
Belgium	0.99	0.94	1.00	0.84	0.97	0.91	1.30	1.14	1.05
Malta	1.10	1.04	0.84	0.76	1.24	1.11	1.42	0.75	1.00
Finland	1.03	1.11	0.90	0.92	1.02	0.97	2.44	1.35	1.17
France	1.01	0.92	1.07	0.84	0.92	1.08	1.14	1.62	1.07
Italy	0.97	1.01	0.92	0.73	0.99	1.00	1.02	0.76	1.06
Cyprus	1.02	0.99	0.75	0.80	1.22	1.00	1.35	0.66	0.91
Slovenia	0.95	1.00	0.86	0.73	1.04	0.82	1.19	0.67	0.97
Spain	0.93	0.95	0.76	0.70	1.00	0.90	1.11	0.72	0.84
Lithuania	0.96	0.97	0.69	0.72	1.13	0.87	1.24	0.68	1.02
Czechia	0.91	0.87	0.74	0.80	0.97	0.83	1.24	0.84	1.20
Poland	0.71	0.70	0.56	0.73	0.75	0.65	1.06	0.54	0.93
Estonia	1.02	1.00	0.85	0.85	1.05	0.98	1.45	0.71	1.23
Portugal	0.95	0.87	0.75	0.71	1.07	0.91	1.27	0.77	1.02
Hungary	0.93	0.92	0.67	0.77	1.08	0.88	0.92	0.72	0.86
Croatia	0.97	1.06	0.72	0.77	1.00	0.85	1.36	0.61	0.99
Slovakia	1.00	0.94	0.78	0.86	1.08	0.96	1.15	0.66	1.00
Türkiye	0.60	0.51	0.53	0.38	0.87	0.48	2.04	0.23	0.28

Country	Food and non-alcoholic beverages	Bread and cereals	Meat	Fish	Dairy products and eggs	Fruits, vegetables and potatoes	Alcoholic beverages	Tobacco	Clothing and footwear
Romania	0.69	0.57	0.55	0.69	0.99	0.57	1.03	0.72	0.93
Latvia	0.99	0.97	0.70	0.75	1.13	0.82	1.49	0.65	1.06
Greece	1.01	1.00	0.80	0.79	1.35	0.81	1.78	0.63	1.08
Bulgaria	0.84	0.66	0.62	0.57	1.22	0.74	1.04	0.43	0.79
Montenegro	0.87	0.77	0.61	0.75	1.02	0.95	1.60	0.40	1.03
Serbia	0.92	0.77	0.71	0.79	1.11	0.95	1.45	0.45	0.99
North Macedonia	0.68	0.66	0.60	0.54	0.84	0.59	1.06	0.30	0.78
Albania	0.88	0.77	0.69	0.71	1.24	0.82	1.62	0.43	1.01

Source: own study based on Statistisches Bundesamt 2023.

Therefore, the level of PTM also varied significantly in the surveyed countries due to individual groups of consumer goods. Notably, the PTM strategy was not used for “fruits, vegetables and potatoes” in Ireland, Italy and Cyprus, “food and non-alcoholic beverages” in Austria and Slovakia, “meat” in Belgium, “bread and cereals” in Estonia, Slovenia, and Greece, “dairy products and eggs” in Spain and Croatia, and “clothing and footwear” in Malta.

Table 3. Correlation coefficients between GDP per capita and PTM in European countries, 2023

PTM coefficient	GDP per capita
General	0.73
Food and non-alcoholic beverages	0.56
Bread and cereals	0.53
Meat	0.57
Fish	0.37
Dairy products and eggs	0.25
Fruits, vegetables and potatoes	0.54
Alcoholic beverages	0.27
Tobacco	0.67
Clothing and footwear	0.35

Source: own study based on Statistisches Bundesamt 2023.

The highest correlation coefficient was recorded between GDP per capita and “tobacco”, while the lowest was for “dairy products and eggs”.

Conclusion

Pricing-to-market is a strategy used by businesses to set prices for their products or services based on market conditions rather than production costs. The goal is to maximize profits by optimizing pricing in different international markets. This strategy is often employed by businesses engaged in international trade to remain competitive and capture market share. PTM is related to market-based pricing, which means that prices are determined by market conditions, demand, and competition rather than production costs. This allows businesses to adapt to different pricing structures in various markets.

PTM also takes into account exchange rate changes. In international markets, businesses need to consider currency exchange rates. Adjusting prices to account for fluctuations in exchange rates can help maintain competitiveness and profitability. A PTM strategy is connected to competitive position and involves analyzing competitors' pricing strategies in different markets. Businesses can adjust their prices to position themselves competitively and gain an advantage in specific regions. PTM also pays attention to local factors. Consideration of local factors such as consumer preferences, purchasing power, and cultural influences is crucial. Prices may be adapted to align with these factors and meet the expectations of local consumers.

The results of the research confirmed the occurrence of PTM in 34 European countries, although the level differed significantly between countries. There was a positive correlation between the level of PTM and the level of economic development of the country.

Because of their comparatively high consumer incomes, the most economically developed nations have the highest PTM, while the least developed European nations have the lowest PTM because of their comparatively low consumer income. This implies that businesses set different pricing for identical products on various international markets based on consumer income levels in those nations. Therefore, the prices of items traded globally adapt to the prices established in the target markets. This demonstrates how, in order to maintain market share during periods of currency appreciation, exporters reduce their profit margins (by lowering local currency prices).

Moreover, it was revealed that the highest level of PTM occurred in the case of homogeneous rather than heterogeneous consumer goods. This is related to different levels of price elasticity of demand in the case of these two commodity groups. Moreover, this result may indicate that goods classified as homogeneous can potentially differentiate themselves based on their intrinsic quality (e.g., coffee). Therefore, companies are able to set different margins in different markets. On the other hand, in the case of goods described as heterogeneous, there may be apparent differences in the quality of these products. This may be the result of using different marketing techniques or the subjective feelings of consumers (Rollo 2012, p. 12).

Understanding the elasticity of demand in different markets helps businesses set prices that maximize revenue. In markets where demand is more price-sensitive, pricing strategies may differ. Brand image is another essential factor for PTM strategy. Thus, businesses must also consider the impact of pricing on their brand image. Setting prices too low or too high can affect how a brand is perceived in the market. The trade-off that businesses believe exists between

boosting future profits through market share growth and boosting current profits through greater markups influences pricing strategies. This trade-off could force businesses to use pricing tactics that, in the near term, might not seem optimal. It is notable that the evidence on pricing-to-market is less pronounced over especially lengthy timeframes, allowing for several intervening price revisions.

The added value resulting from the research is two-fold. First, it highlights significant differences in the scale of PTM in highly developed economies and in countries with an average level of development. Second, it demonstrates how PTM varies depending on the degree of homogeneity or differentiation of the goods exported by the countries studied. To date, no comprehensive research has explored PTM strategies in European markets. Therefore, this research fills the gap in this area, constituting a significant contribution to empirical research on pricing strategies. Further research from a microeconomic standpoint could determine whether PTM impacts are confined to differentiated products or also apply to homogeneous goods. Such research should be performed across highly developed, developing, and low-developed countries for comparative purposes.

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Pricing-to-market jako przykład zróżnicowania cen na rynkach europejskich

Celem podjętych badań jest ocena stopnia stosowania strategii pricing-to-market (PTM) w wybranych krajach europejskich, ze szczególnym uwzględnieniem tego zjawiska w odniesieniu do określonych grup dóbr konsumpcyjnych.

W artykule wykorzystano przegląd literatury z zakresu makroekonomii i finansów międzynarodowych oraz metody statystyczne i ekonometryczne.

Wyniki przeprowadzonych badań potwierdziły występowanie zjawiska PTM w wybranych krajach europejskich, choć poziom tego zjawiska różnił się istotnie pomiędzy krajami. Wykazano dodatnią korelację pomiędzy poziomem PTM a poziomem rozwoju gospodarczego kraju. Najwyższy poziom PTM występował w przypadku dóbr konsumpcyjnych jednorodnych, a nie heterogenicznych.

Wyniki badań są niezwykle istotne, szczególnie z punktu widzenia firm międzynarodowych. Zrozumienie elastyczności popytu na różnych rynkach pomaga firmom ustalać ceny, które maksymalizują przychody. Ustalanie zbyt niskich lub zbyt wysokich cen może mieć wpływ na postrzeganie marki na rynku. Stosując strategię PTM, przedsiębiorstwa dążą do zrównoważenia rentowności z konkurencyjnością na rynku.

Do chwili obecnej nie przeprowadzono kompleksowych badań nad zjawiskiem strategii pricing-to-market na rynkach europejskich. Tym samym niniejsze badanie wypełnia istniejącą lukę w tym obszarze, stanowiąc istotny wkład w badania empiryczne z zakresu strategii cenowych.

Słowa kluczowe: pricing-to-market, strategia cenowa, różnicowanie cen