

MENDELU Working Papers in Business and Economics 93/2024

Retail Sale in Non-Specialised Stores in the Czech Republic

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MENDELU Working Papers in Business and Economics

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Citation

Mádr, M., and Náplava, R. (2024). Retail Sale in Non-Specialised Stores in the Czech Republic. *MENDELU Working Papers in Business and Economics* 93/2024. Mendel University in Brno. Cited from: http://ideas.repec.org/s/men/wpaper.html

Abstract

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The analysis of retail sales in non-specialised stores was carried out from 2005 to 2021. The market share of the six most important competitors (by ownership structure) was 75% in 2021. There has been a gradual increase in market concentration over the long term. The market structure can be characterised as an asymmetric oligopoly, the most common market structure within the European Union. Regarding the number of significant firms and the degree of concentration, the Czech market has a structure similar to the retail markets in Estonia, Germany, and the UK. Within the European comparison, the Czech retail market reaches a medium level, as evidenced by the fact that there are markets with a lower (Hungary and Poland) and higher degree of concentration (Austria and Slovakia) among the neighbouring countries.

According to the Herfindahl-Hirschman Index, this market changed from an unconcentrated to a moderately concentrated market after 2013. There were 15 mergers and acquisitions in the period under review. However, only one (the merger of REWE Group with PLUS - DISCOUNT in 2008) was likely to lead to a significant increase in market share (by 3.5 percentage points to 13%), i.e., an increase in market concentration. The market development was very successful for the two foreign owners, the Schwarz-Gruppe (Kaufland and Lidl) and the REWE Group (Billa and Penny), whose subsidiaries had the highest market share growth. At the same time, these four companies include hypermarkets (Kaufland), supermarkets (Billa) and discount stores (Lidl and Penny). The Schwarz-Gruppe's share increased from 13% to 28%, and REWE's rose from 7% to 15%. Trading margins have been relatively stable since 2005; the average level of these indicators has increased slightly, especially from 2015 to 2021. Gross profits and gross operating margins of the largest companies have increased over time. From a company-by-company perspective, gross margins have (with minor exceptions) ranged from 1-4.5%. Sales and gross profits of the largest companies grew faster than inflation, with gross profit growth outpacing sales growth.

The evolution of the market for retail sales in non-specialised stores, showing a change in market shares and the relatively low average gross margins of individual market players and their changes, clearly show this is a competitive market.

Key words

retail sales, market structure, market concentration, performance of companies, Czechia

JEL: D43, L81, M20

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Acknowledgements

The article was written in collaboration with the Office for the Protection of Competition. We are particularly grateful for the assistance given by Kamil Nejezchleb, Vice-Chair, Martin Vitula, Head of the Mergers, and Martin Machay.

Introduction

The present text analyses the development of retail sales in non-specialised stores between 2005 and 2021.¹ The article deals with the 32 largest firms operating in the retail market in the period under review. The analysis focuses on three areas: the evolution of the market shares of the six largest firms, which include the nine largest retailers Albert, Globus, Makro, REWE Group (Billa, Penny), Schwarz-Gruppe (Kaufland, Lidl) and Tesco Group (Tesco Stores and Tesco Franchise), the evolution of market concentration and the evolution of profitability indicators and trading margins with emphasis on the nine largest retailers.

1 Data and Methods

1.1 Data

Input data for firms are drawn from individual balance sheets and profit and loss statements from the website www.justice.cz (Ministry of Justice of the Czech Republic, 2023). The 2022 values of three companies (Kaufland Česká republika, Kubík and PeMaP) are not yet available on this website because these companies have not yet published their 2022 financial statements.²

As it is not possible to analyse all firms operating in the market, the total market size is determined by aggregate sales in the sector (Czech Statistical Office, 2023). For the analysis, it would be most appropriate to define the market as sector CZ-NACE 47.11 (Retail sale in non-specialised stores with food, beverages or tobacco predominating), but data for this sector is only available from 2010. For this reason, CZ-NACE 47.1 (Retail trade in non-specialised stores), including CZ-NACE 47.19 (Other retail trade in non-specialised stores), is used to determine total sales.³ This aggregation makes it possible to analyse the period of interest from 2005 onwards. At the same time, three limitations are associated with the available data. Firstly, it is impossible to use data before 2005 because there was a change in methodology (change from the Sectoral Classification of Economic Activities to NACE). At the same time, there is no published data for 2022, so this analysis currently focuses on the period from 2005 to 2021. It should also be noted that almost half of the companies analysed operate

¹ Some analyses include the year 2022.

² Situation as of 10 January 2024.

³ The individual analyses contain sectoral definitions for completeness for CZ-NACE 47.1 and CZ-NACE 47.11.

primarily in the wholesale sector (e.g. ASTUR & QANTO, Makro)⁴, so the market share of these companies may be higher than the actual retail market.

1.2 List of companies

The analysis focuses on the 32 most influential companies. The following table summarises the list of firms, primary business area (CZ-NACE), period with available data, top nine competitors, and an indication of common foreign ownership.

Tab. 1: Overview of analysed companies

| Company name | Sector (CZ-NACE) | Period | Degree of concentration (CR6) | Foreign owner |
|---|---------------------|--------------------|----------------------------------|----------------|
| Albert Česká republika, s.r.o. | 47.11 | 2005–2021 | Yes | |
| Astur & Qanto s.r.o. | 46.39 | 2015–2021 | | |
| BILLA, spol. s r.o. | 47.11 | 2005–2021 | Yes | REWE Group |
| CBA NUGET s.r.o. | 46.39 | 2007–2021 | | |
| COOP Centrum družstvo | 46.39 | 2005–2021 | | COOP Group |
| COOP MORAVA, s.r.o. | 46.39 | 2005–2021 | | COOP Group |
| CS EDEKA spol. s r.o. | 47.11 | 2005–2006 | | |
| ČEPOS - Česká potravinářská obchodní a.s. | 46.39 | 2005–2021 | | |
| DLC Napajedla a.s. | 46.39 | 2005–2021 | | |
| FLOSMAN s.r.o. | 47.11 | 2021 | | |
| Globus ČR, v.o.s. | 47.11 | 2005–2021 | Yes | |
| HRUŠKA, spol. s r.o. | 47.11 | 2005–2021 | | |
| JASO-DISTRIBUTOR, spol. s r.o. | 46.34 | 2005–2021 | | |
| JIP východočeská, a.s. | 46.34 | 2007–2021 | | |
| Kaufland Česká republika v.o.s. | 47.11 | 2005–2021 | Yes | Schwarz-Gruppe |
| KBJ VELKOOBCHODY s.r.o. | 46.39 | 2005–2021 | | |
| Košík.cz s.r.o. | 47.91 | 2017–2021 | | |
| Kubík a.s. | 47.11 | 2005–2021 | | |
| Lidl Česká republika v.o.s. | 47.11 | 2005–2021 | Yes | Schwarz-Gruppe |
| MAKRO Cash & Carry ČR s.r.o. | 46.39 | 2005–2021 | Yes | |
| NORMA, k.s. | 47.11 | 2008–2021 | | |
| PeMaP s.r.o. | 46.39 | 2005–2021 | | |
| Penny Market s.r.o. | 47.11 | 2005–2021 | Yes | REWE Group |
| PLUS - DISCOUNT spol. s r.o. | 47.11 | 2005–2007 | | |
| ProVektor, spol. s r.o. | 46.39 | 2005–2019; 2021 | | |
| RAPO BRNO, s.r.o. | 46.39 | 2005–2021 | | |
| ROSA market s.r.o. | 47.11 | 2005–2021 | | |
| SPAR Česká obchodní společnost s.r.o. | 47.11 | 2005-2013 | | |
| TAMDA FOOD s.r.o. | 46.39 | 2010–2021 | | |
| Tesco Stores ČR a.s. | 47.11 | 2005–2021 | Yes | Tesco Group |
| Tesco Franchise Stores ČR s.r.o. | 47.11 | 2015-2021 | Yes | Tesco Group |
| VELKÁ PECKA s.r.o. | 47.91 | 2014–2021 | | |

⁴ CZ-NACE: 46.39 (Non-specialised wholesale of food, beverages and tobacco).

1.3 Indicators of concentration

The evolution of retail market concentration is monitored through two standard indicators: the Degree of Concentration and the Herfindahl-Hirschman Index (Ginevičius & Čirba, 2007; Hall & Tideman, 1967; Hirschman, 1964).

The degree of concentration (CR_x) is commonly calculated for the four most important firms in the industry. Due to the structure of the retail market, this index is calculated for the six largest firms, which include the nine largest retailers: Albert, Globus, Makro, REWE Group (Billa, Penny), Schwarz-Gruppe (Kaufland, Lidl) and Tesco (Tesco Stores and Tesco Franchise), whose market share was 74% in 2021. This index can be formally written as:

$$CR_6 = \sum_{i=1}^6 s_i$$

The Herfindahl-Hirschman Index (HHI) is the sum of the squares of the market shares (in %) of each firm in the industry. The value can take values from 0 to 10 000. This analysis focuses on the top 32 firms with a market share of 88% (CZ-NACE 47.1) to 91% (CZ-NACE 47.11) in 2021, meaning that excluding other firms operating in the market should not significantly affect the resulting value. This index can be formally written as:

$$HHI = \sum_{i=1}^{32} s^2 = s_1^2 + s_2^2 + \dots + s_{32}^2$$

Table 2 presents four perspectives on the interpretation of the Herfindahl-Hirschman Index. Despite the different thresholds, three basic levels of concentration, unconcentrated, moderately and highly concentrated markets, can be identified.

| | Tab. | 2: | Interpr | etation | of the | Herfindah | l-Hirschman | Index |
|--|------|----|---------|---------|--------|-----------|-------------|-------|
|--|------|----|---------|---------|--------|-----------|-------------|-------|

| Špička (2016) | | U.S. Department of Justice & Federal Trade Commission (2015) | | |
|----------------------------|---|---|----------------------------|--|
| Value | Level of concentration | Value | Level of concentration | |
| (0; 999> | Highly competitive industry | (0; 999> | Unconcentrated market | |
| <1000; 1499> | Unconcentrated market | | Moderately concentrated | |
| <1500; 2499> | Moderately concentrated market | <1000; 1799> | market | |
| <2500; 10000> | 00; 10000> Highly concentrated market <1800; 10000> | | Highly concentrated market | |
| Gaucher-Holm et al. (2023) | | Competition Commission (2013) | | |
| Value | Level of concentration | Value | Level of concentration | |
| (0; 999> | Low concentration | (0; 999> | Unconcentrated market | |
| <1000; 1499> | Moderate-low concentration, | | | |
| <1500; 1799> | Moderate concentration, | <1000; 1999> | Concentrated market | |
| <1800; 2499> | High concentration | | | |
| <2500; 10000> | Very high concentration | <2000; 10000> | Highly concentrated market | |

These two indicators are complemented by determining the market structure through the relationship between the market shares of the five most influential firms (Dobson et al., 2001, p. 262). According to this method, it is possible to distinguish:

- Dominant firm: $s_1 > 25 \% \Lambda s_1 > 2 \times s_2$
- Duopoly (without dominant firm): $s_2 > 15 \% \Lambda s_2 > 2 \times s_3$
- Asymmetric oligopoly: ${}^{5}s_{1} > 15 \% \Lambda s_{4} > 5 \% \Lambda s_{1} > 1,5 \times s_{4}$
- Symmetric oligopoly: $s_x > 5 \% \Lambda s_x \ge 0.67 \times s_{x+1}$
- Unconcentrated market: $s_x < 5 \% \Lambda CR_5 < 33 \%$

⁵ Without dominant firm and duopoly.

1.4 Financial indicators

We focus on the following indicators:

•
$$ROA = \frac{Gross \, profit}{Total \, (net) \, assets} \times 100$$

• $ROS = \frac{Gross \ profit}{Total \ sales} \times 100$

•
$$ROE = \frac{Gross \, profit}{Equity} \times 100$$

- Trade margin = $\frac{(Total \ sales Cost \ of \ sales)}{Total \ sales} \times 100$
- $Markup = \frac{(Total \ sales Cost \ of \ sales)}{Cost \ of \ sales} \times 100$
- Weighted average return on sales (sales are weight)
- Aggregated gross profits

In addition, we also compare selected indicators with the development of the price level, which is captured through the consumer price index (CPI).

We follow the report of the British Competition & Markets Authority (CMA) from July 2023 (Competition & Markets Authority, 2023) that analyzed British retail groceries. CMA is a nonministerial department that promotes competitive markets and tackles unfair behaviour. This report works with different time series lengths, so it is impossible to compare all results sufficiently.

In the evaluation of profitability, there is generally no precise scale that would say what profitability is "low", "high", "optimal", etc. So, rather than the level of the indicators themselves, we are concerned with their development tendencies, or instead with a comparison of the state that relates to the starting year 2005 and the ending year 2021. Where the data allowed, we also included the year 2022. (This also applies to other indicators.).

1.5 Data limitations

Some companies have an accounting period different from the calendar year. These companies are Kaufland, Lidl, Tesco (accounting period from 1 March to 29 February), Košík (from 1 April to 31 March), Velká Pecka and PLUS - DISCOUNT (from 1 May to 30 April), Globus (from 1 July to 30 June) and Makro (from 1 October to 30 September). In this case, the accounting indicators are shown for the year that covers the longer part of the accounting period (e.g. for Lidl, the accounting period from 1 March 2020 to 28 February 2021 refers to the calendar year 2020). In the case of Globus, the accounting period is spread evenly between the two years. In this case, the period from 1 July 2008 to 30 June 2009 relates to 2009.

Albert's accounting period for 2014 and 2015 are combined, so we split this accounting period evenly between 2014 and 2015.

The Czech Statistical Office has not yet published the total annual retail sales for 2022. It can be assumed that these figures will be published in mid-2024. As an alternative, retail sales can be calculated from the sales index. This calculation will make sense when the remaining two companies (Kaufland Česká republika v.o.s and PeMaP s.r.o) also publish accounting data for 2022.

It is not possible to analyse the impact of some mergers (e.g. Tesco and Carrefour in 2005) because the Czech Statistical Office offers data for sector 47.11 (Retail sale in non-specialised stores with food, beverages or tobacco predominating; NACE Rev. 2) only since 2005.

2 Analysis of retail sales

2.1 Development of market shares

Table 3 shows the level of market share in the first and last years analysed (2005 and 2021) and the change in this share. The next part of this subsection presents the evolution of the market shares of each firm, with a breakdown into the six largest firms (Figure 1), the eight largest sellers (Figure 2) and the sixteen other firms (Figure 3).

Lidl, Kaufland, Billa and Penny achieved the highest market share growth. Lidl's market share increased from 4.3% to almost 15.5%. Billa more than doubled its market share (from 2.4% to 6.4%), and Penny Market almost doubled its share (4.6% to 8.5%). Makro recorded the most significant decline in market share, reducing its market share to less than half over time (from 11% to 5.3%), and Globus achieved the second largest reduction in market share (from 5.9% to 4.7%).

Let's take into account the owners of the companies. The market development was very successful for two foreign owners, Schwarz-Gruppe (Kaufland and Lidl) and REWE Group (Billa and Penny), whose subsidiaries grew the most. At the same time, these four companies include hypermarkets (Kaufland), supermarkets (Billa) and discount stores (Lidl and Penny).

Tab. 3: Market share of selected companies

| | Market share in 2005* | Market share in 2021 | Change in market share 2005-2021 [p.p.] |
|---------------------------------|-----------------------|-------------------------|---|
| Albert Česká republika, s.r.o. | 10.610 | 12.451 | 1.841 |
| Astur & Qanto s.r.o (2015) | 0.011 | 0.523 | 0.512 |
| BILLA, spol. s r.o. | 2.386 | 6.352 | 3.966 |
| CBA NUGET s.r.o. (2007) | 0.000 | 0.363 | 0.363 |
| COOP Centrum družstvo | 2.953 | 1.926 | -1.026 |
| COOP MORAVA, s.r.o. | 0.919 | 0.961 | 0.042 |
| CS EDEKA spol. s r.o. | 0.49 | - | - |
| ČEPOS - Česká potravinářská ob. | 0.590 | 0.310 | -0.280 |
| DLC Napajedla a.s | 0.044 | 0.194 | 0.149 |
| Globus ČR, v.o.s. | 5.923 | 4.746 | -1.177 |
| HRUŠKA, spol. s r.o | 1.523 | 1.652 | 0.129 |
| JASO-DISTRIBUTOR, spol. s r.o | 0.102 | 0.057 | -0.045 |
| JIP východočeská, a.s (2007) | 0.616 | 2.702 | 2.086 |
| Kaufland Česká republika v.o.s | 8.786 | 12.980 | 4.194 |
| KBJ VELKOOBCHODY s.r.o | 0.181 | 0.072 | -0.109 |
| Košík.cz s.r.o (2017) | 0.022 | 0.381 | 0.359 |
| Kubík a.s | 0.212 | 0.126 | -0.086 |
| Lidl Česká republika v.o.s | 4.305 | 15.495 | 11.190 |
| MAKRO Cash & Carry ČR s.r.o | 11.088 | 5.313 | -5.775 |
| NORMA, k.s (2008) | 0.467 | 0.514 | 0.047 |
| PeMaP s.r.o | 0.055 | 0.038 | -0.016 |
| Penny Market s.r.o | 4.585 | 8.546 | 3.961 |
| PLUS - DISCOUNT spol. s r.o. | 3.878 | - | - |
| ProVektor, spol. s r.o | 0.016 | 0.017 | 0.001 |
| RAPO BRNO, s.r.o. | 0.112 | 0.079 | -0.033 |
| ROSA market s.r.o. | 0.481 | 0.539 | 0.057 |
| SPAR Česká obchodní společnost | 0.984 | _ | _ |
| s.r.o. | 0.984 | - | - |
| TAMDA FOOD s.r.o (2010) | 0.000 | 0.803 | 0.803 |
| Tesco Stores ČR a.s | 8.231 | 8.529 | 0.298 |
| Tesco Franchise Stores ČR s.r.o | - | 0.28 | - |

Note: Default shares are relative to 2005 unless indicated in parentheses beside the company name.

Figure 1 shows the evolution of the market share of the six leading firms by ownership structure. Over the long term, the Schwarz Group has demonstrated a significant increase, from 13% to 28% in the period under review. The second successful group, both in terms of market share levels and changes in market share, is the REWE Group, with a shift from 7 to 15%. Regarding long-term trends, Albert is above 10%, while Globus and Makro are heading towards 5% in the long term. At the same time, these market shares suggest that this market takes the form of an asymmetric oligopoly, as all three conditions are met (Dobson et al., 2001).

Specifically, the market share of the largest firm (Schwarz Gruppe) is greater than 15%, the market share of the fourth firm (Tesco Group) is greater than 5% and at the same time the market share of the largest firm is at least one and a half times the market share of the fourth firm. Asymmetric oligopoly is the most common market structure of the food retail market in Western Europe (Dobson et al., 2003). In the case of the Czech Republic, this market takes the form of six significant firms and a large number of small firms, a situation similar to retail markets in Belgium (Statista, 2022a), Estonia (Popluga et al., 2014), France (Statista, 2014), Germany (Statista, 2024), Serbia (Vukmirović et al., 2018) and the UK (Competition & Markets Authority, 2023). A view of the evolution of market shares of each retailer is provided in Figure 2.



Fig. 1: Evolution of the market shares of the six leading companies, considering ownership

Figure 2 shows the most noticeable increase in Lidl's share, especially since 2012. Until 2015, Lidl and Kaufland were the fastest growing companies on the market at the expense of the others; Kaufland started to lose share, probably due to Lidl's unprecedented growth. Makro was the only company that lost ground for (almost) the entire period. Globus is in a similar situation, with a slowly declining share since 2010.



Fig. 2: Evolution of the market shares of the nine leading companies Note: Tesco Franchise is included within Tesco Group due to low market share and late entry into the Czech market (2015).

Among the smaller companies, it is worth mentioning the continuous decline in the case of COOP Centrum družstvo and the significant increase (until 2014) and subsequent maintenance of the share of JIP Východočeská, even though this company did not merge with other companies. As for the other companies, it is possible to observe a gradual increase in the market share of CBA NUGET, Košík.cz and TAMDA FOOD.



Fig. 3: Development of the market shares of other companies with a market share greater than 0.3% in 2021

2.2 Development of market concentration

The evolution of retail market concentration can be seen in Figures 4 and 5.

The market share of the six largest firms, comprising the nine largest retailers, increased by eighteen percentage points compared to 2005. These nine retailers (six firms) share was around 75% in 2021. Let's consider the market share of the five largest firms (excluding Globus). The value of 70% is similar to the current situation in Estonia (Popluga et al., 2014) Germany (Statista, 2024), Serbia (Vukmirović et al., 2018) and the UK (Competition & Markets Authority, 2023).

Two other European countries with a similar asymmetric oligopoly to the Czech Republic have a higher degree of concentration, Belgium 84% (Statista, 2022a) and France 85% (Statista, 2014). Let us also add that other developed countries have a degree of concentration higher than 90% because here, the asymmetric oligopoly takes the form of a duopoly (Denmark, Finland and the Netherlands)⁶ or triopoly (Austria, Ireland, Slovakia and Sweden)⁷. On the other hand, there are countries with a lower degree

⁶ Denmark (Statista, 2016), Finland (Statista, 2023a) and the Netherlands (Statista, 2023b).

⁷ Austria (Austrian Federal Competition Authority, 2023), Ireland (Statista, 2022b), Slovakia (FinStat, 2022) and Sweden (Statista, 2023c).



of concentration (e.g. Italy, Hungary, Poland or Greece), i.e. in the European comparison, the Czech retail market has a middle position.

Fig. 4: Evolution of the concentration degree

Notes: CR6 represents the sum of the six largest firms' market shares, including nine retailers. Both indicators are calculated for aggregate sales in CZ-NACE 47.1 (blue) and 47.11 (orange).

Figure 5 shows the evolution of market concentration. Here, it can be seen that there is an increase in market concentration across different indicators, ranging from a different industry concept (CZ-NACE 47.1 versus CZ-NACE 47.11) to taking into account the ownership structure of the firms concerned. When ownership structure is considered, it is possible to speak of a moderately low (Gaucher-Holm et al., 2023) or moderately concentrated market after 2013 (Competition Commission, 2013; U.S. Department of Justice & Federal Trade Commission, 2015). In 2015, the level of market concentration was around 1200, corresponding to the German or Slovak market (Špička, 2016). In 2019, this level is closer to 1300, i.e. to the level of Estonia or Slovenia. At the same time, in that year, market concentration was significantly higher than in the case of Hungary and Poland, but on the other hand, long-term higher levels of concentration can be found within the post-socialist economies of Lithuania, Latvia or Slovakia, especially in the case of Slovakia, there was a significant increase in concentration between these years (Danusevics, 2021).

The current level of market concentration is 1450 (NACE 47.11), which is very close to the situation in the UK (Competition & Markets Authority, 2023). At the same time, this situation corresponds to a medium level within the European Union (Brůha et al., 2023). Especially when considering the ownership structure, two breaks can be seen that led to increased market concentration (growth in 2009 and 2014). The first break can be explained by the merger of the competitors REWE Group with PLUS – DISCOUNT in 2008. The following subchapter deals with the issue of mergers in the sector under review.



Fig. 5: Development of market concentration (the Herfindahl-Hirschman Index)

Notes: The HHI represents the Herfindahl-Hirschman Index for the 32 largest firms. The HHI (by owner) expresses the Herfindahl-Hirschman Index for the 32 largest firms, considering the ownership structure (market share determined for COOP, REWE Group, Schwarz-Gruppe and Tesco Group instead of individual firms). Each index is calculated for aggregate sales in the CZ-NACE 47.1 (darker colour) and 47.11 (lighter colour) sectors.

2.2.1 Mergers and acquisitions

In general, mergers and acquisitions are among the leading causes of increasing market concentration. In the period under review, fifteen M&A transactions were approved by the Office for the Protection of Competition, and one (Tesco/Carrefour) was approved by the European Commission. Of the fifteen mergers cleared, five were within the main competitors, while ten were within the competitive fringe.

In the case of the main competitors, the five mergers can be divided into two groups. The first group consists of three mergers that had a minimal impact on the share change: the merger of Ahold Czech Republic, a.s. and JULIUS MEINL, a.s. (2005) and Tesco Holdings B.V. and PR market, s.r.o. (2011) and

Koninklijke Ahold N.V. and SPAR Česká obchodní společnost s.r.o. (2014).⁸ The second group includes two mergers that led directly to increased market share. Specifically, the mergers of Tesco Stores ČR a.s. and CS EDEKA spol. s r.o. (2006) and REWE Group with PLUS - DISCOUNT spol. s r.o. (2008). The merger of Tesco Stores and CS EDEKA increased Tesco's market share by one percentage point to 11.5% in 2007. The latter merger (between REWE Group and PLUS - DISCOUNT spol. s r.o.) led to an increase in market share to 13% (3.5 p.p.) in 2009, thus giving REWE Group the second place on the market (instead of Tesco), which is the assumption made in the decision of the Office for the Protection of Competition (Office for the Protection of Competition, 2008). It should also be added that it is impossible to assess the impact of the takeover of Carrefour stores by the Tesco group, as this merger took place in 2005, i.e. at the beginning of the period under review.

In the case of the competitive fringe, three firms, Hruška (2007 and 2013), Rosa Market (2007 and 2008) and JIP východočeská (2011), made acquisitions. Given that these changes led to a minimal increase in market share of 0.2 p.p. in the case of Hruška (original share 1.8%) and Rosa Market (original share 0.5%), it can be assumed that these operations did not have a significant impact on the market structure of the sector under investigation.

2.3 Profitability indicators

The following three figures show the development of indicators of profitability - assets (ROA), sales (ROS) and equity (ROE). The common denominator is the fact that the profitability of all companies has been positive since 2017. The companies Albert, Globus and Tesco have experienced periods of negative profitability - Globus started showing positive profitability only from 2011, Albert struggled with negative profitability in 2006, 2009, 2014 and 2015 and Tesco 2012-2014 and 2016. The most stable indicator of profitability is ROS, which at the same time (due to how it is calculated) fulfils the role of operating margin.

Apart from Albert, Globus and Tesco, the other companies were characterized by positive operating margins (the exception was Lidl in 2005). Until 2012, Makro had the largest operating margin, when it was replaced by Lidl, whose margin peaked in 2015 (at 11%); Makro subsequently experienced a downward trend in the margin to just above zero. Other unnamed companies have been able to maintain a similar level of margins over the long term. Thus, since 2012, Lidl has maintained the highest operating margin, several times that of other competitors.

⁸ Albert's accounting periods for 2014 and 2015 are combined, so it is impossible to quantify this merger's impact.

In the context of ROE, the Albert company can be interesting at first glance, whose development is very volatile, especially the drop in 2009, which was caused by the combination of two circumstances - equity decreased threefold compared to the previous year, while the loss increased fourfold. During 2014 and 2015, another drop (also visible in other indicators) was caused by the takeover of the loss-making company Interspar.



Fig. 6: Return of assets



Fig. 7: Return of sales (operating margin)



Fig. 8: Return of equity

2.4 Trade margin and mark-up

The development of the trade margin implies a slightly increasing trend over time, except Albert, where the margin increases again only after 2016. In this context, an interesting fact is that Albert, during its operation in the Czech Republic, kept up until the year 2021 a loss (based on cumulative operating results). Lidl replaced Albert at the head of these indicators in 2014, which was slightly overtaken by Kaufland in 2021. In the context of the previous figures, it may be worth noting that although Globus's market share is continuously decreasing, its trading margin is still growing. Makro's market share is also decreasing, but its trading margin is maintained at an approximately similar level. The development of mark-ups of individual companies offers a more or less similar picture, which is given by the way the mark-up is calculated (see methodology). The trends of the curves are thus very similar; only the mark-up is, in principle, higher. From the perspective of comparing the last two periods of 2021 and 2022, it is evident that only Billa could increase both the margin and the mark-up year-on-year.



Fig. 9: Trade margin



Fig. 10: Mark-up

The following figure provides an overview of the development of the average trade margin and the average mark-up for the above-mentioned main sellers. Average values are weighted by sales, i.e. larger companies (according to sales) have a higher weight. For 2022, this is an average of only seven retailers; Kaufland is missing due to the unavailability of data. The trading margin and the mark-up



have been relatively stable since 2005, with deviations in the order of percentage points. The average level of these indicators increased slightly, especially from 2015 to 2021.

Fig. 11: Weighted average trade margin and mark-up

Table 4 compares the average values of financial indicators for 2005-2008 and 2018-2021. A four-year average should offer more robust conclusions than just averages of extreme years, which can be affected by various circumstances. The changes in selected financial indicators show that the profitability increased, especially for Albert, Billa, Globus, Lidl and Tesco. Among the remaining companies, we find exceptions, where the "extreme" represents Makro, whose changes are negative for all profitability. As for the trade margin, we find positive changes in all other companies except for Albert. The reason for the almost 10% decrease in the trade margin for Alberta is the high base (2005-2008 average) compared to the end of the period.

| | ROA | ROS | ROE | Trade margin |
|--------------------------------|--------|-------|--------|--------------|
| Albert Česká republika, s.r.o. | 9.57 | 3.71 | 65.30 | -9.97 |
| BILLA, spol. s r.o. | 5.81 | 0.77 | 15.68 | 1.85 |
| Globus ČR, v.o.s. | 14.23 | 3.03 | 36.61 | 7.44 |
| Kaufland Česká republika v.o.s | -2.08 | 0.36 | -74.99 | 0.91 |
| Lidl Česká republika v.o.s | 15.35 | 8.13 | 44.81 | 5.92 |
| MAKRO Cash & Carry ČR s.r.o | -13.30 | -4.32 | -42.97 | 0.27 |
| Penny Market s.r.o | 3.51 | -1.21 | 26.42 | 3.87 |
| Tesco Group | 3.72 | 1.85 | 4.65 | 4.00 |

Tab. 4: Change in the financial indicators of companies

Notes: This is the difference between the averages of 2005-2008 and 2018-2021. Interpretation of indicators ROA, ROS, ROE and trading margin = by how many percentage points have changed the indicator. Tesco Group includes Tesco Stores ČR a.s. and Tesco Franchise Stores ČR s.r.o.

2.5 Aggregated operating results of companies

The figure below presents the development of the weighted average gross margin of eight companies, where the sales of the companies serve as weights. The figure shows that the average margin has increased - if we compare the period 2005 to 2012 with the period 2015 to 2021, then the average margin has almost doubled. In terms of average margin, the years 2013 and 2014 represent an "intermezzo" with a marked decrease. The average amount of the margin between the last years 2019-2021 is between 3.8 and 4.3%. In the UK, the margin has been reduced from 3.5% to just under 2% between 2019 and 2022 (Competition & Markets Authority, 2023). The growth of gross profits (Figure 13) for the selected companies offers a similar development as for the above-mentioned margins.



Fig. 12: Weighted average gross margin



Fig. 13: Aggregated gross profit in billions CZK

2.6 Comparison with the development of the price level

The figure below presents the development of the price level (measured by the consumer price index; CPI) and the development of sales, which is weighted by individual companies' sales. The figure shows that sales generally grew faster than the price level, except 2012, 2013 and 2021.



Fig. 14: Inflation (CPI) and sales growth

The following two figures first compare the development of inflation with the development of gross profits (Fig. 15), which is weighted by the gross profit of individual companies, and then the development of gross profits by the development of sales (Fig. 16). Due to the different scale, with year-on-year changes in profits ranging from minus 114% to plus 28%, inflation or sales are captured on the left axis and profit changes on the right axis in these figures.

With two exceptions represented by changes between 2008 and 2009 and 2017 and 2018, the relationship between change in sales and change in profits is directly proportional – year-over-year declines in profits have accompanied year-over-year declines in sales, and vice versa. However, the intensity of the changes is different when profits change several times more than sales.



Fig. 15: Inflation (CPI) and gross profits (right axis)



Fig 16: Sales growth and gross profits (right axis)

The following table summarises sales and gross profits in 2005 and 2021 and further captures the change between these years. The main conclusion is clear – sales and gross profits grew over time, and this growth was faster than the price level growth. The price level increased by 36.5%, while sales increased by 114% and gross profits by 385%. Gross profits also grew faster than sales, so the operating margin more than doubled (from 1.83% to 4.14%).

| | 2005 | 2021 | Change (%) |
|-----------------|----------------|----------------|------------|
| Inflation (CPI) | 100 | 136.5 | 36.5 |
| Sales | 172.24 bn. CZK | 368.62 bn. CZK | 114.02 |
| Gross profit | 3.15 bn. CZK | 15.3 bn. CZK | 385.72 |

1.83%

Tab. 5: Change in sales and profits

3 Proposals for future research

Gross profit/sales

It proposes four areas for extending the current analysis: extending the analysis period to 2022 and 2023 once all data is available. Comparison of the leading companies in the retail market with developments in the agricultural and food sectors, especially regarding sales and prices. Thirdly, a comparison of the evolution of profitability and margins of the leading companies within selected European markets with similar market structures (e.g., Germany and the UK). Fourth, an investment analysis in terms of changes in fixed assets is included.

4.14%

Conclusions

The 32 largest firms (market share 88% to 91% in 2021) were analysed, focusing on the six largest competitors, which include the nine largest retailers: Albert, Globus, Makro, REWE Group (Billa, Penny), Schwarz-Gruppe (Kaufland, Lidl) and Tesco (Tesco Stores and Tesco Franchise).

Between 2005 and 2021, there was a substantial increase in the market share of Lidl, Billa, Penny and Kaufland. These four companies share two foreign owners: Schwarz-Gruppe (Kaufland and Lidl) and REWE Group (Billa and Penny). Makro experienced the largest decrease in market share. The market share of the leading firms suggests that the food retail market has an asymmetric oligopoly structure. At the same time, the market share of the six most important competitors (according to ownership structure) is growing, with a current value of around 75%, which means that the Czech Republic is a concentrated market with a similar level as in the case of Estonia, Germany and Great Britain. As part of a European comparison, the Czech retail market reaches an average level, evidenced by the fact that there are markets with a lower (Hungary and Poland) and a higher degree of concentration (Austria and Slovakia) from the surrounding countries.

At the same time, there was an increase in market concentration (measured by the Herfindahl-Hirschman Index), which led to a change from a non-concentrated market to a slightly to moderately concentrated market after 2013. In the monitored period, fifteen mergers were approved by the Office for the Protection of Economic Competition. Only one of these mergers (the merger of competitors REWE Group with PLUS – DISCOUNT spol. s r.o. in 2008) led to a significant increase in the market share of the given company or to an increase in overall market concentration.

From 2017 to 2021, it is possible to identify a more stabilized development of the majority of examined indicators of profitability and margins (both commercial and operational) compared to previous years, which were characterized by a more volatile development of the examined indicators. Lidl has maintained the highest operating margin since 2012, several times that of other competitors.

An important conclusion of our study is the finding of a slightly increasing trade margin for the largest companies in the industry. Interestingly, this also applies to companies such as Makro and Globus, whose market share has declined. In addition to the upward trend in trading margin, our results imply an increase in aggregate gross profits and gross operating margin for the eight largest companies. These results consider individual companies' sales, which serve as weights.

Furthermore, between 2005 and 2021, sales and gross profits of the largest companies grew faster than inflation, with gross profit growth outpacing sales growth.

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