



Evaluation and Assessment of Annual Reports of Bayer AG and Siemens AG Companies from 2020 to 2022 Inclusive



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Abstract

The primary purpose of this study is to compare Bayer AG and Siemens AG companies' annual reports from 2020 to 2022 inclusive. It is worthwhile mentioning that Bayer AG and Siemens are two different sectors and have been listed in the DAX list of Germany. To achieve the main objective, the author evaluates financial statements of mentioned companies from 2020 to 2022 inclusive in the case of assets, liabilities, cash flow statement inclusive of cash flow, free cash flow, and goodwill. In-depth review in the annual reports and related scholarly articles to support the remarkable concepts was taken. Findings support the notion that two different companies which are completely distinguishable based on their different sectors and indicating Siemens AG and Bayer AG are agile companies. However, Siemens AG is much better due to its large size. The superior contribution of this assignment or short study is to provide a comprehensive literature relevant to concepts and explication of them in-depth.

Keywords: Financial Management; Cash Flow; Free Cash Flow; Free Cash Flow to Equity; Goodwill; Bayer AG Company; Siemens Company.

1. Introduction

In the tense and stringent competitive era among companies, all businesses especially international ones are striving to gain a sustainable competitive advantage. It is not only limited to international and large companies but also domestic companies and small firms. According to the existing literature, there are many ways in which companies can take beneficial advantages of market instability. Among them, one potent way is various types of funding businesses in order to increase return on investment, economic benefits, and preventing economic stagnation.

Literature review recapitulates the remarkable and prominent roles of cash flow, theories and models in the flourishing business including large and small ones which will be reviewed in the main body section. Cash flow is a conspicuous concept and plays a pivotal role in determining solvency, plans for the future of a company, past expenses, and even possible bankruptcy (Ehrhardt, 2011). It is worthwhile mentioning that cash flow is a substantial independent object of the company financial management (Vovok, 2013). On top of that, in the study by (Megginson, 2010), theories and models relevant to corporate financing decisive decision making have been discussed such as "the role of financial theory and evidence, capital structure theory, and risk, return, market efficiency" (Megginson, 2010). The principal objective of the current assignment is to provide an opportunity for evaluation and assessment of annual reports of two companies which are Bayer AG and Siemens in order to understand the position and their crucial importance in achievement of final performance and economic benefits. To achieve this, author of the assignment selected annual reports of companies from 2020 to 2022 inclusive, and brought information into the discussion.

The remainder of the current assignment is delineated as follows. Firstly, the learning outcomes which are understanding principles of financial management and financial statement, innovative analysis of corporate finance structure, theories and models in corporate financing decisions, economic advantages of business financing, and some essentials concepts related to the current assignment will be explicated in-depth separately. Secondly, based on the annual reports of the selected companies listed in the DAX which are Bayer AG and Siemens, income statements

and balance sheets of them from 2020 to 2022 will be reviewed and thenceforth, all relevant information of the mentioned companies such as assets, liabilities, net income, cash flow, and value of goodwill will be calculated or evaluated. Lastly, as the nature of any assignment, conclusions will be elaborated in-details for each selected companies and comparison between Bayer AG and Siemens will be stated in accordance with the objectives of the present assignment.

2. Main Body of the Assignment

2.1. Principles of Financial Management and Financial Statement

The principles of accounting and financial management encompass a range of key concepts and practices. These include the analysis of business transactions, the adjusting process, and the completion of the accounting cycle (Reeve *et al.*, 2009; Warren *et al.*, 2018). Accounting principles serve as a guide in summarizing and disclosing financial information, which is crucial for both internal and external stakeholders (Maulina, 2019). The use of accounting information and financial statements, the measurement of business income, and the completion of the accounting cycle are also important components of these principles (Needles *et al.*, 2011). These principles are essential for ensuring the accuracy and transparency of financial information, and for making informed business decisions. Therefore, it can be deduced that making decisive decisions will be really pragmatic in order to minimizing risky decisions and jeopardizing the company in the problematic situations.

Financial statement analysis is a crucial tool for various stakeholders, including investors, managers, and government agencies (Ives, 2007). It allows for the evaluation of a company's performance in terms of liquidity, profitability, and solvency (Zack, 2012).

2.2. Assets and Liabilities of Siemens (2020-2022) Inclusive

The measurement method for current assets are inclusive of cash, short-term investments, accounts receivable, and inventories (Ehrhardt, 2011). Similarly, current liabilities are inclusive of accounts payable, notes payable, and accruals (Ehrhardt, 2011). The annual report of the Siemens company from 2020 to 2022 inclusive contains sufficient information related to total assets and liabilities of the company. Table 1 represents the net assets position and liabilities in the Siemens company. Given information, it is obvious that trend of total assets increased from 2020 to 2022. To exemplify, total assets increased by %9 from 2021 to 2022. It is also notable that the total liabilities increased by %7 from 2021 to 2022.

Table-1. Assets and Liabilities of Siemens Company

| (In millions of €) | 2020 | 2021 | 2022 |
|--------------------------------------|---------|---------|---------|
| Total Current Assets | 52,968 | 52,298 | 58,829 |
| Total Non-Current Assets | 70,928 | 87,074 | 92,673 |
| Total Assets | 123,897 | 139,372 | 151,052 |
| Total Current Liabilities | 34,117 | 40,000 | 42,686 |
| Total Non-Current Liabilities | 49,957 | 50,381 | 54,011 |
| Total Liabilities | 88,074 | 90,381 | 96,697 |

2.3. Assets and Liabilities of Bayer AG (2020-2022) Inclusive

The annual report of the Bayer AG Company from 2020 to 2022 inclusive contains sufficient information related to total assets and liabilities of the company. Table 2 represents the net assets position and liabilities in the Bayer AG company. Given information, it is obvious that trend of total assets increased from 2020 to 2022. To exemplify, total assets increased by %3.9 from 2021 to 2022. It is also notable that the total liabilities decreased by minus %1.3 from 2021 to 2022. Another point to take into consideration is that non-current assets decreased by minus %0.6. In contrast to decreasing non-current assets, current assets increased by % 15. 9. These results can be indicative of a positive outcome related to reduction in goodwill which can support better performance of the Bayer AG company from 2020 to 2022 inclusive.

Table-2. Assets and Liabilities of Bayer AG Company

| (In millions of €) | 2020 | 2021 | 2022 |
|----------------------------------|---------|---------|---------|
| Total Current Assets | 35,675 | 32,578 | 37,760 |
| Total Non-Current Assets | 81,129 | 87,663 | 87,117 |
| Total Assets | 116,804 | 120,241 | 124,877 |
| Total Current Liabilities | 36,768 | 29,403 | 35,084 |

| | | | |
|--------------------------------------|--------|--------|--------|
| Liabilities | | | |
| Total Non-Current Liabilities | 49,361 | 57,670 | 50,867 |
| Total Liabilities | 86,129 | 87,073 | 85,951 |

2.4. Innovative Analysis of Corporate Finance Structure

A range of leading-edge approaches to the analysis of corporate finance structure have been proposed. (Schlosser, 1992) advocates for a modeling approach, using financial accounting as a foundation and incorporating cash flow models, risk assessment, and option analysis. (Altman and Mckinney, 1986) provides a comprehensive handbook covering financial forecasting, return on investment, capital budgeting, mergers and acquisitions analysis, and international cash management. These approaches collectively offer a robust toolkit for analyzing corporate finance structure. The categorization of inter-corporate investments serves multiple functions, including governance, financial slack, and cash flow management (Bøhren and Norli, 1997). The existence of asymmetric information in financial markets can lead to investment distortions, which can be mitigated through the choice of financial contracts and funding sources (Hoelscher, 2016; Kempf, 2016).

2.5. Analysis of the Categorization of the Inter-Corporate Investments of Siemens

As stated in the annual report of Siemens company, inter-corporate investments are equal with 1.3 and 1.5 Billion € in 2021 and 2022 respectively. These amounts of funding mainly allocated to technological innovations, maintaining and extension of capacity for designing, manufacturing and marketing new solutions, improving productivity, and replacement of fixed assets. From the strategic standpoint, it is inferable that managers of Siemens company designated more inter-corporate investment in order to return on investment in the upcoming years. The net income in 2021 and 2022 is equal to 6,697 and 4,392 in a million €. Although, the amount net income was decreased, but it can be a basic strategy for husbanding resources in long-term.

2.6. Analysis of the Categorization of the Inter-Corporate Investments of Bayer AG

Given information in the annual report of Bayer AG Company, net sales were increased from 2020 to 2022. Making up 14,543, 15,497, 16,470 in million €. Managers allocated inter-corporate investments primarily to employees' expenses, innovation including research and development expenses, safety and environmental protection. To highlight the net income or income after taxes, it made up 2,547, 4,110, and 4,764 in million € from 2020 to 2022 respectively. This is an indication of growth in net income and net sales. In contrast, free cash flow was increased from 2020 to 2022 inclusive. Making up 1,343, 1,415, and 3,111 in million € for mentioned years respectively.

2.7. Theories and Models in Corporate Financing Decisions

A range of theories and models have been proposed to explain corporate financing decisions. Myers (2003) identifies four major theories: The Modigliani-Miller theory, the trade-off theory, agency theories, and the pecking-order theory. These theories are not mutually exclusive and can be observed in different firms. Taggart (1977) presents an integrated model of corporate financing patterns, considering balance sheet constraints and the interdependent nature of the financing decision. Megginson (2010), provides a comprehensive overview of corporate finance theory, covering topics such as ownership, control, compensation, risk, return, market efficiency, and financial markets.

2.8. Concept of Cash Flow

Cash flow is the difference between income and expenses over a specific period, encompassing various monetary activities and costs. Based on the literature related to understanding the concept of cash flow, (Chorafas, 1995) stated that cash flow is substantial for financial staying power of a company.

2.9. Concept of Free Cash Flow

Jensen (1988), defined the concept of Free Cash Flow (FCF) which is the cash left after a firm has invested in all available positive net present value projects. This excess cash can lead to managerial abuses, particularly in low-growth industries like life insurance (Wells *et al.*, 1995). In addition, the calculation of free cash flow can be distorted by the offsetting of current liabilities against current assets, leading to potential misinformation for stakeholders (Yaari *et al.*, 2016). It is important to mention that FCF is equal to the sum of sales revenues, operating costs and taxes, and required investments in operations (Ehrhardt, 2011). In the study conducted by Kadioglu and Yilmaz (2017), the positive effect of FCF is tested through using a panel regression, the results of the research conducted by Kadioglu and Yilmaz (2017) supported the notion that inverse relationship between leverage and FCF, and negative correlation between FCF and dividend per share.

2.10. Cash Flow Statements of the Siemens (2020-2022) Inclusive

Based on the information in the annual report, cash flow of the Siemens company consists of cash flow from operating activities, cash flow from investing activities, cash flow from financing activities. It is worthwhile mentioning that free cash flow was reported as a supplemental liquidity measure. As indicated in the annual reports, the free cash flow for 2021 is equal to 8,237. The total changes in cash for 2021 is equal to 26,275. This high total

cash flow was due to cash flow for investing activities-continuing operations which consists of additions to intangible assets, property plant and equipment, acquisition of businesses, purchase of investments and financial assets for investment purposes, and other disposals of assets of Siemens AG, and dividend attributable to non-controlling interests. For 2022, the total change in cash is equal to 20,333. Table 3 contains information relevant to cash flow statement of Siemens Company.

Table-3. Cash Flow Statement of the Siemens Company

| (In millions of €) | 2021 | 2022 |
|-------------------------------------|--------|--------|
| Cash flow from operating activities | 9,996 | 10,241 |
| Cash flow from investing activities | 15,494 | 2,490 |
| Cash flow from financing activities | 785 | 7,502 |
| Total Changes in Cash | 26,275 | 20,233 |

2.11. Cash Flow Statements of the Bayer AG (2020-2022) Inclusive

Cash flow statement of a company can be extracted from the income statement and balance sheet. Total changes in cash flow are the sum of cash flow from operating activities, cash flow from investing activities, and cash flow for financing activities.

Referring to the Bayer AG annual reports, it is inferable that free cash flow had an increasing trend from 2021 to 2022 as can be seen in table 4. This represents the availability of the cash in the hand of managers and can be detrimental to the financial performance of Bayer AG company. These findings, according to income statement and three-year summary could be detrimental for the financial performance of the company especially from 2021 to 2022 due to approximately %120 for free cash flow. Additionally, information related to total changes in cash can be seen in table 4. It is obvious that high cash flow in 2020 can a potential way in order allocates for resources.

Table-4. Cash Flow Statement of Bayer AG

| (In millions of €) | 2020 | 2021 | 2022 |
|-------------------------------------|--------|--------|--------|
| Free Cash Flow | 1,343 | 1,415 | 3,111 |
| Cash flow from operating activities | 4,903 | 5,089 | 7,093 |
| Cash flow from investing activities | -4,073 | 855 | -2,381 |
| Cash flow from financing activities | 423 | -5,645 | -4,220 |
| Total Changes in Cash | 1,253 | 299 | 492 |

2.12. The Value of Goodwill of Siemens (2020-2022) Inclusive

At this stage, it is important to highlight the concept of the value of Goodwill in advance. Goodwill or non-current asset is a long-term asset and a key component of a company's value, is often derived from intangible assets such as brand reputation and customer loyalty (Vance, 2010). The treatment of goodwill in financial statements, particularly its amortization, can impact its perceived value (Churyk and Chewning Jr, 2003). From the strategic standpoint, goodwill is an economical source of a company that declines in value (Churyk and Chewning Jr, 2003). Referring to the annual report of Siemens company, non-current assets from 2020 to 2021 increased by %23 and consequently from 2021 to 2022 increased by %6. This is an indication of increasing the amortization in the Siemens company. As noted in the Siemens annual report, total non-current assets are the sum of goodwill, other intangible assets, property, plant, and equipment, investments accounted for using the equity method, deferred tax assets, other assets. As can be seen in table 5, the value of goodwill increased by %45 from 2020 to 2021 and consequently increased by % 14 from 2021 to 2022.

Table-5. The Value of Goodwill in Siemens Company

| (In millions of €) | 2020 | 2021 | 2022 |
|--------------------------------------------|--------|--------|--------|
| The Value of Goodwill Or Non-Current Asset | 20,449 | 29,672 | 33,861 |

2.13. The Value of Goodwill of Bayer AG (2020-2022) Inclusive

Referring to the annual report of Bayer AG company. Good will or non-current asset increased from 81,129 to 87,663 and had a slight decrease in 2022 which was equivalent to 87,117. This is an indication of increasing the

amortization in the Bayer AG company from 2020 to 2021 and slight decline from 2021 to 2022. As noted in the Bayer AG annual report, total non-current assets are the sum of goodwill, other intangible assets, property, plant, and equipment, investments accounted for using the equity method, deferred tax assets, other receivables, and other financial assets. Table 6 represents related information.

Table-6. The Value of Goodwill in Bayer AG Company

| (In millions of €) | 2020 | 2021 | 2022 |
|--------------------------------------------|--------|--------|--------|
| The Value of Goodwill or Non-Current Asset | 81,129 | 87,663 | 87,117 |

2.14. Economic Advantages of Business Financing

Research has shown that financing in business can have significant economic benefits. Leasing, for example, can provide a more accessible and efficient means of financing business expansion and technology adoption (Simon, 2010). The impact of debt financing on the profitability of small manufacturing firms is less clear, with some studies suggesting potential advantages (Matarirano, 2007). Therefore, based on the study by Matarirano (2007), it is inferable that the role of loans in financing small firms is not clarified. Conversely, for large companies or international companies is advantageous (Sojeva, 2015).

2.15. Concept of Free Cash Flow to Equity

The concept of free cash flow to equity (FCFE) is a key component in stock valuation, as it represents the cash available to equity investors after accounting for capital expenditures and changes in working capital (Gardner et al., 2009). However, there is a lack of consensus on its calculation, with different companies using varying measures (Estridge and Lougee, 2007). (Velez-Pareja, 2005) emphasizes the importance of including specific items in FCFE calculations, such as working capital, to ensure consistency with financial statements and indicating that cash flows have to be consistent with financial statements. Habib (2011), further explores the value of FCFE, finding that it is positively associated with stock returns in the presence of growth opportunities and transitory earnings. The formula for calculation of FCFE is as follows:

$$FCFE = \text{Cash Flow from Operation (CFO)} - \text{Capital Expenditures} + \text{Net Borrowing}$$

3. Conclusion

To begin with conclusion section, it is notable that present assignment had the primary purpose of selection of two different companies in the DAX list and then comparison between selected companies from the viewpoints of financial management. Thus, Siemens as a digital company and Bayer AG as a pharmaceutical one were chosen. Assessment of each of them and comparison between them will be explained in-depth as follows bullet points.

- Siemens Company had increased levels of total assets and liabilities. Likewise, Bayer AG has increased level in the case of total assets. In contrast, total liabilities of the Bayer AG were decreased from 2021 to 2022 in comparison with Siemens. This implies a significant message that Bayer AG was more successful regarding financial performance exclusively repayment of liabilities. Taking this point into consideration that size and sector of selected companies are totally distinguishable.
- Referring to the inter-corporate finance structure as stated earlier in the main body section of current assignment, each of the companies designated inter-corporate investment into different categories. Siemens company as a mobility and digital one allocated for technological innovation, manufacturing, and designing. Bayer AG as a pharmaceutical one allocated for employees' expenses, research and development. Siemens invested 1.5 Billion Euro in 2022 which was much more than Bayer AG considering discernible size and sector of two companies. Notably, free cash flow has increased trend in Bayer AG from 2021 to 2022 inclusive especially from 2021 to 2022 in which had a change from 1,415 to 3,111 approximately doubling the amount of free cash flow. This is an indication of excess money in the hand of managers which can lead to managerial abuses and problematic economic situations.
- Regarding the value of goodwill or non-current asset, first and foremost point to highlight is that: from the strategic standpoint, the value of goodwill declines in any company due to amortization. This is a brilliant point to take into consideration while assessing and evaluation of the value of non-current asset of a company. The value of goodwill increased by %45 and %14 respectively from 2020-2022 inclusive. On the contrary, the value of goodwill had an increasing trend from 2020 to 2021 and a slight decrease in the amount of goodwill from 2021 to 2022.
- Cash flow is consequential for staying power of the company. As stated earlier in the main body of the present assignment, cash flow statement is equivalent with total changes in cash and its formula is the sum of cash from operating activities plus cash from investing activities and cash from financing activities. The declining trend of cash flow statement in the Siemens company from 2021 to 2022 can be an indication investment and allocation of money in order to return on investment in the future years to come. There are fluctuations in the amount of cash flow statement in the Bayer AG company. Making up 1,253, 299, and 492 in Million Euro from 2020 to 2022 respectively. These results relevant to total changes in cash reveal that managers of the Bayer AG company who are implicated in the allocation of resources, especially monetary ones had a basic strategy for husbanding resources for long-term.

References

- Altman and Mckinney (1986). Handbook of corporate finance. (No Title).
- Bøhren, Ø. and Norli, Ø. (1997). Determinants of intercorporate shareholdings. *Review of Finance*, 1(2): 265-87.
- Chorafas (1995). *Cash flow and its management financial models and simulation*. Springer. 224-46.
- Churyk, N. T. and Chewning Jr, E. G. (2003). Goodwill and amortization: Are they value relevant? *Academy of Accounting and Financial Studies Journal*, 7(2): 57.
- Ehrhardt, M. C. (2011). *Financial management: theory and practice*. USA.
- Estridge, J. and Lougee, B. A. (2007). Measuring free cash flows for equity valuation: Pitfalls and possible solutions. *Journal of Applied Corporate Finance*, 19(2): 60-71.
- Gardner, J. C., McGowan, C. and Moeller, S., 2009. "Applying the free cash flow to equity valuation model to Coca-Cola." In *Paper presented at the Proceedings of the Academy of Accounting and Financial Studies*.
- Habib, A. (2011). Growth opportunities, earnings permanence and the valuation of free cash flow. *Australasian Accounting, Business and Finance Journal*, 5(4): 101-22.
- Hoelscher, S. (2016). *Essays in corporate finance and financial intermediation*.
- Ives, M. (2007). *Financial statement analysis encyclopedia of public administration and public policy*. Routledge. 771-77.
- Jensen, M. C. (1988). Takeovers: Their causes and consequences. *Journal of Economic Perspectives*, 2(1): 21-48.
- Kadioglu, E. and Yilmaz, E. A. (2017). Is the free cash flow hypothesis valid in Turkey? *Borsa Istanbul Review*, 17(2): 111-16.
- Kempf, E. (2016). *Essays in corporate finance and financial intermediation: CentER*. Tilburg University.
- Matarirano (2007). *An Investigation Into the Impact of Debt Financing on the Value of Small Manufacturing Firms (SMFs) in Bulawayo*. University of Fort Hare: Zimbabwe.
- Maulina, E. (2019). Arti penting dan karakteristik prinsip akuntansi. *Jurnal Mitra Manajemen*, (10): 1.
- Megginson (2010). *Introduction to the special issue on project finance*. 19 vols. No longer published by Elsevier. 47-48.
- Myers (2003). *Financing of corporations handbook of the economics of finance*. 1 vols. Elsevier. 215-53.
- Needles, B. E., Powers, M. and Crosson, S. V. (2011). *Principles of accounting*. Cengage Learning.
- Reeve, Warren, C. S. and Duchac, J. E. (2009). *Principles of financial and managerial accounting*. (No Title).
- Schlosser (1992). *Corporate Finance: a model-building approach*. (No Title).
- Simon, A. (2010). Economic aspects of financial leasing in business investments. *Scientific Bulletin-Economic Sciences*, (9): 65-70.
- Sojeva, D. (2015). Economic and legal advantages to business financing through the issuance of bonds.
- Taggart, R. A. (1977). A model of corporate financing decisions. *The Journal of Finance*, 32(5): 1467-84.
- Vance (2010). Return on goodwill. *Journal of Applied Business Research*, 26(2): 93.
- Velez-Pareja, I. (2005). The correct definition for the cash flows to value a firm (free cash flow and cash flow to equity)(spanish version).
- Vovok, V. (2013). Metoda analizy przepływu gotówki w przedsiębiorstwach doświadczenie urkaińskie. *Annales Universitatis Mariae Curie-Skłodowska, Sectio H Oeconomia*, 47(4): 125-34.
- Warren, C. S., Reeve, J. M. and Duchac, J. E. (2018). *Financial accounting*. Cengage Learning.
- Wells, B. P., Cox, L. A. and Gaver, K. M. (1995). Free cash flow in the life insurance industry. *Journal of Risk and Insurance*: 50-66.
- Yaari, U., Nikiforov, A., Kahya, E. and Shachmurove, Y. (2016). Finance methodology of free cash flow. *Global Finance Journal*, 29: 1-11.
- Zack, G. M. (2012). *Financial statement fraud: Strategies for detection and investigation*. 632 vols. John Wiley and Sons.