

ANALYSIS OF VALUE PRODUCTIVITY OF SELECTED FOOD PROCESSING ENTERPRISES USING RETAIL BRANDS

Jiří Klečka

Abstract

A product sale in packaging with a logo and a name of a retail chain is an alternative to the traditional sale in packages with the name and the logo of a manufacturer. This alternative is called and known as retail brands or private labels. Concept of private labels has been growing in the world as well as in the Czech Republic, especially in the segment of chilled foods and drugstore products. Using of retail labels has its advantages and disadvantages for the manufacturers (but also for businesses selling goods). This paper will analyse differences in total productivity and selected partial productivities among the manufacturers using the private labels and the producers not using this distribution tool. The used data set contains Czech selected enterprises belonging to food industry and their financial data covers the time period 2010-2014. The productivity will be analysed in the contemporary concept, including not only the overall efficiency of all factors from the point of view of their consumption but also from the point of view of their employment in the production process. This concept does not use only traditional accounting items but widespread economic items (economic cost, economic profit, respectively economic value added).

Key words: retail (private) label brand, manufacturer of dairy products, value productivity, total and partial productivities

JEL Code: D24, M2

Introduction

A sale of products in packaging with a logo and a name of retail (or private) brands is an alternative to traditional sales in packages with the name and the logo of a producer. The retail chain starts to be a communicating and quality guaranteeing unit for the end consumer instead of the producer. Retail brands have been significant and they have had growing market share

in the world as well as in the Czech Republic for last 50 years. This can be observed especially in the segment of chilled food and drugstore products. According to Mulačová and Mulač (2013) Switzerland had the largest share of private labels in 2011 (46% of the market share). This share was 19.1% in the Czech Republic in the same year. The share has increased three times during last 10 years. The development of the private labels can be observed also in other countries, e.g. in Spain (Martos-Partal, González-Benito and Fustinoni-Venturini, 2015).

Using of the retail labels has its advantages and disadvantages for the manufacturers as well as for retail businesses selling goods. The retail brand is a tool for retail businesses and chains to differentiate and create a corporate image. It has a potential to build customer loyalty and strengthen market position (Pepe, Abratt and Dion, 2011 as well as Do Vale, Matos and Caiado, 2016). It often allows retailers to purchase from the manufacturers at lower prices and even to change the manufacturers operatively. On the other hand, the producers can sell their products even when they do not have sufficient financial sources and therefore they can save on costly marketing campaigns.

The retail brands can also bring manufacturers an increase in production volume and it leads to an increase of usage of production capacities. In certain cases it can strengthen and stabilize supplier-customer relationships with positive effects on partial productivities, especially of current assets.

On the other hand there are also risks connected with the retail brands. There occurs a possibility of damaging corporate image in the case of selling low-quality goods under the retail brand. There might be also a competition between the goods sold under retail's and manufacturer's brand. The manufacturer can also deal with increased costs on the different packages and others. Dividing of costs between the manufacturer and the retail chain can be distorted as Loy, Holm, Steinhagen and Glauben (2015) show for German milk and butter market.

Quelch and Harding (1996) characterize the products sold under the retail brands as easily produced, simple and not very expensive products which are mostly manufactured by small and medium-sized enterprises. These products have the low risk of the purchase for the end consumer. Specific kind of relationship between supplier and customer is not connected only with the retail brands but it has been in the automotive industry for last decades where the strength of car manufacturers is extreme (Scholleová, 2016).

This paper will analyze the differences in total and selected partial value productivities of the enterprises using retail (private) brands and the producers not using this tool. The

analysis will be processed on the selected food manufacturers belonging to the dairy industry in the Czech Republic. The analysis will be based on the financial data covering the time period 2010-2014.

The key data on which this research is based has been obtained by the researcher himself. It means that this data is primary. In this case the primary data is information about the individual dairy products not distributed under the own manufacturer brand but distributed under the brand of the retail chain. Data collection took place in Prague in late September and early October 2014. The data collection were processed in shops of the leading retail chains. These retail chains were Lidl, Billa, Penny Market, Spar, Albert, Kaufland, Tesco and Globus. It means that all major retail chains operating in the Czech Republic are covered by this contribution. Some of the aforementioned retail chains use more than just one retail brand as proved by Čámská (2014) and own data findings.

Obtaining information about products' manufacturers was possible even without cooperation with the producers or the retail chains. It is possible due to the fact that dairy products have been studied. The dairy products are an example of the animal products which have to be clearly identified not only by their country of origin, but also by the producers (specific location in the case of multiple production locations operating by one producer). This obligation has been set up by Regulation of the European Parliament and Council (EC) No. 853/2004 from 29 April 2004.

The primary data is then supplemented with secondary data which characterizes the manufacturers selling and not selling under the retail brands. The secondary data includes data from financial statements which allows determination of the size of the manufacturer. The data from the financial statements has been obtained from the corporate database Albertina.

Value productivity in contemporary concept will be analyzed. It means the efficiency of the production factors will be analyzed not only from the point of view of their consumption (and depreciation + amortization) but also from the point of view of demand of business processes on inputs. Not only traditional accounting measures but also extended economic measures (as economic costs, economic profit, respectively economic value added) will be used.

1 Productivity and used ratios

Productivity can be generally defined as the efficiency of using production factors in manufacturing process, or widely in a production process, whose results are tangible as well

as intangible outputs (Klečka, 2014). Two basic types of productivities can be distinguished (Craig and Harris, 1973) – total productivity (equation 1) and partial productivity (equation 2).

$$\text{total productivity} = \frac{\text{total output}}{\text{total input}} \quad (1)$$

$$\text{partial productivity} = \frac{\text{total output}}{\text{partial input}} \quad (2)$$

The equations 1 and 2 are too general and they cannot be used for fulfilling the paper's aim. These productivity ratios are modified for the further use. The selection for the indicators used in the analysis has been a compromise. On one hand there is the paper's aim, on the other hand there is an obstacle with limited data availability.

1.1 The total productivity ratio

The total productivity takes into account all kinds of inputs as well as outputs. The contemporary concept of productivity expresses the value of inputs as the costs of consumption (and depreciation plus amortization) and costs of capital employed (components of assets, converted to flow-related capital costs).

$$\text{Total productivity} = \frac{\text{Total revenues}}{\text{Costs of consumption and binding of inputs}} \quad (3)$$

$$\text{Costs of consumption and binding of inputs} = \text{Total costs (accounting)} - \text{interests} + \frac{\text{WACC}}{1-t} \times \text{Total assets} \quad (4)$$

Production factors are reflected in the broadest sense - not only for operational part, but also financial and extraordinary activities in businesses. This ratio is an alternative to the economic profit or EVA. This paper will use the constant rate of the costs of capital employed for all reporting periods. This constant rate is equal to WACC (weighted average costs of capital) for the year 2014 for food processing industry in the Czech Republic. The constant value of WACC is equal to 11.02% (taken from Ministry of Industry and Trade, 2015) and the level of taxation is equal to 19%.

1.2 The partial productivity ratios of inputs consumption

The partial productivity ratios are focused only on the selected production factors and the research part is based on following ratios.

$$\text{Productivity of consumption (depreciation) of an input} = \frac{\text{Total revenues}}{\text{Costs of consumption of an input}} \quad (5)$$

1.3 The partial productivity ratios of costs of capital employed

The binding productivity ratios follow the contemporary concept of the value productivity. The costs of capital employed (costs of binding) used in the denominator of formulas are expressed at the end of the sub-chapter.

$$\text{Productivity of inputs binding} = \frac{\text{Total revenues}}{\text{Costs of inputs binding}} \quad (6)$$

$$\text{Productivity of current assets binding} = \frac{\text{Total revenues}}{\text{Costs of current assets binding}} \quad (7)$$

$$\text{Productivity of fixed assets binding} = \frac{\text{Total revenues}}{\text{Costs of fixed assets binding}} \quad (8)$$

The cost of capital employed are expressed as $\text{WACC} \times (1-t)^{-1}$ multiplied by the value of examined assets (equation 6 – total assets etc.).

1.4 Time indices of productivity

Quantification of productivity development (with the elimination of possible changes in prices and changes in volume and production structure) is based on an assumption of data on prices of individual kinds of inputs and outputs and separated data about their physical volumes. However, for this analysis purposes, data on volumes and inputs have not been available, therefore:

- Used ratios of productive (at least partially compensate effects of changes in prices and physical volumes) and GDP is measured in constant prices,
- Made fixation of the costs of capital employed in constant prices of the year 2014 (it also partially compensates possible effects of price changes).

2 Development of productivity of selected enterprises belonging to dairy industry in the Czech Republic

The overall results of productivity have been compared for a group of the enterprises offering at least one product in their portfolio under the retail brand and for a group of the enterprises selling only under their own brand.

2.1 Data sample

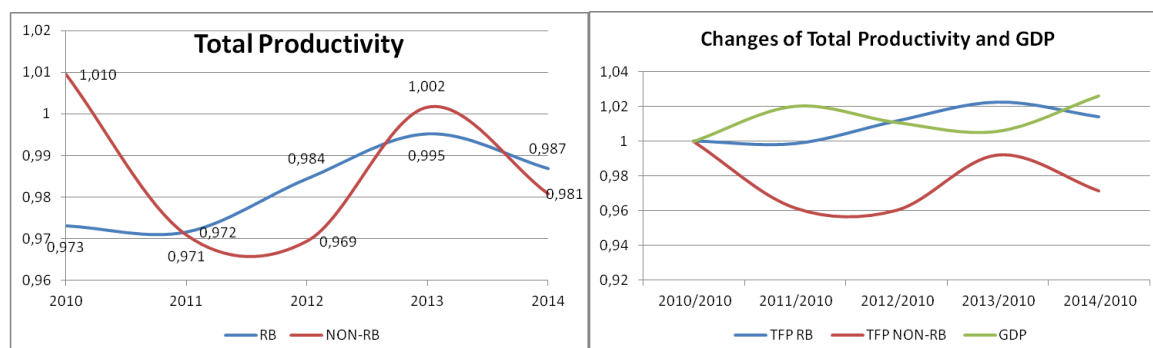
The group of the enterprises using the retail brands contains 13 businesses whose value of total assets is 7,826,929,000 CZK and total value of revenues is 20,329,327,000 CZK (data for the year 2014). The group of the enterprises not using the retail brands contains 12 businesses whose value of total assets is 5,546,327,000 CZK and total value of revenues is 10,684,695,000 CZK (data for the year 2014). The size of both groups is affected by the data availability in the corporate database and therefore the data does not indicate the actual numbers of the enterprises in both analysed groups. On the other hand it has to be taken into account that the analysis is not distorted because the productivity characteristics are expressed in relative terms.

It should be noted that the detection of only one manufacturer's product sold under the private label was sufficient for an inclusion of this manufacturer into the first group. It means that the first group could contain the manufacturers who use the retail brands only for the small part of their production.

2.2 Results

The values of total productivity, its changes and their comparison with changes in GDP (figure 1 and figure 2) have shown greater stability in the level of productivity in the case of the enterprises using the retail brands. The value of total productivity greater/lower than 1 corresponds to the positive/negative level of the modified economic profit, respectively modified economic value added (EVA). Curves of the figures are labelled by RB (enterprises using the retail brands) and NON-RB (enterprises not using the retail brands).

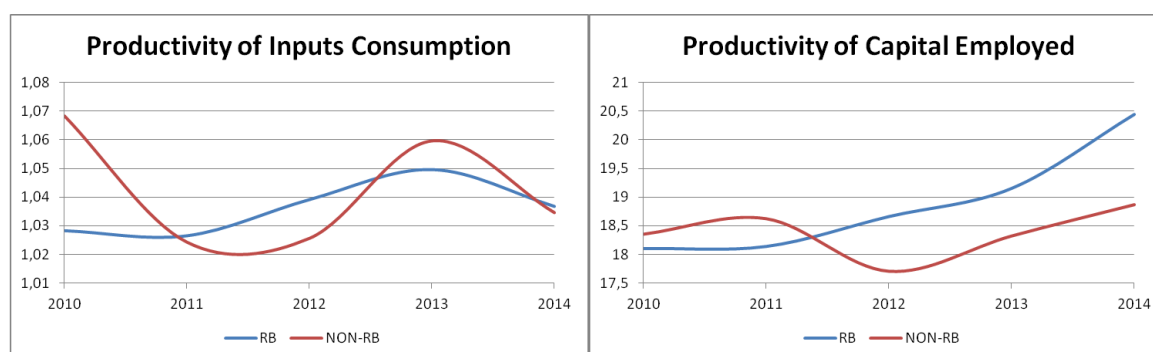
Fig. 1: Total Productivity and Fig. 2: Changes in Total Productivity and Changes in GDP in the Czech Republic (base indices, the year 2010 = 100)



Source: Author

The statement of the stability of the productivity is also valid for the partial productivity of inputs consumption which is the most important in value. The results are displayed by the figure 3.

Fig. 3: Partial Productivity of Inputs Consumption and Fig. 4: Partial Productivity of Capital Employed



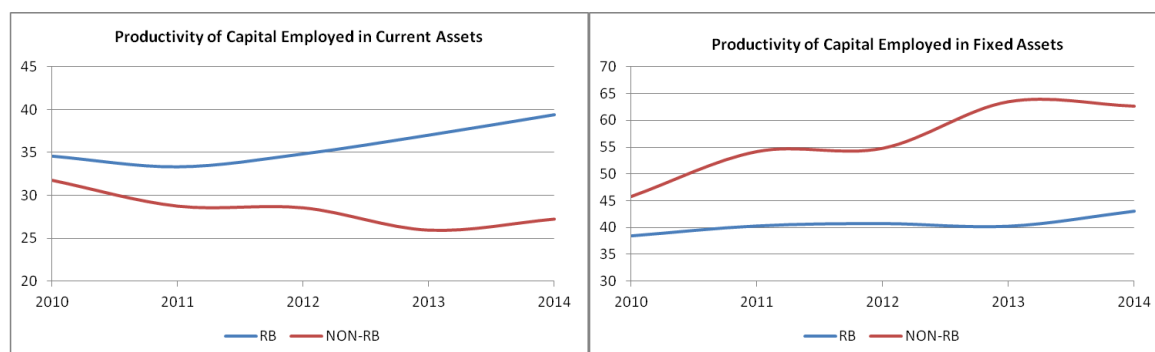
Source: Author

This partial productivity was higher for the enterprises using the retail brands in 2012 and 2014, on the contrary it was lower in 2010 and 2013. As it has been already mentioned greater fluctuations (favourable as well as unfavourable) occurred in the group of the enterprises not using the retail brands. This part of inputs consumption is dominant. It creates 95.2% of inputs value in the case of the enterprises using the retail brands and 94.8% for the businesses not using the retail brands (data valid for the year 2014).

The partial productivity of capital employed was lower for the enterprises using the retail brands in the first two years (2010 and 2011), after recovering from the recent economic crisis. Since 2011 it has reached higher level and it remains above the level of this partial productivity of the enterprises not using the retail brands. It is displayed in Figure 4.

The dominance and the favourable development of the partial productivity of capital employed in the case of the enterprises using the retail brands are further analysed. This partial productivity is divided according to its specific components (costs of capital invested in current and fixed assets). Details are shown by figures 5 and 6.

Fig. 5: Partial Productivity of Capital Employed in Current Assets and Fig. 6: Partial Productivity of Capital Employed in Fixed Assets



Source: Author

The partial productivity of current assets binding has been consistently higher and significantly increasing for the whole analysed time period in the case of the enterprises using the retail brands. On the other hand the partial productivity of fixed assets binding has reached more favourable values for the businesses not using the retail brands.

2.3 Discussion

The share of costs of capital employed is significantly lower in this survey (as in most enterprises) than the share of costs of inputs consumption. In numbers it is 4.8% for the enterprises using the retail brands and 5.2% for the enterprises not using the retail brands. But also these inputs are significant. The amount of current assets is influenced by the supplier-customer relationships between the manufacturer and the retail chain. It seems respecting the sense of using the retail brands that the retail brands should have a clear potential for

increasing productivity (productivity of capital employed in current assets). It is valid also for other methods and forms of innovation, especially for lean production and its processes.

Conclusion

The results of the analyses have shown greater stability of the total productivity in the case of the enterprises using the retail brands. The mentioned stability means greater adaptability or better resistance in efficiency in the use of the production factors when negative changes in demand or other negative changes occur in the enterprise neighbourhood. These negative changes cannot be permanent and very deep for the validity of the aforementioned statement. On the other hand lower or shorter upward productivity fluctuations indicate potential restrictions for the enterprises using the retail brands because they have reduced flexibility due to the restrictive relationships with the strong retail chains.

The favourable differences in the level and increase of the productivity were found for the enterprises using the retail brands especially in the case of the partial productivity of capital employed in the current assets. The efficiency of the current assets is significantly influenced by the efficiency of the supplier-customer relationship between the manufacturer, the retail chain and the end customer.

References

- Craig, C. E., & Harris, R. C. (1973). Total Productivity Measurement at the Firm Level. *Sloan Management Review*, 14(3), 13-29.
- Čámská, D. (2014). Strategie podniků vybraného agropotravinářského odvětví a vazba na jejich ekonomickou efektivnost. In *Trendy v podnikání 2014. Recenzovaný sborník příspěvků mezinárodní vědecké konference*. Plzeň, Czech Republic: Západočeská univerzita v Plzni.
- Do Vale, R. C., Matos, P., & Caiado, J. (2016). The impact of private labels on consumer store loyalty: An integrative perspective. *Journal of Retailing and Consumer Services*, 28, 179-188.
- Klečka, J. (2014). Indicators measuring the level and development of enterprise productivity. In *8th International Days of Statistics and Economics* (Vol. 8, pp. 668-677). Slaný, Czech Republic: Melandrium.

- Loy, J. P., Holm, T., Steinhagen, C., & Glauben, T. (2015). Cost pass-through in differentiated product markets: a disaggregated study for milk and butter. *European Review of Agricultural Economics*, 42(3), 441-471.
- Martos-Partal, M., González-Benito, O., & Fustinoni-Venturini, M. (2015). Motivational profiling of store brand shoppers: Differences accros quality tiers. *Marketing Letters*, 26(2), 187-200.
- Ministry of Industry and Trade. (2016). Finanční analýza podnikové sféry za 1. – 4. čtvrtletí 2015. Retrieved April 23, 2017, from <https://www.mpo.cz/assets/cz/rozcestnik/analyticke-materialy-a-statistiky/analyticke-materialy/2016/11/Tabulky.xlsx>
- Mulačová, V., & Mulač, P. (2013). *Obchodní podnikání ve 21. století*. Prague, Czech Republic: Grada.
- Pepe, M. S., Abratt, R., & Dion, P. (2011). The impact of private label brands on customer loyalty and product category profitability. *Journal of Product & Brand Management*, 20(1), 27-36.
- Quelch, J. A., & Harding, D. (1996). Brands Versus Private Labels: Fighting to Win. *Harvard Business Review*, 74(1), 99-109.
- Scholleová, H. (2016). The analysis of indicators of long term prosperity companies from automotive based on predictive finance indicators. In *5th International Conference on Accounting, Auditing and Taxation* (Vol. 5, pp. 416-422). Paris, France: Atlantis Press.

Contact

Jiří Klečka

University of Chemistry and Technology Prague, Department of Economics and Management
Technická 5, Prague 6 – Dejvice, 166 28, Czech Republic

jiri.klecka@vscht.cz