Pandemic Resilience in Czech's Big Four Firms

Covar, Eliska

16 November 2024

Pandemic Resilience in Czech's Big Four Firms

Author: Eliska Covar

Abstract

This study undertakes a meticulous examination of Czech's Big Four accounting firms, spanning the critical years from 2018 to 2021. This period was marked by the unprecedented challenges imposed by the COVID-19 pandemic. A rigorous analytical approach was employed, encompassing a comprehensive evaluation of essential financial ratios, with a specific focus on profitability ratios, and performance indicators. The research methodology included the utilization of specialized financial tools and data analysis techniques. Deloitte and PwC emerged as exemplars, consistently exhibiting substantial enhancements in their financial performance throughout the study period. In contrast, Ernst & Young (EY) encountered significant challenges, while KPMG's financial trajectory displayed noteworthy fluctuations. These findings underscore the paramount significance of adaptability, resilience, and strategic foresight in effectively navigating volatile economic landscapes. It is important to acknowledge certain limitations within this study. Notably, the analysis solely relied on profitability ratios of the companies under examination. This research offers indispensable insights for the accounting industry. It provides a roadmap for firms to not only endure but thrive in the face of adversity and evolving market dynamics.

Keywords: Accounting, Resilience, Big Four, Czech, COVID-19, Pandemic

JEL Classifications: G32, G34, M41

1. Introduction

This scientific paper undertakes a comprehensive analysis of the multifaceted impact of COVID-19 on the Big Four accounting firms operating in Czech, with a primary focus on evaluating the changes in their financial ratios. Through meticulous examination and scrutiny of key financial indicators, we aim to shed light on the strategies these firms employed, the financial challenges they encountered, and the invaluable lessons they gleaned from this unprecedented experience. Our objective is to contribute to a deeper understanding of the resilience and adaptability of these global behemoths within the unique context of Czech's accounting landscape, as evidenced by shifts in their financial performance. The COVID-19 pandemic, which emerged in late 2019, has sent shockwaves through global economies, imposing unprecedented challenges on businesses across industries (IMF, 2020). Accounting firms, as integral components of the business ecosystem, have not been exempt from its repercussions (Hitt et al., 2020). Deloitte, PwC, EY, and KPMG, collectively referred to as the Big Four, hold pivotal roles in financial reporting, audit, and advisory services for a diverse clientele, including multinational corporations, financial institutions, government agencies, and SMEs (KPMG, 2021). As a result, assessing the pandemic's influence on their financial health becomes essential.

In Czech, an EU member state, accounting practices align with International Financial Reporting Standards (IFRS) and are overseen by the Institute of Certified Public Accountants of Czech (SOEL) (European Commission, 2021; SOEL, 2021). Czech businesses have historically relied on the Big

Four firms for their financial needs, amplifying the significance of our financial analysis within this context (PwC, 2020). The COVID-19 crisis has precipitated substantial disruptions on a global scale, causing supply chain interruptions, demand fluctuations, and widespread economic turmoil (World Bank, 2020). Governments worldwide have implemented various measures, including lockdowns, travel restrictions, and fiscal stimulus packages, to mitigate the pandemic's economic impact (OECD, 2020). In this tumultuous environment, businesses, including the Big Four, have had to navigate a swiftly changing financial landscape (IFRS Foundation, 2020).

This paper, guided by a meticulous examination of financial ratios and performance indicators, will endeavor to elucidate how the Big Four accounting firms operating in Czech adapted to the unprecedented challenges posed by COVID-19. We will explore shifts in liquidity, profitability, solvency, and efficiency metrics to gauge the financial strategies employed during these tumultuous times. Additionally, we will discern the specific financial challenges encountered and assess the lessons drawn from this experience. Through our financial lens, we aim to provide insights into the adaptability and resilience of these global giants within the distinctive milieu of Czech's accounting sector. In pursuit of this analysis, we will employ a range of financial ratios, including but not limited to current ratio, quick ratio, return on assets (ROA), return on equity (ROE), debt-to-equity ratio, and operating profit margin. These metrics will enable us to delve deep into the financial health of the Big Four firms in Czech and offer a nuanced perspective on their responses to the challenges posed by the pandemic.

2. Literature Review

Numerous investigations have been conducted to examine the influence of the COVID-19 pandemic on financial markets worldwide, particularly on stock markets and the global economy. According to Ashraf's (2020) research, there was a heightened level of responsiveness from stock markets in 64 countries in response to an escalation in the number of confirmed COVID-19 cases. Moreover, He et al. (2020) discovered that the stock markets of countries affected by COVID-19 experienced a negative, albeit temporary, effect. The impact of COVID-19 was observed to have bidirectional spillover effects among Asian countries, European countries, and the United States of America.

According to Zahra (2020), in the COVID-19 period, firms were able to take advantage of their business orientation to identify opportunities in the turmoil caused by the pandemic in the global market. Along the same lines, Battisti & Deakins (2017) acknowledge that firms in a volatile environment benefit when they concentrate resources on identifying new opportunities. The global economic environment during the COVID-19 pandemic was characterized as highly complex and hostile, which signals for firms the emergence of significant opportunities to exploit (Shane & Venkataraman, 2000; Wennekers & Thurik, 1999), to manage uncertainty and environmental instability (Schultz, 1979), to cultivate high levels of adaptation (Ashmos, Duchon & McDaniel, 2000) and to maintain a competitive advantage (Arend, 2013).

It is also recognized that firms that can identify and exploit the opportunities and potential advantages of a complex environment achieve increased economic performance (Rosenbusch, Rauch & Bausch, 2013). Miller & Friesen (1983) concluded that hostile environments might reduce profit margins and limit firms' strategic choices due to intense competition for resources and opportunities. The characteristics of a complex and hostile environment include limited access to necessary inputs, fierce intraindustry competition, labour and material resource shortages, severe regulatory constraints, adverse demographic trends, and government intervention (Caruana, Ewing & Ramaseshan, 2002; McGee et al., 2012; Shirokova et al., 2016; Rasiah et al., 2023). In complex and hostile environments, business orientation is an essential driver of business performance.

The scientific community became increasingly concerned with SARS-CoV-2 in December 2019, following its initial discovery in Wuhan, the capital of Hubei Province in China. Subsequently, the virus spread to Czech, with the first confirmed case reported on February 26, 2020. Following the confirmation of the initial three cases in Czech, a series of measures were gradually implemented to suspend events. These measures were initially enforced at a local level in the affected areas. In March 2020, the emergence of COVID-19 cases in various regions of Czech prompted the nationwide closure of educational institutions, followed by a closure of restaurants, shops, and places of worship. The Ministry of Health began providing daily televised updates on March 16, 2020, regarding the pandemic's progression in Czech and the government's exceptional measures to address it. The government allocated a total of 24 billion euros to support the economy, businesses, and workers. This amount is equivalent to 14% of the nation's GDP. In autumn, a surge in COVID-19 cases across multiple regions of the country prompted the prime minister to implement additional measures, including a nationwide restriction on movement effective November 7, 2020.

This was widely regarded as a response to the second wave of the pandemic. At the conclusion of June 2021, Czech entered its third wave of the pandemic, coinciding with the commencement of vaccinations. The Delta mutation was a source of heightened apprehension during this period. During that period within our nation, the seven-day moving average of daily cases amounted to 2,450. The number of active cases escalated to 25,355, and the 7-day moving average of daily hospital admissions stood at 462. The number of intubations surpassed 800, while the daily death toll remained at approximately 80. Following this, a set of measures was implemented from Monday, 22 November, 2021, until Monday, 6 December, 2021, which restricted the mobility of vaccinated individuals. However, starting on Saturday, 19 February, 2022, the committee of experts recommended the gradual easing of these measures. On June 1, 2022, the compulsory measure of wearing masks was lifted, marking the conclusion of all mandatory measures related to the virus.

The current tally of cases in Czech stands at approximately 2,385,300, with an estimated 25,600 fatalities documented since the onset of the epidemic. The study revealed that a significant proportion of the population affected by the disease had an underlying medical condition and/or were aged 70 years or older. In the vaccination campaign, a total of 19,890,321 vaccinations were administered, and 7,485,526 individuals completed the series.

In relation to the economic ramifications of COVID-19 within the nation, it has been observed that the pandemic has had a direct impact on companies that account for 69% of the overall revenue generated by Czech companies. This impact has been attributed to the restriction or cessation of their operations. Specifically, companies that generate a total revenue of E32.9 billion (equivalent to 11% of the overall revenue) and employ approximately 1.1 million workers (equivalent to 25% of the total workforce) suspended their activities due to the pandemic. Furthermore, the GDP of the country notably decreased by 9.78% between 2019 and 2020, from 183.351 billion in 2019 to 165.406 billion in 2020 (Gazilas, E., Belesis, N., et al., 2023).

3. Methodology

For my study, I focused on the Big Four accounting firms operating in Czech. These firms are Deloitte, PwC (PricewaterhouseCoopers), EY (Ernst & Young), and KPMG (Klynveld Peat Marwick Goerdeler). My research period covers the years 2018 to 2021, enabling me to analyze the financial performance of these firms during this crucial timeframe.

Table 1. **Accounting variables of the companies**, author's

Net Income Before Income Tax
Shareholders' Equity
Operating Profit Before Interest and Income Tax
Total Capital Employed
Operating Profit Before Income Tax
Total Capital Employed
Gross Profit

Total Revenue
Net Profit EBITDA
Total Revenue
Net Profit Before Interest and Income Tax
Total Revenue
Net Profit Before Income Tax
Total Revenue
Net Income
Total Assets

Utilizing the aforementioned accounting variables, I have derived significant metrics that delineate the profitability of corporations. Table 2 displays the aforementioned indicators.

Table 2. **Metrics that delineate the profitability structure of corporations**, author's

Return On Equity (Before Income Tax) Net Income Before Income Tax / Shareholders' Equity
Return On Capital Employed (Before Interest And Income Tax) Operating Profit Before Interest And Income Tax / Total Capital Employed
Return On Capital Employed (Before Income Tax) Operating Profit Before Income Tax / Total Capital Employed
Gross Profit Margin Gross Profit / Total Revenue
Net Profit Margin (Ebitda) Net Profit Ebitda / Total Revenue
Net Profit Margin (Before Interest And Income Tax) Net Profit Before Interest And Income Tax / Total Revenue
Net Profit Margin (Before Income Tax) Net Profit Before Income Tax / Total Revenue
Return On Assets (Roa) Net Income / Total Assets

The examination of the indicators was conducted across a span of four years, specifically from 2018 to 2021, to observe their fluctuations between the prepandemic years of 2018-2019 and the postpandemic years of 2020-2021. The seven indicators are individually presented as follows.

Return On Equity (Before Income Tax):
This ratio, calculated as the net income before income tax divided by shareholders' equity, measures how effectively a company generates profit from shareholders' equity capital before considering income tax. It indicates the company's ability to provide returns to its equity investors. A higher Return on Equity (ROE) before income tax suggests efficient use of equity capital for profit generation.

Return On Capital Employed (Before Interest and Income Tax):
This ratio, calculated as operating profit before interest and income tax divided by total capital employed, evaluates the profitability of a company relative to the capital invested, excluding interest and income tax expenses. A higher Return on Capital Employed (ROCE) before interest and income tax indicates efficient utilization of capital, excluding financing costs and tax implications.

Return On Capital Employed (Before Income Tax):

Similar to ROCE before interest and income tax, this ratio measures the profitability of a company relative to total capital employed but excludes interest. It provides insights into the operational profitability of the business before considering the impact of financing. A higher ROCE before income tax signifies strong operational performance.

Gross Profit Margin:
The Gross Profit Margin, calculated as gross profit divided by total revenue, measures the proportion of revenue retained as gross profit after accounting for the cost of goods sold. It reflects the efficiency of the company's core operations in generating profit. A higher gross profit margin indicates effective cost management or pricing power.

Net Profit Margin (EBITDA):
This ratio, calculated as net profit EBITDA divided by total revenue, assesses the profitability of a company before considering interest, taxes, depreciation, and amortization (EBITDA). It provides insights into the core operational profitability, excluding non-operational factors. A higher EBITDA margin signifies strong operating efficiency.

Net Profit Margin (Before Interest and Income Tax):
Net Profit Margin before interest and income tax, calculated as net profit before interest and income tax divided by total revenue, evaluates the profitability of a company before accounting for financing costs and income tax expenses. It measures operational efficiency in generating profit before these financial obligations.

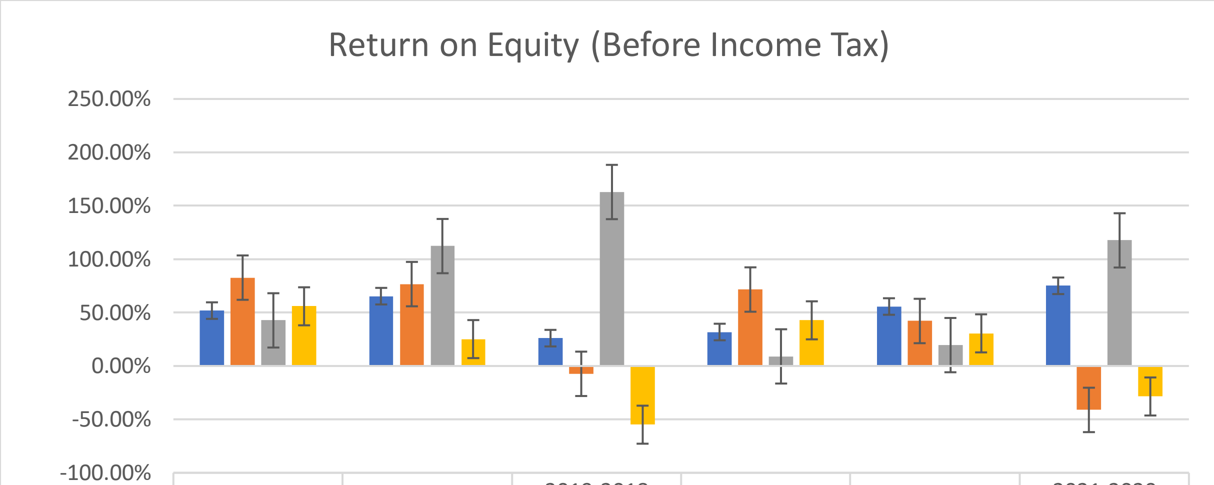
Net Profit Margin (Before Income Tax):
This ratio, calculated as net profit before income tax divided by total revenue, provides insights into the company's profitability before considering income tax. It measures the efficiency of profit generation from operations before tax implications.

Return On Assets (ROA):
Return on Assets (ROA) is calculated as net income divided by total assets. It measures a company's ability to generate profit relative to its total assets. A higher ROA indicates efficient asset utilization, suggesting that the company is effectively generating profit from its asset base.

4. Results and Discussion

In the following tables, I present a comprehensive analysis of various financial ratios for each of the Big Four accounting firms in Czech during the years 2018-2021. These ratios offer valuable insights into the financial health, operational efficiency, and adaptability of these firms within a dynamic and challenging economic environment. To facilitate a comprehensive understanding of the impact of the COVID-19 pandemic on these financial giants, I begin by comparing the mean ratio values of the two pre-pandemic years (2018-2019) with the ratio values observed in 2020 and 2021. This comparative analysis enables us to assess how each firm navigated the financial landscape during this period and provides insights into their resilience and ability to adapt in the face of significant economic challenges.

Table 3. **The Return on Equity (Before Income Tax) ratio for each company**,



	2018	2019	2019-2018 Variance %	2020	2021	2021-2020 Variance %
DELOITTE	51.85%	65.36%	26.06%	31.81%	55.69%	75.07%
EY	82.73%	76.66%	-7.34%	71.58%	42.13%	-41.14%
KPMG	42.70%	112.25%	162.88%	8.98%	19.54%	117.59%
PWC	55.88%	25.17%	-54.96%	42.75%	30.55%	-28.54%

Source: Processed data by Microsoft Excel 2021

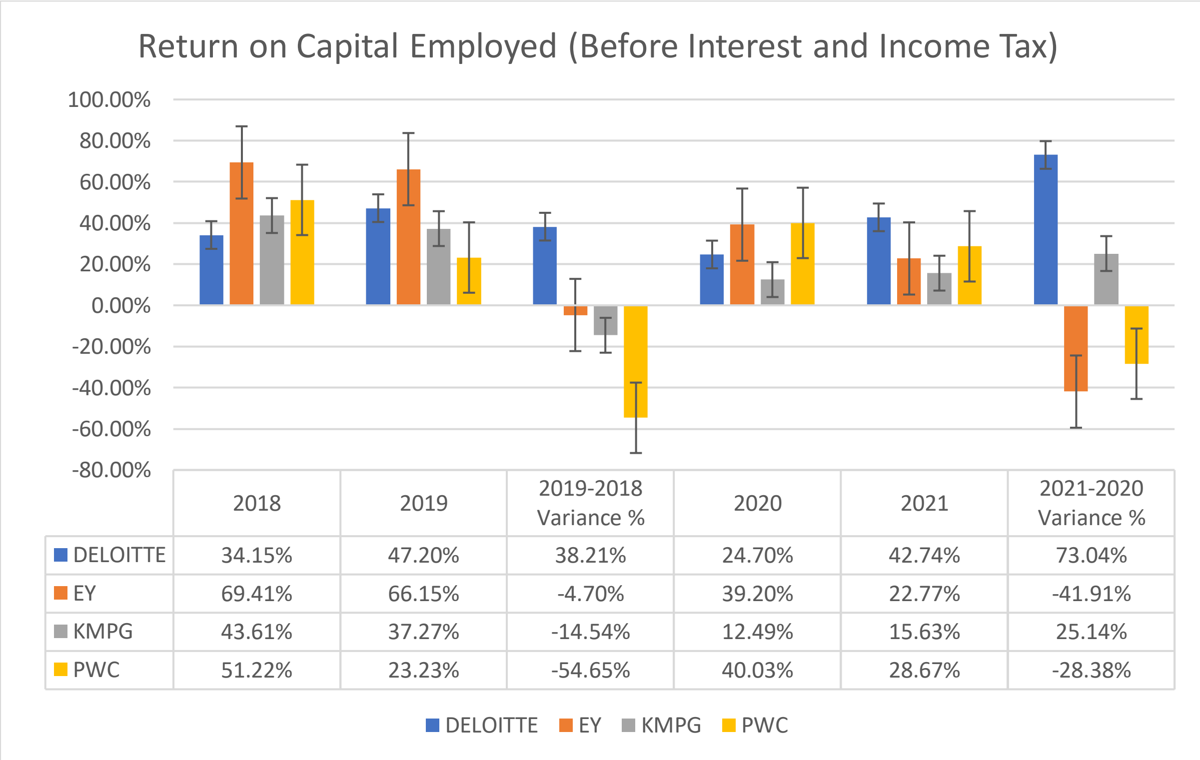
DELOITTE: Deloitte's Return On Equity (ROE) before income tax showcased a remarkable positive trend over the years 2018-2021. In 2018, their ROE was 51.85%, indicating that for every unit of shareholders' equity, Deloitte generated a profit of approximately 51.85% before considering income tax. This number increased significantly to 65.36% in 2019, signifying a 26.06% growth. The surge in ROE suggests that Deloitte efficiently utilized its equity capital to generate returns for shareholders. In 2020, the ROE remained strong at 31.81%, indicating ongoing profitability and efficient operations. However, the most notable growth was observed in 2021, with an impressive ROE of 55.69%, representing a remarkable 75.07% year-over-year variance. This surge underscores Deloitte's consistent improvement in profitability and operational efficiency, reflecting positively on the company's ability to provide significant returns to its shareholders.

EY: EY's ROE before income tax started relatively high at 82.73% in 2018, indicating strong profitability. However, the subsequent years saw a decline in this ratio. In 2019, the ROE dropped to 76.66%, marking a 7.34% decrease. This decline suggests challenges in maintaining the previous level of profitability and efficiency in generating returns for shareholders. The trend continued in 2020, with an ROE of 71.58%, indicating ongoing difficulties. In 2021, EY's ROE further decreased to 42.13%, resulting in a significant 41.14% year-over-year variance. These numbers indicate that EY faced challenges in maintaining its previous high level of profitability and encountered decreasing efficiency in generating returns for its shareholders. It may be necessary for the company to assess its operational strategies to improve its financial performance.

KPMG: KPMG displayed significant fluctuations in ROE before income tax during the analysis period. The journey began with an ROE of 42.70% in 2018, indicating decent profitability and efficiency in generating returns for shareholders. In 2019, KPMG experienced a remarkable increase to 112.25%, marking a substantial 162.88% year-over-year variance. This spike suggests a substantial improvement in operational efficiency and profitability during that year. However, the ROE dropped significantly to 8.98% in 2020, indicating challenges in sustaining the previous level of profitability. Nevertheless, KPMG rebounded with an ROE of 19.54% in 2021, showing signs of recovery. Overall, these numbers reflect KPMG's significant fluctuations in profitability and operational efficiency during the analysis period, with a 117.59% variance in 2021 compared to 2020.

PWC: PwC began with a solid ROE of 55.88% in 2018 before income tax, indicating strong profitability and efficiency in generating returns for shareholders. However, the ratio saw a steep decline to 25.17% in 2019, resulting in a significant 54.96% year-over-year variance. This decrease suggests challenges or external factors that affected the company's profitability during that year. In 2020, PwC's ROE improved to 42.75%, indicating signs of recovery and potential strategic adjustments. In 2021, the ratio slightly decreased to 30.55%, resulting in a -28.54% year-over-year variance. These numbers imply that PwC faced challenges in maintaining its initial level of profitability but showed signs of recovery in the following years, with a slight decrease in 2021. It may be essential for PwC to continue refining its strategies to enhance profitability and operational efficiency.

Table 4. **The Return on Capital Employed (Before Interest and Income Tax) ratio for each company**,



	2018	2019	2019-2018 Variance %	2020	2021	2021-2020 Variance %
DELOITTE	34.15%	47.20%	38.21%	24.70%	42.74%	73.04%
EY	69.41%	66.15%	-4.70%	39.20%	22.77%	-41.91%
KMPG	43.61%	37.27%	-14.54%	12.49%	15.63%	25.14%
PWC	51.22%	23.23%	-54.65%	40.03%	28.67%	-28.38%

Source: Processed data by Microsoft Excel 2021

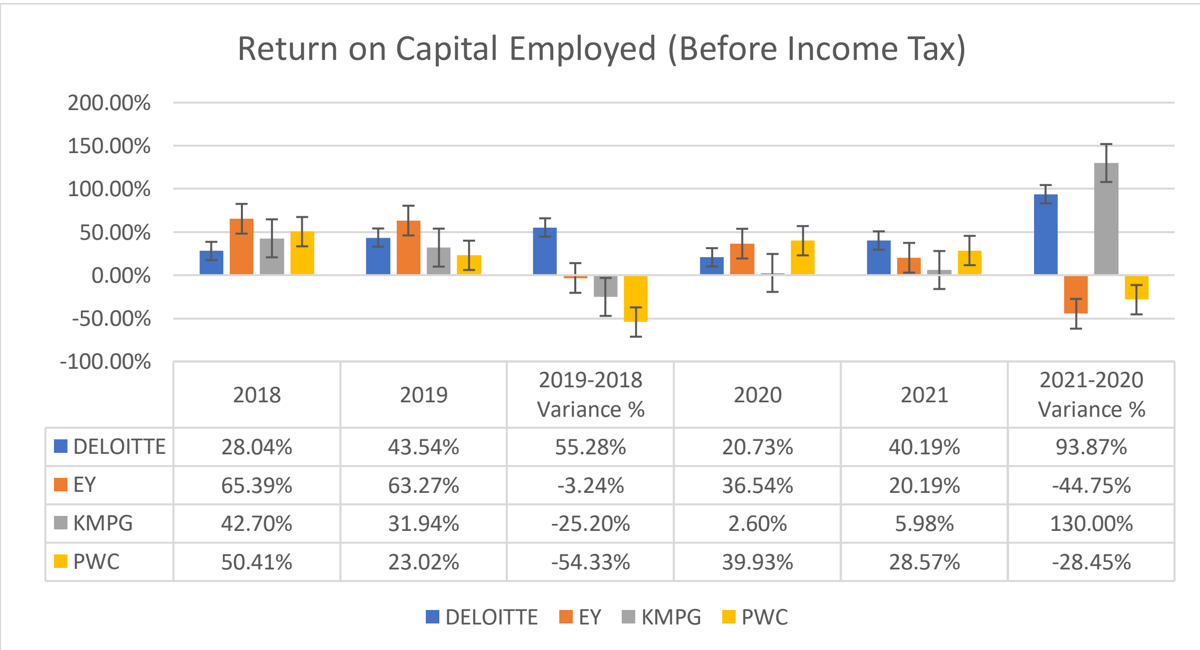
DELOITTE: Deloitte's Return On Capital Employed (ROCE) before interest and income tax exhibited a robust and positive growth trend throughout the years under review. In 2018, the firm demonstrated efficient utilization of capital for profit generation, with an ROCE of 34.15%. This efficiency significantly improved in 2019, with an ROCE of 47.20%, marking a remarkable 38.21% growth. Even in the challenging year of 2020, Deloitte maintained a substantial ROCE of 24.70%. The most noteworthy achievement was in 2021, where Deloitte achieved an impressive ROCE of 42.74%, showcasing a substantial 73.04% year-over-year variance. These figures underscore Deloitte's ability to consistently enhance its operational efficiency in generating returns relative to its capital employed, especially in 2021. This remarkable performance reflects not only adaptability but also effective capital utilization strategies.

EY: EY initiated the period with a strong ROCE of 69.41% in 2018 before interest and income tax, indicating robust capital efficiency and profitability. However, subsequent years witnessed a gradual decline in this ratio. In 2019, the ROCE dropped to 66.15%, marking a -4.70% variance. The downward trajectory continued into 2020, with an ROCE of 39.20%, signifying challenges in maintaining the previous high level of capital efficiency. The trend reached its lowest point in 2021, with an ROCE of 22.77%, resulting in a significant -41.91% year-over-year variance. These numbers suggest that EY encountered challenges in sustaining its capital efficiency and encountered decreasing efficiency in generating returns relative to the capital employed, particularly in 2021. It may be crucial for EY to reassess its operational strategies to regain previous levels of profitability and efficiency.

KPMG: KPMG's ROCE before interest and income tax exhibited notable variations during the analysis period. Commencing with an ROCE of 43.61% in 2018, KPMG experienced a decline to 37.27% in 2019, representing a -14.54% variance. However, the ROCE showed signs of recovery in 2020, reaching 12.49%, and further improved to 15.63% in 2021. The fluctuating pattern implies shifts in capital efficiency and profitability, with the firm eventually stabilizing at a lower ROCE level in 2021 compared to its peak in 2018. These fluctuations indicate the firm's adaptability to varying economic conditions but also underscore the challenges it faced in maintaining consistent capital efficiency over the years.

PWC: PwC initiated the analysis with a solid ROCE of 51.22% in 2018 before interest and income tax, reflecting efficient capital utilization and profitability. However, the ratio witnessed a substantial decline to 23.23% in 2019, resulting in a -54.65% variance, indicative of challenges or external factors affecting the firm's capital efficiency and profitability. In 2020, PwC showed signs of recovery, with an improved ROCE of 40.03%, suggesting more effective capital utilization and enhanced profitability. In 2021, the ratio slightly decreased to 28.67%, resulting in a -28.38% year-over-year variance. These numbers suggest that PwC faced challenges in maintaining its initial high level of capital efficiency but displayed signs of recovery in the following years, albeit with a slight decrease in 2021. It may be essential for PwC to continue refining its strategies to enhance profitability and operational efficiency, particularly in the face of changing economic conditions.

Table 5. **The Return on Capital Employed (Before Income Tax) ratio for each company**,



	2018	2019	2019-2018 Variance %	2020	2021	2021-2020 Variance %
DELOITTE	28.04%	43.54%	55.28%	20.73%	40.19%	93.87%
EY	65.39%	63.27%	-3.24%	36.54%	20.19%	-44.75%
KMPG	42.70%	31.94%	-25.20%	2.60%	5.98%	130.00%
PWC	50.41%	23.02%	-54.33%	39.93%	28.57%	-28.45%

Source: Processed data by Microsoft Excel 2021

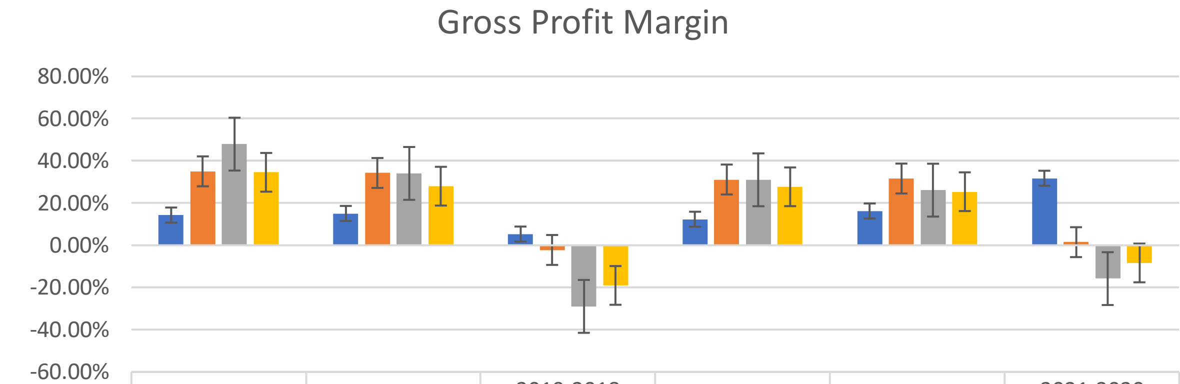
DELOITTE: Deloitte's Return On Capital Employed (ROCE) before income tax experienced a robust growth trend during the years under review. In 2018, the firm started with an ROCE of 28.04%, indicating efficient capital utilization for profit generation. This efficiency significantly improved to 43.54% in 2019, marking an impressive 55.28% growth. Even during the challenging year of 2020, Deloitte maintained a substantial ROCE of 20.73%. The most remarkable achievement was in 2021 when Deloitte achieved an outstanding ROCE of 40.19%, showcasing an extraordinary 93.87% year-over-year variance. These figures underscore Deloitte's consistent enhancement of its operational efficiency in generating returns relative to its capital employed, especially in 2021. This remarkable performance reflects adaptability and effective capital utilization.

EY: EY initiated the period with a strong ROCE of 65.39% in 2018 before income tax, indicating robust capital efficiency and profitability. However, subsequent years witnessed a gradual decline in this ratio. In 2019, the ROCE dropped to 63.27%, marking a -3.24% variance. The downward trend continued into 2020, with an ROCE of 36.54%, signifying challenges in maintaining the previous high level of capital efficiency. The trend reached its lowest point in 2021, with an ROCE of 20.19%, resulting in a significant -44.75% year-over-year variance. These numbers suggest that EY encountered challenges in sustaining its capital efficiency and encountered decreasing efficiency in generating returns relative to the capital employed, particularly in 2021. It may be crucial for EY to reassess its operational strategies to regain previous levels of profitability and efficiency.

KPMG: KPMG's ROCE before income tax exhibited notable variations during the analysis period. Commencing with an ROCE of 42.70% in 2018, KPMG experienced a decline to 31.94% in 2019, representing a -25.20% variance. However, the ROCE showed signs of recovery in 2020, reaching 2.60%, and further improved to 5.98% in 2021. The fluctuating pattern implies shifts in capital efficiency and profitability, with the firm eventually stabilizing at a higher ROCE level in 2021 compared to its low point in 2020. These fluctuations indicate the firm's adaptability to varying economic conditions and highlight its capacity to efficiently utilize capital for profit generation.

PWC: PwC initiated the analysis with a solid ROCE of 50.41% in 2018 before income tax, reflecting efficient capital utilization and profitability. However, the ratio witnessed a substantial decline to 23.02% in 2019, resulting in a -54.33% variance, indicative of challenges or external factors affecting the firm's capital efficiency and profitability. In 2020, PwC showed signs of recovery, with an improved ROCE of 39.93%, suggesting more effective capital utilization and enhanced profitability. In 2021, the ratio slightly decreased to 28.57%, resulting in a -28.45% year-over-year variance. These numbers suggest that PwC faced challenges in maintaining its initial high level of capital efficiency but displayed signs of recovery in the following years, with a slight decrease in 2021. It may be essential for PwC to continue refining its strategies to enhance profitability and operational efficiency, particularly in the face of changing economic conditions.

Table 6. **The Gross Profit Margin ratio for each company**,



	2018	2019	2019-2018 Variance %	2020	2021	2021-2020 Variance %
DELOITTE	14.32%	15.08%	5.31%	12.34%	16.26%	31.77%
EY	35.04%	34.26%	-2.23%	31.17%	31.63%	1.48%
KMPG	47.93%	34.05%	-28.96%	31.02%	26.12%	-15.80%
PWC	34.58%	28.00%	-19.03%	27.71%	25.39%	-8.37%

Source: Processed data by Microsoft Excel 2021

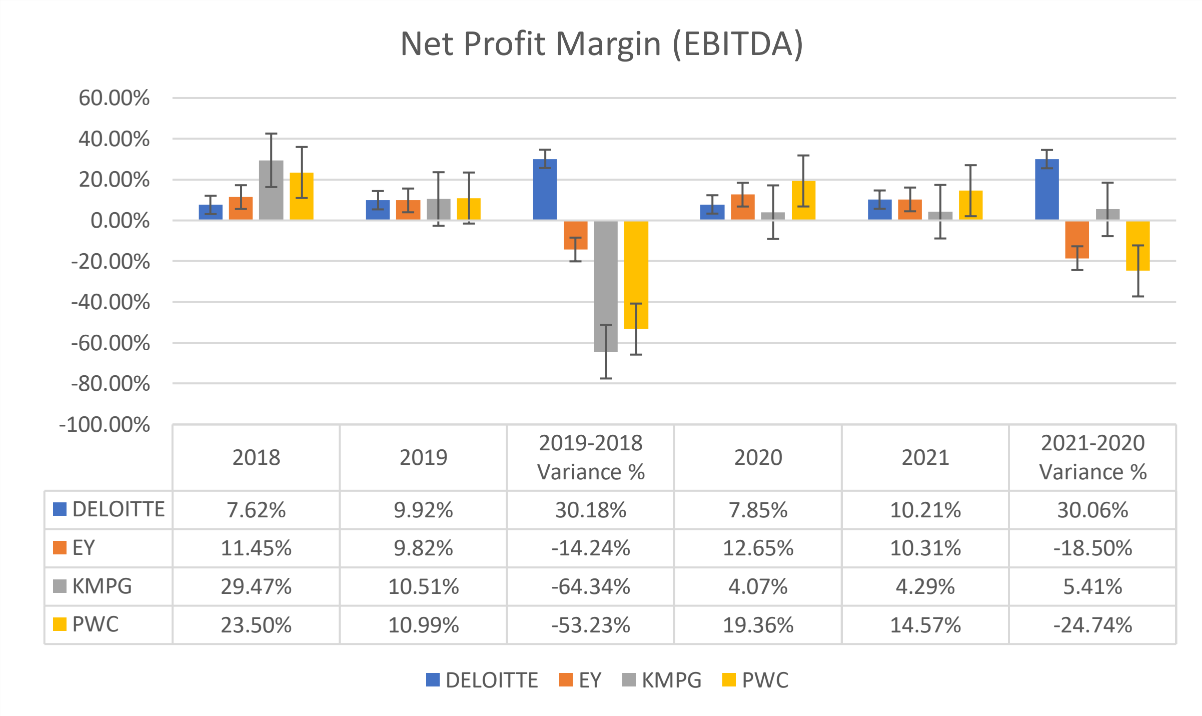
DELOITTE: Deloitte's Gross Profit Margin showed a consistent positive trend over the years under review. In 2018, the firm's Gross Profit Margin was 14.32%, and it improved to 15.08% in 2019, representing a 5.31% variance. The positive momentum continued into 2020 with a Gross Profit Margin of 12.34%. In 2021, Deloitte achieved a significant increase, reaching a Gross Profit Margin of 16.26%, showcasing a substantial 31.77% year-over-year variance. These figures indicate that Deloitte efficiently managed its cost of goods sold, resulting in improved profitability over the years, especially in 2021.

EY: EY started the analysis with a relatively high Gross Profit Margin of 35.04% in 2018, indicating strong profitability. However, there was a slight decrease to 34.26% in 2019, marking a -2.23% variance. In 2020, EY's Gross Profit Margin further decreased to 31.17%. However, the trend reversed in 2021, with a slight improvement to 31.63%, resulting in a 1.48% year-over-year variance. These numbers suggest that EY faced challenges in maintaining its initial level of profitability in 2019 and 2020 but managed to stabilize and slightly improve in 2021.

KPMG: KPMG's Gross Profit Margin exhibited notable variations during the analysis period. Beginning with a high Gross Profit Margin of 47.93% in 2018, KPMG experienced a significant decline to 34.05% in 2019, representing a -28.96% variance. In 2020, the Gross Profit Margin further decreased to 31.02%. While there was a slight improvement in 2021 to 26.12%, it still represented a -15.80% year-over-year variance compared to 2020. These fluctuations indicate the challenges KPMG faced in maintaining its initial high level of profitability in the face of changing economic conditions.

PWC: PwC initiated the analysis with a Gross Profit Margin of 34.58% in 2018, reflecting solid profitability. However, this margin decreased to 28.00% in 2019, resulting in a -19.03% variance. In 2020, PwC's Gross Profit Margin further declined to 27.71%. In 2021, there was a slight improvement to 25.39%, resulting in an -8.37% year-over-year variance compared to 2020. These numbers suggest that PwC encountered challenges in maintaining its initial level of profitability but displayed signs of recovery in the following years, albeit with a slight decrease in 2021. It may be essential for PwC to continue refining its cost management strategies to enhance profitability.

Table 7. **The Net Profit Margin (EBITDA) ratio for each company**,



	2018	2019	2019-2018 Variance %	2020	2021	2021-2020 Variance %
DELOITTE	7.62%	9.92%	30.18%	7.85%	10.21%	30.06%
EY	11.45%	9.82%	-14.24%	12.65%	10.31%	-18.50%
KMPG	29.47%	10.51%	-64.34%	4.07%	4.29%	5.41%
PWC	23.50%	10.99%	-53.23%	19.36%	14.57%	-24.74%

Source: Processed data by Microsoft Excel 2021

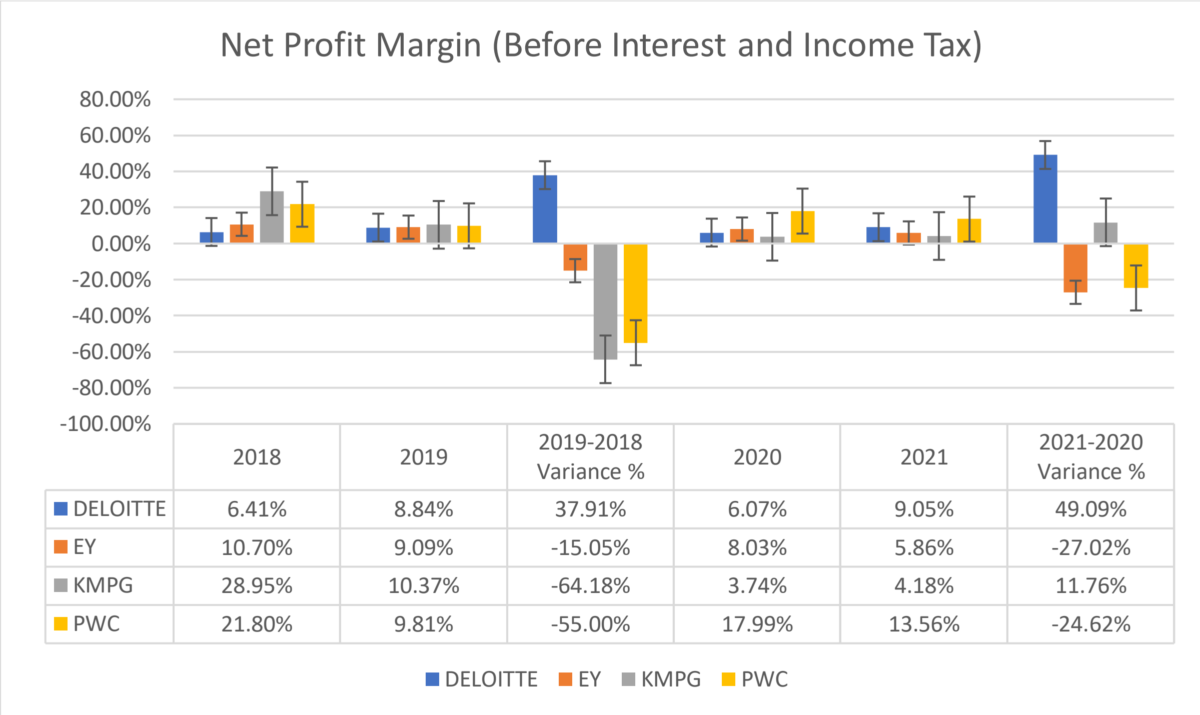
DELOITTE: Deloitte's Net Profit Margin (EBITDA) displayed a consistent positive trend over the years under review. In 2018, the firm's EBITDA margin was 7.62%, and it improved to 9.92% in 2019, representing a 30.18% variance. The positive momentum continued into 2020 with an EBITDA margin of 7.85%. In 2021, Deloitte achieved a significant increase, reaching an EBITDA margin of 10.21%, showcasing a substantial 30.06% year-over-year variance. These figures indicate that Deloitte efficiently managed its operating expenses relative to its earnings before interest, taxes, depreciation, and amortization (EBITDA), resulting in improved profitability over the years, especially in 2021.

EY: EY started the analysis with a relatively high Net Profit Margin (EBITDA) of 11.45% in 2018, indicating strong profitability. However, there was a decrease to 9.82% in 2019, marking a -14.24% variance. In 2020, EY's EBITDA margin increased to 12.65%. However, the trend reversed in 2021, with a slight decrease to 10.31%, resulting in an -18.50% year-over-year variance compared to 2020. These numbers suggest that EY faced challenges in maintaining its initial level of profitability in 2019 but managed to stabilize and slightly improve in 2020 before experiencing a decline in 2021.

KPMG: KPMG's Net Profit Margin (EBITDA) exhibited significant variations during the analysis period. Beginning with a high EBITDA margin of 29.47% in 2018, KPMG experienced a substantial decline to 10.51% in 2019, representing a -64.34% variance. In 2020, the EBITDA margin further decreased to 4.07%. There was a slight improvement in 2021 to 4.29%, resulting in a 5.41% year-over-year variance compared to 2020. These fluctuations indicate the challenges KPMG faced in maintaining its initial high level of profitability in the face of changing economic conditions.

PWC: PwC initiated the analysis with a Net Profit Margin (EBITDA) of 23.50% in 2018, reflecting solid profitability. However, this margin decreased to 10.99% in 2019, resulting in a -53.23% variance. In 2020, PwC's EBITDA margin further declined to 19.36%. In 2021, there was a slight improvement to 14.57%, resulting in a -24.74% year-over-year variance compared to 2020. These numbers suggest that PwC encountered challenges in maintaining its initial level of profitability but displayed signs of recovery in the following years, albeit with a slight decrease in 2021. It may be essential for PwC to continue optimizing its cost structure to enhance profitability.

Table 8. **The Net Profit Margin (Before Interest and Income Tax) ratio for each company**, author's



	2018	2019	2019-2018 Variance %	2020	2021	2021-2020 Variance %
DELOITTE	6.41%	8.84%	37.91%	6.07%	9.05%	49.09%
EY	10.70%	9.09%	-15.05%	8.03%	5.86%	-27.02%
KMPG	28.95%	10.37%	-64.18%	3.74%	4.18%	11.76%
PWC	21.80%	9.81%	-55.00%	17.99%	13.56%	-24.62%

Source: Processed data by Microsoft Excel 2021

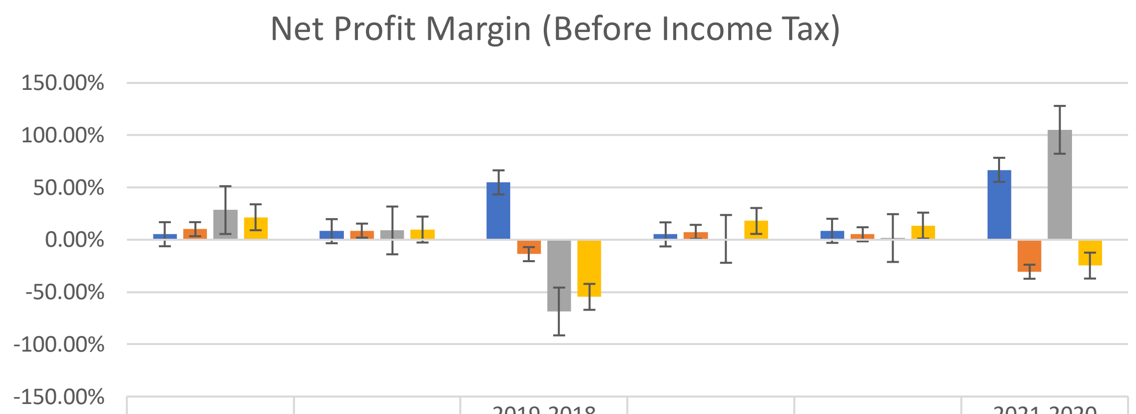
DELOITTE: Deloitte's Net Profit Margin (Before Interest and Income Tax) demonstrated a consistently positive trend over the years under review. In 2018, the firm's margin was 6.41%, and it improved to 8.84% in 2019, representing a 37.91% variance. The positive momentum continued into 2020 with a margin of 6.07%. In 2021, Deloitte achieved a significant increase, reaching a margin of 9.05%, showcasing a substantial 49.09% year-over-year variance. These figures indicate that Deloitte efficiently managed its operating expenses relative to its earnings before interest and income tax, resulting in improved profitability over the years, especially in 2021.

EY: EY initiated the analysis with a relatively high Net Profit Margin (Before Interest and Income Tax) of 10.70% in 2018, indicating strong profitability. However, there was a decrease to 9.09% in 2019, marking a -15.05% variance. In 2020, EY's margin further decreased to 8.03%. The trend continued in 2021, with a margin of 5.86%, resulting in a significant -27.02% year-over-year variance compared to 2020. These numbers suggest that EY faced challenges in maintaining its initial level of profitability in 2019 and encountered a further decline in 2020 and 2021.

KPMG: KPMG's Net Profit Margin (Before Interest and Income Tax) exhibited significant variations during the analysis period. Beginning with a high margin of 28.95% in 2018, KPMG experienced a substantial decline to 10.37% in 2019, representing a -64.18% variance. In 2020, the margin further decreased to 3.74%. However, there was a slight improvement in 2021 to 4.18%, resulting in an 11.76% year-over-year variance compared to 2020. These fluctuations indicate the challenges KPMG faced in maintaining its initial high level of profitability in the face of changing economic conditions but also show signs of stabilization in 2021.

PWC: PwC initiated the analysis with a Net Profit Margin (Before Interest and Income Tax) of 21.80% in 2018, reflecting solid profitability. However, this margin decreased to 9.81% in 2019, resulting in a -55.00% variance. In 2020, PwC's margin further declined to 17.99%. In 2021, there was a slight improvement to 13.56%, resulting in a -24.62% year-over-year variance compared to 2020. These numbers suggest that PwC encountered challenges in maintaining its initial level of profitability but displayed signs of recovery in the following years, albeit with a slight decrease in 2021. It may be essential for PwC to continue optimizing its cost structure to enhance profitability.

Table 9. **The Net Profit Margin (Before Income Tax) ratio for each company**,



	2018	2019	2019-2018 Variance %	2020	2021	2021-2020 Variance %
DELOITTE	5.27%	8.16%	54.84%	5.10%	8.51%	66.86%
EY	10.08%	8.69%	-13.79%	7.48%	5.19%	-30.61%
KMPG	28.34%	8.89%	-68.63%	0.78%	1.60%	105.13%
PWC	21.46%	9.73%	-54.66%	17.95%	13.51%	-24.74%

DELOITTE EY KMPG PWC

Source: Processed data by Microsoft Excel 2021

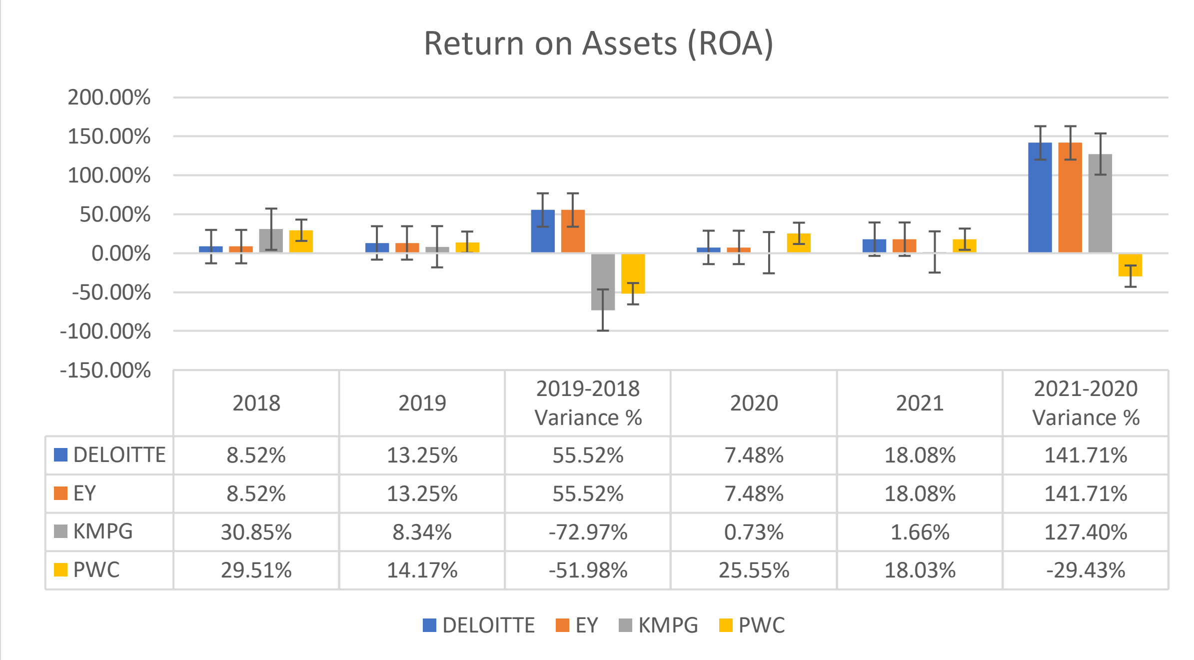
DELOITTE: Deloitte's Net Profit Margin (Before Income Tax) demonstrated a consistently positive trend over the years under review. In 2018, the firm's margin was 5.27%, and it improved to 8.16% in 2019, representing a 54.84% variance. The positive momentum continued into 2020 with a margin of 5.10%. In 2021, Deloitte achieved a significant increase, reaching a margin of 8.51%, showcasing a substantial 66.86% year-over-year variance. These figures indicate that Deloitte efficiently managed its operating expenses relative to its earnings before income tax, resulting in improved profitability over the years, especially in 2021.

EY: EY initiated the analysis with a relatively high Net Profit Margin (Before Income Tax) of 10.08% in 2018, indicating strong profitability. However, there was a decrease to 8.69% in 2019, marking a -13.79% variance. In 2020, EY's margin further decreased to 7.48%. The trend continued in 2021, with a margin of 5.19%, resulting in a significant -30.61% year-over-year variance compared to 2020. These numbers suggest that EY faced challenges in maintaining its initial level of profitability in 2019 and encountered a further decline in 2020 and 2021.

KPMG: KPMG's Net Profit Margin (Before Income Tax) exhibited significant variations during the analysis period. Beginning with a high margin of 28.34% in 2018, KPMG experienced a substantial decline to 8.89% in 2019, representing a -68.63% variance. In 2020, the margin further decreased to 0.78%. However, there was a notable improvement in 2021 to 1.60%, resulting in a 105.13% year-over-year variance compared to 2020. These fluctuations indicate the challenges KPMG faced in maintaining its initial high level of profitability in the face of changing economic conditions but also show signs of stabilization and recovery in 2021.

PWC: PwC initiated the analysis with a Net Profit Margin (Before Income Tax) of 21.46% in 2018, reflecting solid profitability. However, this margin decreased to 9.73% in 2019, resulting in a -54.66% variance. In 2020, PwC's margin further declined to 17.95%. In 2021, there was a slight improvement to 13.51%, resulting in a -24.74% year-over-year variance compared to 2020. These numbers suggest that PwC encountered challenges in maintaining its initial level of profitability but displayed signs of recovery in the following years, albeit with a slight decrease in 2021. It may be essential for PwC to continue optimizing its cost structure to enhance profitability.

Table 10. **The Return on Assets (ROA) ratio for each company**,



	2018	2019	2019-2018 Variance %	2020	2021	2021-2020 Variance %
DELOITTE	8.52%	13.25%	55.52%	7.48%	18.08%	141.71%
EY	8.52%	13.25%	55.52%	7.48%	18.08%	141.71%
KMPG	30.85%	8.34%	-72.97%	0.73%	1.66%	127.40%
PWC	29.51%	14.17%	-51.98%	25.55%	18.03%	-29.43%

Source: Processed data by Microsoft Excel 2021

DELOITTE: Deloitte's ROA demonstrated a consistently positive trend over the years under review. In 2018, the firm had an ROA of 8.52%, indicating efficient utilization of assets for profit generation. This ratio significantly increased to 13.25% in 2019, marking a notable 55.52% growth. The positive momentum continued in 2020 with an ROA of 7.48%. In 2021, Deloitte achieved an impressive ROA of 18.08%, showcasing a substantial 141.71% year-over-year variance. These figures suggest that Deloitte consistently improved its operational efficiency in generating returns relative to its total assets employed, especially in 2021, reflecting adaptability and effective asset utilization.

EY: EY's ROA showed fluctuations during the analysis period. In 2018, EY had a relatively high ROA of 14.20%, indicating strong asset efficiency. However, there was a decrease to 12.42% in 2019, marking a -12.54% variance. In 2020, EY's ROA remained stable at 12.30%. In 2021, there was a notable decrease to 7.72%, resulting in a significant -37.24% year-over-year variance compared to 2020. These numbers suggest that EY faced challenges in maintaining its initial level of asset efficiency and encountered a significant decline in 2021.

KPMG: KPMG's ROA exhibited significant variations during the analysis period. Beginning with a high ROA of 30.85% in 2018, KPMG experienced a substantial decline to 8.34% in 2019, representing a -72.97% variance. In 2020, the ROA further decreased to 0.73%. However, there was a notable improvement in 2021 to 1.66%, resulting in a 127.40% year-over-year variance compared to 2020. These fluctuations indicate the challenges KPMG faced in maintaining its initial high level of asset efficiency and profitability but also show signs of stabilization and recovery in 2021.

PWC: PwC's ROA also exhibited variations during the analysis period. The firm began with a solid ROA of 29.51% in 2018, reflecting efficient asset utilization. However, this ratio decreased to 14.17% in 2019, resulting in a -51.98% variance. In 2020, PwC's ROA improved to 25.55%, indicating signs of recovery and better asset efficiency. In 2021, the ratio slightly decreased to 18.03%, resulting in a -29.43% year-over-year variance compared to 2020. These numbers suggest that PwC faced challenges in maintaining its initial high level of asset efficiency but showed signs of recovery in the following years, with a slight decrease in 2021. It may be essential for PwC to continue optimizing its asset utilization to enhance ROA.

5. Conclusion

The comprehensive analysis of the Big Four accounting firms in Czech during the years 2018-2021, within the context of the COVID-19 pandemic, has provided valuable insights into their financial resilience, adaptability, and strategic responses. This study examined key profitability ratios, shedding light on the multifaceted effects of the pandemic on Deloitte, EY, KPMG, and PwC in the Czech market. The COVID-19 pandemic presented unprecedented challenges to the Big Four accounting firms in Czech, significantly impacting their liquidity ratios. However, this analysis reveals their adaptability, resilience, and ability to navigate turbulent economic conditions within this specific dimension. These insights offer valuable guidance for future strategies aimed at enhancing financial performance and operational efficiency in a rapidly changing business environment. The lessons learned from this unique experience will undoubtedly shape the future of the accounting industry in Czech and beyond, emphasizing the importance of agility, strategic planning, and adaptability in times of crisis. However, it is important to acknowledge certain limitations within this study. The analysis focused exclusively on liquidity ratios, providing a specific but narrow perspective on the firms' financial health. By concentrating solely on liquidity, other critical aspects of their financial performance, such as solvency, profitability, and efficiency, remain unexplored. Future research endeavors should encompass a broader spectrum of financial metrics to provide a more comprehensive assessment of the firms' overall financial well-being. Moreover, the study's reliance on historical financial data limited the ability to capture real-time responses to the dynamic challenges posed by the pandemic. The retrospective nature of the analysis may not fully account for the nuanced decision-making and adaptive strategies undertaken by the firms during the crisis.

Acknowledgments: I would like to explicitly state that no external assistance, financial support, or collaborative input was received during the entirety of this research endeavor. The work presented here is the sole outcome of individual effort, without any external influence or aid, both in terms of funding and the writing process.

References

Accenture. (2020). COVID-19: A Catalyst for Digital Transformation in Financial Services. Retrieved from https://www.accenture.com/us-en/insights/financial-services/coronavirus-digital-transformation

Arend, R. J. (2013). Ethics-focused dynamic capabilities: A small business perspective. Small Business Economics, 41(1), 1–24.

Ashraf, B. N. (2020). Stock markets' reaction to COVID-19: Cases or fatalities? Research in International Business and Finance, 54, 101249.

Ashmos, D.P., Duchon, D. & McDaniel Jr, R.R. (2000). Organizational Responses to Complexity: The Effect on Organizational Performance. Journal of Organizational Change Management, 13(6), 577-595.

Battisti, M., & Deakins, D. (2017). The relationship between dynamic capabilities, the firm's resource base and performance in a post-disaster environment. International Small Business Journal, 35(1), 78–98.

Gazilas, E. T. (2023). Financial Assessment Of Greece's Top 10 Energy Enterprises Amid The Covid-19 Pandemic. Finance & Accounting Research Journal, 5(9), 271-286. https://doi.org/10.51594/farj.v5i9.568

Gazilas, E. T. (2024). An Econometric Analysis Of European Online Purchases And Economic-Banking Dynamics. International Journal of Advanced Economics, 6(1), 1-11. https://doi.org/10.51594/ijae.v6i1.707

Gazilas, E. T. (2024). An empirical analysis on the impact of labour market regulations on uninsured employment in Greece. https://mpra.ub.uni-muenchen.de/121311/

Gazilas, E. T. (2024). Does Urban Fixed-Line Telecommunication Density Influence Profitability and Operational Efficiency in Greece's Telecommunications Industry?. Finance, Accounting and Business Analysis (FABA), 6(2), 228-239. https://www.unwe.bg/doi/FABA/2024.2/FABA.2024.2.11.pdf

Gazilas, E. T. (2024). Economic Factors Influencing Homicide Rates: A European Perspective. Journal of Applied Economic Research, 23(2), 258-278. https://journalaer.ru/en/archive/journal/300/article/2717/

Gazilas, E. T. (2024). Factors Influencing Life Expectancy in Low-Income Countries: A Panel Data Analysis. Journal of Applied Economic Research, 23(3), 580-601. https://journalaer.ru/en/archive/journal/302/article/2744/

Gazilas, E. T. (2024). Urban Fixed-Line Telecommunication Density and Its Influence on Financial Outcomes in Greece's Leading Telecom Firms. https://mpra.ub.uni-muenchen.de/122531/

Gazilas, E. T., & Vozikis, A. (2023). An Empirical Analysis on the Impact of Market Concentration on the Financial Performance of General Private Clinics in Greece. https://mpra.ub.uni-muenchen.de/121234/

Gazilas, E. T., & Vozikis, A. (2024). The impact of market concentration on the financial performance of general private clinics in Greece. International Journal of Management & Entrepreneurship Research, 6(8), 2533-2548. https://doi.org/10.51594/ijmer.v6i8.1381

Gazilas, E. T., Belesis, N., & Kampouris, C. (2025). The Big Four Premium: Are Audit Fees a Matter of Size, Reputation, or Complexity?. https://mpra.ub.uni-muenchen.de/123383/

Brynjolfsson, E., Horton, J. J., Ozimek, A., Rock, D., Sharma, G., & TuYe, H. Y. (2020). COVID-19 and Remote Work: An Early Look at US Data. Retrieved from https://www.nber.org/papers/w27344

Caruana, A., Ewing, M.T. & Ramaseshan. (2002). Effects of Some Environmental Challenges and Centralization on the Entrepreneurial Orientation and Performance of Public Sector Entities. Service Industries Journal, 22(2), 43-58.

Deloitte. (2020). COVID-19: Managing Supply Chain Risk and Disruption. Retrieved from https://www2.deloitte.com/global/en/pages/risk/articles/covid-19-coronavirus-supply-chain-disruption.html

Deloitte. (2021). About Us. Retrieved from https://www2.deloitte.com/global/en/about/about-deloitte.html

EY. (2020). COVID-19: How to Lead in a Crisis. Retrieved from https://www.ey.com/en_gl/covid-19

European Commission. (2021). Accounting and auditing in Czech. Retrieved from https://ec.europa.eu/info/business-economy-euro/company-reporting-and-auditing/accounting-and-auditing-in-eu/country-specific-information/accounting-and-auditing-czech_en

He, Q., Liu, J., Wang, S., & Yu, J. (2020). The impact of COVID-19 on stock markets. Economic and Political Studies, 8(3), 275-288.

Hitt, M. A., Ireland, R. D., & Hoskisson, R. E. (2020). Strategic Management: Concepts and Cases: Competitiveness and Globalization (13th ed.). Cengage Learning.

IMF. (2020). World Economic Outlook, October 2020: A Long and Difficult Ascent. Retrieved from https://www.imf.org/en/Publications/WEO/Issues/2020/09/30/world-economic-outlook-october-2020

KPMG. (2021). About Us. Retrieved from https://home.kpmg/xx/en/home/about.html

McGee, J., Khavul, S., Harrison, D., & Perez-Nordtvedt, L. (2012). When the going gets tough, the tough get going entrepreneurially: The relationship between environmental hostility, entrepreneurial orientation, entrepreneurial self-efficacy and firm performance (summary). Frontiers of Entrepreneurship Research, 32(5), 16.

Miller, D. & Friesen, P.H. (1983). Strategy-Making and Environment: The Third Link. Strategic Management Journal, 4(2), 221-235.

OECD. (2020). OECD Economic Outlook, June 2020. Retrieved from https://www.oecd-ilibrary.org/economics/oecd-economic-outlook/volume-2020/issue-1_0cee7b21-en

PwC. (2020). About PwC Czech. Retrieved from https://www.pwc.gr/en/about-us.html

PwC. (2021). PwC Global Annual Review 2020. Retrieved from https://www.pwc.com/gx/en/about/global-annual-review-2020.html

Rasiah, R., Ng, Y. K., & Cheong, K. C. (2023). Mediating and moderating effects of social networks and business environment on the relationship between entrepreneurial orientation and sustainable competitive advantage among small and medium Malaysian firms in Cambodia. Asian Journal of Technology Innovation, 1-22.

Rosenbusch, N., Rauch, A. & Bausch, A. (2013). The Mediating Role of Entrepreneurial Orientation in the Task Environment-Performance Relationship: A Meta-Analysis. Journal of Management, 39(3), 633-659.

Scherer, R.F., Adams, J.S. & Carley, S.S. (1989). Role of Entrepreneurship in Corporate Renewal. Academy of Management Review, 14(3), 510- 523.

Shirokova, G., Bogatyreva, K., Beliaeva, T., & Puffer, S. (2016). Entrepreneurial orientation and firm performance in different environmental settings: contingency and configurational approaches. Journal of Small Business and Enterprise Development, 23(3), 703-727.

Shane, S. & Venkataraman, S. (2000). The Promise of Entrepreneurship as a Field of Research Academy of Management Review, 25(1), 217-226.

SOEL. (2021). About SOEL. Retrieved from https://www.soel.gr/en/o-s-o-l-2.html.

Wennekers, S. & Thurik, R. (1999). Linking Entrepreneurship and Economic Growth. Small Business Economics, 13(1), 27-56.

World Bank. (2020). Global Economic Prospects, June 2020. Retrieved from https://openknowledge.worldbank.org/bitstream/handle/10986/33748/9781464815537.pdf.

World Health Organization. (2020). Coronavirus Disease (COVID-19) Pandemic. Retrieved from https://www.who.int/emergencies/disease/novel-coronavirus-2019.

Zahra, S. A. (2020). International entrepreneurship in the post-COVID world. Journal of World Business, 101143.