# INDUSTRY AVERAGE FINANCIAL RATIOS FOR GEORGIA

**Vakhtang Berishvili**
*Ilia State University, 0162, Tbilisi, Georgia*
*vakhtang.berishvili.1@iliauni.edu.ge*
**Lizi Berishvili**
*Caucasus University, 0102, Tbilisi, Georgia*
*l_berishvili@cu.edu.ge*

**Abstract**
*Current work is the first attempt to calculate industry average financial ratios for Georgia. Although some researches provide ratios for separate companies or groups of companies, no industry wide data analyses is published at our best knowledge for the moment of publication of our research. Main reason for absence of works is lack of financial statements information. Only two years ago, publication of financial statements for some companies become required in Georgia by regulations. Current research uses first opportunity of information availability in digital format. Analyses were done for the companies for following industries according to European industry standard classification system (NACE): Education (Section P), Information & Communication (section J), Transportation & Storage (Section H), Manufacturing (Section C), Electricity, Gas, Steam and Air Conditioning Supply (Section D).*

**Key words:** Industry Averages for Georgia, Financial Analyses, Accounting Ratios

**JEL Classification:** *G32, M41*

## I. INTRODUCTION

Financial accounting provides important information for decision-making, but data should be processed further to make more thorough decisions. Financial ratios provide deeper insight. (Horngren, Sundem, Elliott, & Philbrick, 2013). Ratios are widely used to determine company's financial strength and weaknesses, reveal trends, and assess risks. (Gibson, 2009) (Brigham & Ehrhardt, 2014). Ratios help to estimate business solvency. (Brindescu–Olariu, 2016). Ratio analyses is a very important part of company equity and debt valuation. (Soffer & Soffer, 2003).

During an analysis process, it is essential to make comparison of calculated ratios with other companies, competitors, benchmarks, and whole industry. (Cowen & Hoffer, 1982). Industry average financial ratios are important instruments for measurement and comparison in flowing fields: financial analyses, investments, decision-making regarding merger and acquisition, financial asset pricing, business management, education, business and scientific research, economic policymaking, etc. Ratio analysis is equally important for any size company. (Patrone, 1981). It is essential in financial industry for any kind of companies, not only for investment banks or for commercial banks, but also for microfinance organizations. ((CGAP), 2003).

Such information is readily provided by many private and public entities and academics in other countries. (Walton & Aerts, 2009). Georgia was lacking information of industry average data due to unavailability of financial statements for business entities. Only several companies, mainly in regulated sectors, (e.g. Banks), made their financial statements available for public. Although listed companies are required to publish their financial statements, since Georgian equity market is greatly underdeveloped, information of very few companies were available.

Starting from 2017 specific companies are required to provide (upload to special portal) audited financial statement in digital format.

During these two years, enough information accumulated to make researches able to pool out some useful information for analysis.

## II. METHODOLOGY

Data for the research was acquired form official portal of financial reports created in 2017 by the Service for Accounting, Reporting and Auditing Supervision Subdivision of the Ministry of Finance of Georgia (www.saras.gov.ge).

According to Georgian legislation, companies are divided in 4 categories. Entity fits in category, if it satisfies two of three listed criteria at the end of the reporting period and is not an entity of any of following categories (Table 1) (www.reportal.ge).

### Table 1 Company category definitions

| Category | Value of total assets | Annual Revenue | Average Number of Employees during the reporting period |
|---|---|---|---|
| **FIRST** | exceeds Georgian lari (GEL) 50 million | exceeds GEL 100 million | exceeds 250 persons |
| **SECOND** | does not exceed GEL 50 million | does not exceed GEL 100 million | does not exceed 250 persons. |
| **THIRD** | not exceed GEL 10 million | does not exceed GEL 20 million | does not exceed 50 persons. |
| **FORTH** | does not exceed GEL 1 million | does not exceed GEL 2 million | does not exceed 10 persons |

By the end of 2019 only companies of the first, second and third category were required to upload financial reports. And only the first and second categories were required to provide information in format that allows digital processing. Starting from the end of 2020 companies of third category will provide information in digital and standardized format.

Industries are defined according to Statistical Classification of Economic Activities in the European Community Rev.2 Level 1 Codes (NACE) (Statistical Classification of Economic Activities in the European Community, Rev. 2 (2008), 2008).

During our research, selection of ratios and companies was determined by constraints set by several factors. Main constraint is an unavailability of market data because of absence of equity market. This issue eliminated whole group of important financial ratios from the research. Another obstacle is that companies provide highly aggregated data. Ratios that require specific and detailed information could not be calculated. Reliability of information is the last but not the least one. Some companies incorrectly determine their industry or provide obviously erroneous information. During the analyses authors filtered out inaccurate and unclear information.

As a result, analyses were done for the companies for following industries according to European industry standard classification system (NACE): Information & Communication (section J), Transportation & Storage (Section H), Manufacturing (Section C), Electricity, Gas, Steam and Air Conditioning Supply (Section D), and Education (Section P).

Financial ratios names and calculation formula are provided in the Table 2.

### Table 2 Financial Ratios and Calculation Formulas

| Financial ratio | Calculation formula |
|---|---|
| Current ratio | Current assets / Current liabilities |
| Quick ratio | [Current assets – Inventories] / Current liabilities |
| Total assets turnover | Sales Revenue/ Total assets |
| Fixed assets turnover | Sales Revenue/ Net fixed assets |
| Inventory turnover | Cost of Sales / Inventories (or in case if Cost of Sales data is not available for the industry Sales Revenue / Inventories) |
| Days sales outstanding (DSO) | Receivables / [Annual sales / 365] |
| Accounts payable to Cost of Sales | Accounts payable / Cost of Sales |
| Total debt to total assets | Total debt / Total assets |
| Total debt to common equity | Total debt / Common Equity |
| Times-interest-earned (TIE) | Earnings before interest and taxes (EBIT) / Interest expense |
| Gross margin | Gross income (sales revenue – cost of sales) / Sales Revenue |
| Operating margin | Operating income (EBIT) / Sales Revenue |
| Profit margin | Net income / Sales Revenue |
| Return on total assets (ROA) | Net income / Total assets |
| Return on common equity (ROE) | Net income / Common equity |

| Return on invested capital (ROIC) | EBIT [1-profit tax rate] / Total invested capital (total debt + total equity) |
|---|---|
| Basic earning power (BEP) | Operating income (EBIT) / Total assets |

Formula parts that need calculations are in square brackets, comments and abbreviations are in round brackets.

In calculations, year-end amounts were used for balance sheet data and annual amounts for Income statement data. (Bernstein & Wild, 1998) (Lev, 1969). Inventory Turnover is calculated using Cost of Sales (or Cost of Goods Sold) amounts for the industries, where this data is available. In case if Cost of Sales amounts are not provided by majority of companies in the industry, ratio is calculated using Sales Revenue amounts for the whole industry. Corporate Profit tax rate in Georgia is 15%. DSO is expressed in number of days, other ratios are expressed as fractions or percentage points.

Following statistics are calculated for all ratios based on general approach: Average, median, upper and lower quartiles (Anderson, Sweeney, & Williams, 2011).

## III. RESULTS

Research revealed some industry specific features in financial reports. When majority of companies in the industry do not provide information needed for calculation explicitly and it is not possible to calculate, assemble or otherwise determine those amounts, ratios were not calculated. We specify our findings whenever it was symptomatic for whole industry.

Number of companies reviewed in industries are as following: Information & Communication - 13, Manufacturing – 80, Electricity, Gas, Steam and Air Conditioning Supply – 13, Transportation & Storage - 21, Education – 12.

Some companies report negative amounts in their reports (e.g. Operating Loss, Net Loss, Common Equity). If majority of companies in the industry report such negative data, negative average ratios were acquired for whole industry. For some ratios, negative sign alters meaning of the ratio (e.g. negative operating profit (EBIT) gives negative Times Interest Earned ratio, or negative Common Equity resulted from negative Retained Earnings, gives negative Debt to Equity ratio or ROE). User should be cautious using these industry average ratios.

Calculated Industry average financial ratios for Georgia are listed in tables 3-7.

**Table 3 Industry Average Financial Ratios for Information & Communication for Years 2018 and 2017**

| Industry - Information & Communication | Average | | Median | | Upper Quartile | | Lower Quartile | |
|---|---|---|---|---|---|---|---|---|
| Ratio | 2018 | 2017 | 2018 | 2017 | 2018 | 2017 | 2018 | 2017 |
| Current ratio | 3.12 | 5.08 | 0.88 | 1.07 | 2.16 | 5.72 | 0.39 | 0.48 |
| Quick ratio | 2.64 | 4.61 | 0.87 | 1.00 | 2.12 | 4.56 | 0.34 | 0.42 |
| Total assets turnover | 0.55 | 0.72 | 0.44 | 0.44 | 0.62 | 0.82 | 0.31 | 0.26 |
| Fixed assets turnover | 1.53 | 3.11 | 0.85 | 0.99 | 1.43 | 2.79 | 0.66 | 0.78 |
| Inventory turnover | 67.97 | 120.15 | 15.52 | 26.61 | 52.24 | 148.19 | 6.92 | 9.96 |
| Days sales outstanding (DSO) | 158.16 | 191.81 | 123.03 | 118.96 | 214.52 | 213.54 | 15.36 | 18.19 |
| Accounts payable to Cost of Sales | 0.79 | (0.01) | 0.40 | 0.16 | 1.01 | 0.28 | 0.05 | 0.04 |
| Total debt to total assets | 14.6% | 14.8% | 2.1% | 3.5% | 16.6% | 14.3% | 0.0% | 0.0% |
| Total debt to common equity | 238.1% | 608.8% | 2.3% | 3.9% | 154.3% | 46.7% | 0.0% | 0.0% |
| Times-interest-earned (TIE) | 4.34 | 19.02 | - | 9.59 | 3.80 | 33.52 | - | 1.06 |
| Gross Margin | 34.1% | 33.8% | 37.9% | 32.6% | 42.1% | 40.8% | 12.3% | 22.2% |
| Operating margin | 10.5% | 14.1% | 8.6% | 13.8% | 12.9% | 27.9% | -3.3% | -6.8% |
| Profit margin | -11.4% | -3.3% | 1.7% | 10.8% | 13.5% | 19.4% | -22.5% | -16.1% |
| Return on total assets (ROA) | -3.0% | 3.4% | 0.9% | 3.7% | 6.2% | 12.7% | -5.4% | -4.2% |
| Return on common equity (ROE) | -99.9% | -27.9% | -1.6% | 4.3% | 9.2% | 29.4% | -25.1% | -22.1% |
| Return on invested capital (ROIC) | 22.9% | 18.8% | 6.7% | 5.0% | 22.8% | 24.2% | 1.3% | 0.2% |
| Basic earning power (BEP) | -2.6% | 3.5% | 2.2% | 3.8% | 6.2% | 13.0% | -5.4% | -4.2% |

Common characteristic for companies in Information and Telecommunication industry is that most of them are experiencing losses during the periods of analyses (have negative net income) and substantial share of

companies have operating loss (negative operating profit). As a result, operating margins in lower quartile and/or profit margins in lower quartile and on average are negative.

**Table 4 Industry Average Financial Ratios for Transportation & Storage for Years 2018 and 2017**

| Industry - Transportation & Storage | Average | | Median | | Upper Quartile | | Lower Quartile | |
|---|---|---|---|---|---|---|---|---|
| Ratio | 2018 | 2017 | 2018 | 2017 | 2018 | 2017 | 2018 | 2017 |
| Current ratio | 14.27 | 17.44 | 2.75 | 3.34 | 6.54 | 12.30 | 1.76 | 1.38 |
| Quick ratio | 12.98 | 15.99 | 2.47 | 2.71 | 4.94 | 8.81 | 1.40 | 1.17 |
| Total assets turnover | 1.28 | 1.19 | 0.85 | 0.88 | 1.44 | 1.28 | 0.39 | 0.43 |
| Fixed assets turnover | 81.44 | 87.69 | 2.25 | 2.00 | 5.90 | 7.86 | 0.99 | 0.97 |
| Inventory turnover | 206.16 | 142.28 | 19.18 | 16.67 | 67.83 | 34.07 | 9.37 | 6.68 |
| Days sales outstanding (DSO) | 77.36 | 67.01 | 38.62 | 40.72 | 106.46 | 92.10 | 29.06 | 17.86 |
| Accounts payable to Cost of Sales | 0.33 | 0.35 | 0.11 | 0.11 | 0.14 | 0.34 | 0.08 | 0.05 |
| Total debt to total assets | 14.1% | 14.6% | 0.0% | 0.0% | 13.0% | 12.7% | 0.0% | 0.0% |
| Total debt to common equity | 20.5% | 7.0% | 0.0% | 0.0% | 14.9% | 14.6% | 0.0% | 0.0% |
| Times-interest-earned (TIE) | 4.81 | 11.07 | - | - | 3.46 | 5.26 | - | - |
| Gross Margin | 41.9% | 44.5% | 30.6% | 37.7% | 73.4% | 68.7% | 18.5% | 19.1% |
| Operating margin | 23.4% | 24.4% | 12.8% | 11.6% | 36.4% | 35.3% | 6.4% | 8.5% |
| Profit margin | 20.7% | 20.9% | 13.0% | 12.4% | 30.2% | 28.0% | 6.4% | 5.3% |
| Return on total assets (ROA) | 20.7% | 23.8% | 8.5% | 7.6% | 17.5% | 26.2% | 6.7% | 3.1% |
| Return on common equity (ROE) | 64.5% | 61.7% | 13.1% | 22.3% | 43.8% | 45.1% | 7.7% | 5.0% |
| Return on invested capital (ROIC) | 57.2% | 58.5% | 11.4% | 16.7% | 43.5% | 46.9% | 5.4% | 10.3% |
| Basic earning power (BEP) | 23.3% | 26.7% | 8.3% | 11.7% | 22.2% | 24.3% | 5.0% | 7.4% |

Substantial part of companies in Transportation & Storage industry have no debt. As a result, lower quartile and median of ratios related to debt (Total debt to total assets, Total debt to common equity, Times-interest-earned (TIE)) are zero or close to zero.

**Table 5 Industry Average Financial Ratios for Manufacturing for Years 2018 and 2017**

| Industry - Manufacturing | Average | | Median | | Upper Quartile | | Lower Quartile | |
|---|---|---|---|---|---|---|---|---|
| Ratio | 2018 | 2017 | 2018 | 2017 | 2018 | 2017 | 2018 | 2017 |
| Current ratio | 3.86 | 7.17 | 1.56 | 1.61 | 4.04 | 4.33 | 0.94 | 0.96 |
| Quick ratio | 2.14 | 5.30 | 0.80 | 0.78 | 1.97 | 2.20 | 0.36 | 0.44 |
| Total assets turnover | 1.23 | 1.22 | 1.23 | 1.04 | 1.76 | 1.67 | 0.64 | 0.58 |
| Fixed assets turnover | 5.26 | 7.01 | 2.86 | 2.77 | 4.94 | 4.49 | 1.52 | 1.58 |
| Inventory turnover | 5.61 | 6.94 | 3.70 | 3.92 | 6.96 | 8.36 | 1.78 | 2.14 |
| Days sales outstanding (DSO) | 117.23 | 73.91 | 41.33 | 44.54 | 103.97 | 107.08 | 27.86 | 24.32 |
| Accounts payable to Cost of Sales | 4.30 | 0.34 | 0.16 | 0.16 | 0.38 | 0.30 | 0.06 | 0.07 |
| Total debt to total assets | 53.8% | 32.0% | 22.6% | 21.8% | 47.7% | 49.9% | 4.1% | 6.8% |
| Total debt to common equity | 109.7% | 17.1% | 22.1% | 22.6% | 84.0% | 69.2% | 2.1% | 0.0% |
| Times-interest-earned (TIE) | 37.71 | 13.54 | 4.68 | 3.19 | 16.41 | 12.78 | 1.09 | 0.03 |
| Gross Margin | 28.8% | 22.6% | 21.2% | 22.6% | 37.6% | 38.9% | 13.5% | 15.1% |
| Operating margin | 3.1% | 10.8% | 7.3% | 7.5% | 15.7% | 17.0% | 1.5% | 0.1% |
| Profit margin | 6.7% | 5.4% | 6.4% | 6.8% | 15.8% | 17.6% | -0.9% | -1.1% |
| Return on total assets (ROA) | 7.6% | 8.3% | 6.3% | 7.6% | 16.8% | 17.9% | -1.2% | -2.2% |
| Return on common equity (ROE) | 21.3% | 24.1% | 18.2% | 15.9% | 47.4% | 43.4% | 1.5% | 4.3% |
| Return on invested capital (ROIC) | 6.5% | 10.6% | 9.0% | 8.0% | 20.0% | 22.6% | 1.7% | 0.0% |
| Basic earning power (BEP) | 8.5% | 8.5% | 7.5% | 7.4% | 16.7% | 21.7% | 2.0% | 0.0% |

No specific common features that complicates or distorts analyses were observed in Manufacturing industry.

**Table 6 Industry Average Financial Ratios for Electricity, Gas, Steam and Air Conditioning Supply for Years 2018 and 2017**

| Industry - Electricity, Gas, Steam and Air Conditioning Supply | Average | Median | Upper Quartile | Lower Quartile |
|---|---|---|---|---|

| Ratio | 2018 | 2017 | 2018 | 2017 | 2018 | 2017 | 2018 | 2017 |
|---|---|---|---|---|---|---|---|---|
| Current ratio | 1.66 | 1.75 | 0.80 | 1.31 | 1.68 | 2.56 | 0.26 | 0.23 |
| Quick ratio | 1.56 | 1.66 | 0.80 | 1.29 | 1.34 | 2.51 | 0.26 | 0.22 |
| Total assets turnover | 0.43 | 0.33 | 0.26 | 0.25 | 0.40 | 0.30 | 0.16 | 0.13 |
| Fixed assets turnover | 0.80 | 0.70 | 0.36 | 0.34 | 0.44 | 0.39 | 0.18 | 0.14 |
| Inventory turnover | 34.68 | 29.44 | - | - | 7.71 | 14.84 | - | - |
| Days sales outstanding (DSO) | 153.07 | 126.49 | 58.75 | 68.52 | 95.97 | 209.53 | 38.39 | 35.64 |
| Accounts payable to Cost of Sales | 2.17 | 3.82 | 0.15 | 0.14 | 0.26 | 0.17 | 0.10 | 0.08 |
| Total debt to total assets | 52.3% | 47.7% | 21.3% | 21.6% | 74.3% | 77.5% | 8.1% | 12.8% |
| Total debt to common equity | -195.2% | -181.7% | 9.8% | 15.6% | 27.8% | 30.0% | 0.0% | 0.0% |
| Times-interest-earned (TIE) | 2.59 | 4.43 | 1.68 | 1.57 | 3.72 | 3.10 | 0.68 | 1.28 |
| Gross Margin | 79.2% | 72.5% | 96.3% | 90.3% | 100.0% | 100.0% | 51.4% | 50.3% |
| Operating margin | 25.4% | -16.2% | 15.8% | 28.7% | 45.6% | 42.1% | 3.8% | 9.3% |
| Profit margin | 5.1% | -40.5% | 3.7% | 14.3% | 24.6% | 27.9% | -10.9% | 5.1% |
| Return on total assets (ROA) | 2.3% | -1.6% | 1.7% | 4.3% | 10.8% | 8.0% | -3.3% | 1.3% |
| Return on common equity (ROE) | 32.7% | 8.8% | 11.6% | 7.5% | 17.5% | 32.2% | 2.2% | 1.3% |
| Return on invested capital (ROIC) | 5.8% | 10.9% | 6.0% | 7.0% | 11.1% | 11.1% | 1.0% | 2.3% |
| Basic earning power (BEP) | 6.6% | 2.7% | 6.4% | 7.6% | 12.6% | 11.3% | 1.2% | 2.6% |

For the Electricity, Gas, Steam and Air Conditioning Supply industry, very low level of inventories is common. As a result, Inventory turnover is zero or almost zero.

**Table 7 Industry Average Financial Ratios for Education for Years 2018 and 2017**

| Industry - Education | Average | | Median | | Upper Quartile | | Lower Quartile | |
|---|---|---|---|---|---|---|---|---|
| Ratio | 2018 | 2017 | 2018 | 2017 | 2018 | 2017 | 2018 | 2017 |
| Current ratio | 5.02 | 2.75 | 0.76 | 0.89 | 1.43 | 1.97 | 0.64 | 0.52 |
| Quick ratio | 6.34 | 3.34 | 0.79 | 1.64 | 1.35 | 1.85 | 0.46 | 0.85 |
| Total assets turnover | 0.54 | 0.55 | 0.60 | 0.52 | 0.65 | 0.68 | 0.41 | 0.47 |
| Fixed assets turnover | 3.01 | 2.81 | 0.97 | 0.93 | 1.61 | 1.48 | 0.71 | 0.67 |
| Inventory turnover | 68.59 | 52.34 | 49.64 | 36.72 | 115.57 | 74.67 | 16.73 | 19.67 |
| Days sales outstanding (DSO) | 69.31 | 93.78 | 44.02 | 68.28 | 65.85 | 126.70 | 14.43 | 36.75 |
| Accounts payable to Cost of Sales | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| Total debt to total assets | 33.0% | 30.8% | 30.9% | 30.0% | 46.4% | 45.0% | 2.7% | 0.5% |
| Total debt to common equity | 483.5% | 141.0% | 48.5% | 31.0% | 109.9% | 203.1% | 0.4% | 0.0% |
| Times-interest-earned (TIE) | 0.89 | 17.18 | 3.19 | 5.47 | 6.11 | 8.29 | 0.44 | 3.10 |
| Gross Margin | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| Operating margin | -13.2% | -107.8% | 25.9% | 23.5% | 35.1% | 25.4% | 7.0% | 17.0% |
| Profit margin | -20.9% | -112.6% | 13.8% | 16.6% | 23.6% | 19.7% | -1.2% | 9.1% |
| Return on total assets (ROA) | 8.0% | 10.3% | 8.3% | 9.3% | 16.3% | 11.8% | -0.6% | 4.8% |
| Return on common equity (ROE) | -15.4% | 28.0% | 16.4% | 29.3% | 35.3% | 39.8% | -4.3% | 11.7% |
| Return on invested capital (ROIC) | 19.2% | 31.9% | 25.3% | 20.5% | 30.4% | 39.2% | 7.0% | 15.6% |
| Basic earning power (BEP) | 15.5% | 17.7% | 14.6% | 12.7% | 25.7% | 21.1% | 6.6% | 11.7% |

Majority of companies in education industry does not provide Cost of Sales information, thus it was not possible to calculate Accounts Payable to Cost of Sales and Gross margin ratios. Inventory Turnover ratio is calculated using sales revenue amounts instead of cost of sales amounts.

**IV. REFERENCES**

1.  (CGAP), C. G. (2003). Microfinance consensus guidelines: Definitions of selected financial terms, ratios and adjustments for microfinance. CGAP/The World Bank Group.
2.  Anderson, D. R., Sweeney, D. J., & Williams, T. A. (2011). Statistic For Business and Economics 11e. South-Western Cengage Learning.
3.  Bernstein, L. A., & Wild, J. J. (1998). Financial statement analysis: Theory, application, and interpretation. Irwin/McGrow-Hill.

4. Brigham, E. F., & Ehrhardt, M. C. (2014). Financial Management Theory & Practice. (14th, Ed.) South-Western Cengage Learning.
5. Brindescu–Olariu, D. (2016). Solvency ratio as a tool for bankruptcy prediction. Ecoforum Journal, 5(2).
6. Cowen, S. S., & Hoffer, J. A. (1982). Usefulness of financial ratios in a single industry. Journal of Business Research, 103-118.
7. Gibson, C. H. (2009). Financial reporting & analysis: using financial accounting information 11th ed. South-Western Cengage Learning.
8. Horngren, C. T., Sundem, G. L., Elliott, J. A., & Philbrick, D. (2013). Introduction to financial accounting. Pearson Higher Ed.
9. Lev, B. (1969). Industry averages as targets for financial ratios. Journal of Accounting Research, 290-299.
10. Patrone, F. L. (1981). Financial ratio analysis for the small business. Journal of Small Business Management.
11. (www.reportal.ge) Reporting Portal of Georgia. (n.d.). Retrieved from https://reportal.ge/
12. (www.saras.gov.ge) Sevice for Accounting, Reporting and Auditing Supervision of Georgia. (n.d.). Retrieved from https://www.saras.gov.ge/en/Home/
13. Soffer, L. C., & Soffer, R. J. (2003). Financial statement analysis: A valuation approach. Pearson College Division.
14. Statistical Classification of Economic Activities in the European Community, Rev. 2 (2008). (2008). Retrieved from https://ec.europa.eu/eurostat/ramon/nomenclatures/index.cfm?TargetUrl=LST_NOM_DTL&StrNom=NACE_REV2
15. Walton, P., & Aerts, W. (2009). Global financial accounting and reporting: principles and analysis. Cengage Learning EMEA.