



Investigating Sustainable Earnings Extraction from Profit Margin in Companies Admitted to the Tehran Stock Exchange (TSE)

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ABSTRACT

In order to make decisions, users of financial information need to pay attention to the earnings quality in addition to the quantitative of earnings in the income statement. In examining the quality of earnings, it is important to examine the sustainability of earnings and the distinction between stable and unstable earnings. Revenues and expenses are fundamentally proportional to one another. Incomes and expenses are basically related to each but are likely to be disproportionately affected by transitory items or economic shocks; Therefore, the separation of the unstable part resulting from transitory items and economic shocks from the stable part of earning has often been the focus of researchers. This research proposes a new measure of sustainable earnings based on deviations from normal profit margins, one of the financial ratios. Based on deviations from normal profit margins and based on the firm-specific and the industry-based, the core (stable) and non-core (unstable) components of earning have been separated and the coefficients of these components have been estimated in regression models. The studied sample is the panel data (time series and cross-sectional) related to the companies admitted to the Tehran Stock Exchange (TSE) between 2011 and 2021. The results, based on both firm-specific and industry-based, indicate that for all three profit measures (NI, EBIT, or GP) the persistence of core earnings, measured by α_1 , is significantly larger than that of non-core earnings, measured by α_2 . In addition, there is a positive and significant relationship between the persistence of core earnings and the intensity of core earnings (ICE), which is extracted as an earnings quality measure. These results are also consistent with the view that analyzing deviations from normal profit margins is a useful method for extracting information on sustainable earnings and the intensity of core earnings (ICE) can be used as a reliable measurement of earning quality in the Tehran Stock Exchange (TSE) companies.

Keywords: Earnings Quality, Sustainable Earnings, Profit Margins, Core (Stable) Earnings, Non-core (Unstable) Earnings.



1. Introduction

The objective of financial reporting is to provide financial information about the reporting entity that is useful to existing and potential investors, lenders, and other creditors in making decisions about providing resources to the entity. (Statement No. 1, 1970). The concept of usefulness in decision-making has been adopted as the key criterion for accounting selection (Statement 1980). Furthermore, the Accepted Accounting Principles aim to ensure that a company's financial statements, performance, and economic position are presented fairly. To achieve these objectives, financial information must possess qualitatively reliable and relevant characteristics, as stated in Statement No. 2 of the Board (1982) (Mirzaei, 2010).

Fairfield and Yohn (2001), Ertimur et al. (2003), Jegadeesh and Livnat (2006), Kama (2009) To ensure the provision of reliable accounting information, the Quantitative Profit Index is not a suitable benchmark for investors to base their decisions upon. This is because management can potentially manipulate profits, making it an unreliable metric. Consequently, financial reporting users should be vigilant and consider both the quantity and quality of profits when evaluating investment options. The quality of profits has emerged as a critical concern for investors, creditors, regulators, and researchers across different industries. As profit serves as a fundamental basis for stock valuation and pricing decisions, it becomes imperative that the profit and loss statement maintains a high level of quality and accuracy.

Indeed, research has shown that low-quality earnings have limited capacity to forecast stock returns (Lev, 1989). On the other hand, high-quality gains offer more valuable insights into the financial performance attributes that are essential for informed investor decision-making (Dechow et al., 2010). Profit stability is the most desirable feature of profit because it indicates sustainable profit (Kanya and Putri, 2019).

In 1989, Lev's review of the limitations of profit adequacy in explaining stock returns prompted researchers to shift their focus towards developing and evaluating direct and indirect measures of earnings quality. Viewing profit quality from various perspectives, such as the measurement standpoint and the angle of earnings management under contract review, has been explored (Francis et al., 2006). Throughout the literature, common viewpoints have

emerged, particularly regarding the capacity of current profits to predict future profits and their role in explaining stock returns.

Lip (1986), Kormendi and Lip (1987), and Richardson (2003), Leone, and Wasley (2005) have conducted research indicating that incomes are considered to be of high quality if they exhibit sustainability. Amir, Einhorn, and Kama (2013) further elaborate on this interpretation of sustainability, emphasizing the importance of continuity in profit generation. This means that sustainable income is characterized by the ability to maintain profits over the long term or to have a permanent and stable income stream.

Indeed, profit stability is a key indicator used to evaluate the quality of a company's profits. A stable profit trend indicates that the company's earnings do not fluctuate significantly over time, providing a more predictable and reliable outlook for future profits.

When a company demonstrates profit stability, it suggests that the business is operating in a consistent and sustainable manner. Such stability is desirable for investors and stakeholders as it provides confidence in the company's ability to maintain its financial performance over the long term. (Davy and Putri, 2015)

Investors can gain insights into some of the more unstable components of profit by examining the breakdown of profits. However, there are certain unstable components that cannot be easily identified through profit breakdown, primarily due to earnings management practices. For instance, unsustainable components of sales costs, general and sales administrative costs, and even tax costs may not be readily identifiable, as they can be partially unsustainable or partially sustainable. This complexity in identifying such components poses challenges for investors in assessing the true sustainability of a company's income.

Investors are drawn to companies with the expectation of making a profit and often invest their liquidity into such ventures. However, research by Penman and Zhang (2014) reveals that companies with unsustainable profits tend to yield lower returns for investors. Sustainable profit, in this context, refers to the company's ability to maintain consistent profits over time.

The current study aims to explore the enhancement of profit quality by identifying sustainable profits

based on deviations from the profit margin. By examining such deviations, the research seeks to identify companies that have the potential for sustainable profitability, thereby providing valuable insights to investors looking to make informed decisions about their investments.

The primary objective of the present study is to address the following main question:

"Can the current and past profit margins be effectively utilized to develop a meaningful metric for the main profit (sustainable) and distinguish it from the non-main (unstable) components in order to serve as a valid indicator for assessing profit quality in companies listed on the Tehran Stock Exchange"?

By analyzing the profit margins over time and discerning the sustainable elements from the unstable ones, the study aims to establish whether this approach can provide a reliable and practical means of evaluating the overall profit quality of companies in the Tehran Stock Exchange.

Theoretical Foundations of Research

Profit Sustainability

The flow of accounting research shows that profits are seen as a summary indicator or a staple of the financial reporting package. Profit is the numerical sum of revenues and expenditures, but it is not that simple, and therefore research was carried out in line with it and its measurement and analysis processes.

Profit sustainability talks about the future aspect of profit. Investors pay attention to future profits and start investing, but they look at current profits as a sign of future earnings. They may be concerned that income may not be sustainable in the future.

Sustainability is a vital issue for business. Sustainability is about developing a strategy for companies that meets the expectations of stakeholders while ensuring long-term performance and profitability. If organizations are not profitable, efficient, and ethical, they will not persist, suggesting that long-term durability should be equated with growth in shareholder value, an indicator of long-term performance.

The sustainability of earnings persistence has always been the focus of financial reporting users, especially those who expect high revenue continuity. Various researchers believe that the continuity of profits reflects the quality of a company's profits and

shows that the company can sustain activity and profits.

In their research, Einhorn and Kama (2013) argue that unsustainable profit components (which may arise from reporting manipulations, accounting measurement problems, and non-recurring economic events) suppress the continuity and predictability of reported profits and introduce significant amounts of disruption to the accounting-based equity valuation process, thereby reducing profits. As a result, financial analysts and investors care about the sustainable component of profit because the value of equity is based on expected future gains rather than current profits, and investors will pay more for more stable and sustainable revenues. In financial analysis, they also focus on extracting information about the separation of the main (or sustainable) component of profit from the non-main (or unstable) component of profit using time series and cross-sectional techniques.

Users of financial statements can identify deviations of a unit of profit (gross profit, operating profit, or net profit) from what is expected and use these deviations to distinguish between original (sustainable) and non-core (unstable) profits. Specifically, it is expected that the greater the deviation of a unit of profit from what is expected, the less lasting and predictable the profit will be, reflected in the market's lower reaction to unexpected earnings.

Continuity of profits generally includes stability, forecasting, diversification, and profit trends. Considers profit forecasting, profit power, estimation techniques, and control mechanisms. A good financial analysis enables its users to identify sustainable and unsustainable profit components so that profits can be identified for non-recurring items specified in financial statements and then separate components that can remain stable from unstable components.

Many public sector companies and organizations have made sustainability an integral part of their business strategy.

In their research Pratomo and Norolia (2021) Earnings sustainability refers to the assessment of a company's ability to maintain its current level of earnings over an extended period. This capability indicates the potential future benefits that a company can generate and its capacity to sustain its earnings in the long run. By evaluating the sustainability of earnings, investors and financial analysts can gain

valuable insights into a company's financial health and its potential for continued success.

Understanding earnings sustainability is crucial for making informed investment decisions, as it allows investors to assess the reliability and predictability of a company's future earnings. A company with sustainable earnings is more likely to be perceived as financially stable and well-managed, which can instill confidence among investors and stakeholders.

Financial analysts often review various factors and indicators, such as profit margins, revenue growth, expense management, and the company's competitive position, to evaluate the sustainability of earnings. By conducting a thorough analysis, they can better gauge the quality of a company's earnings and its overall financial performance.

In summary, earnings sustainability is a fundamental aspect of financial analysis that helps in assessing the long-term viability and value of a company. It plays a crucial role in guiding investment decisions and forming an accurate picture of a company's financial prospects.

Profit margin

Profit margin is one of the profit ratios commonly used to measure the profit of a company or a business activity. This ratio shows us what percentage of sales have been converted into profits, measured through dividends by revenue (sales).

Profit margins are used by creditors, investors, and businesses themselves as indicators of financial health, management skills, and the growth potential of the company.

Investors should take numbers from profit margin ratios as an overall indicator of a company's profitability performance and begin a deeper investigation into why profitability increases or decreases when necessary.

Consistent with Schilit and Perler's (2010) views which argue that deviation from profit margins often implies accounting manipulation, although it may result in unsustainable profit components due to one-off events. Profit sustainability is based on deviation from normal profit margins. This criterion is also referred to as Main Income Intensity (ICE) by Eli Amir, Eti Einhorn & Itay Kama (2013), in which financial statement users can identify deviations of a unit of profit (gross profit, operating profit, or net income) from what is expected and use these

deviations to distinguish between stable (main) and unsustainable (non-major) profits, and the greater the profit deviation from what is expected sustainability. Profit and predictability are less profitable.

Experimental Background of Research

Sadeghian (2012) In this research, the effect of stable patterns in earnings growth on stock price reaction to earnings per share forecasting characteristics of listed companies in the Tehran Stock Exchange has shown that the reaction of capital markets to bad news, forecasting and forecasting horizons of earnings per share in companies with stable growth in profits is different from other companies.

Vakili Pakjoo (2016) in research on the relationship between dividend distribution and earnings sustainability in listed companies in the Tehran Stock Exchange investigated. The results of this research after reviewing 292 companies during 2010-2014 show that dividend policy affects earnings sustainability.

Ahmad Al-Jahishi (2017) In research to detect earnings management by using changes in asset circulation and profit margin in the companies listed in the Iraqi Stock Exchange, the results of the research indicate an increase in profit margin and a decrease in asset turnover simultaneously as a sign of the existence of upward earnings management. Also, it cannot be reduced in profit margin and a simultaneous increase in the Asset turnover was seen as a sign of downward profit management.

Ghadimi (2018) In our research, we have tried to measure the relationship between sustainable competitive advantage and profit sustainability in listed companies on Tehran Stock Exchange using required statistical tests. The results of this study show that sustainable competitive advantage plays an important role in the voluntary disclosure decisions of managers. In this regard, increasing competition in the market by applying Pressure on managers to provide timely and highly reliable information leads to improved financial reporting quality. The Market competition also acts as a discipline and discipline force and motivates managers to provide high-quality financial reporting. As a result, the smoothing of profits decreases, and the quality of profits increases.

Razmanesh (2019) in a research study examines the effect of real earnings management on two important aspects of earnings quality such as profit

sustainability and earnings awareness about future cash flows. The results show that real earnings management has a negative relationship with earnings sustainability, i.e. with increasing real earnings management, earnings sustainability decreases; also, real earnings management reduces the relationship between current earnings and future cash flows.

Douglas et al. (2020) in research Profit stability is a crucial indicator of a company's success and performance over a specific period of time. When a company's profit is stable, it indicates that the company has been able to consistently generate earnings and maintain a steady financial performance during that particular period. This stability is often seen as a positive sign of effective management, a well-functioning business model, and a sustainable competitive advantage.

On the other hand, when a company's profit is not stable and exhibits significant fluctuations, it raises concerns about the company's ability to maintain consistent performance over the long term. Unstable and unpredictable profits may be indicative of various issues such as volatile market conditions, ineffective business strategies, or operational inefficiencies.

Negin Kameli (۲۰۲۱) which describes the effect of earnings sustainability on the relation between the comparability of financial statements and the profit reaction coefficient indicates that the comparability of financial statements has a positive and significant relationship and the stability of profit has a positive and significant effect on the relationship between the comparability of financial statements and the profit reaction coefficient.

In their research, Stephen Machin and John van Rainen (1993) present some empirical models of profitability using data from 709 major British firms in the 1970s and 1980s, focusing specifically on the role of aggregate demand shocks in shaping company-level profitability, with results showing that company-level profit margins were sharply reduced during the deep production downturn early on. The 1980s declined and, as such, adapted to models that predicted the cyclical nature of profit margins.

Iliia D. Dichev and Vicki Wei Tang (2008) in their research theorize that poor matching appears as a disruption to the economic relationship of advancing expenditures to make money. As a result, poor matching reduces the correlation between revenue and costs at the same time, which increases the volatility of

profits and reduces the continuity of profits and creates a negative autocorrelation in profit changes. In this study, a clear and significant economic trend was found from the reduction of simultaneous correlation between revenues and costs, increased profit volatility, reduced profit continuity, and increased negative correlation in earnings changes. Mixed evidence suggests that accounting compliance has worsened over time, and this trend has a clear impact on the characteristics of the resulting profits.

Ralf Ewert and Alfred Wagenhofer (2010) discuss and evaluate the usefulness and suitability of common profit metrics, which define profit quality as a reduction of market uncertainty about the final value of a company due to profit reporting, and compare this criterion with the relationship of value, sustainability, predictability, smoothness and commitment quality that ultimately yields results. Each standard shows different effects, but some of them, including the relationship between value and continuity, are closely related to the quality of research income.

Eli Amir, Eti Einhorn & Itay Kama (2013) argue that the repeated use of time and cross-sectional data in financial analysis encourages users to use two alternative options for ordinary profit margins. The first is the company's average specific profit margin over the past four years (time series), which is based on the assumption that profit margins return to their underlying value over time. The second is the average current profit margin in the industry to which the company belongs (cross-sectional) while each company may deviate from its profit margin, the average profit margin in the industry is assumed to be an unbiased measure of profit margin. Based on the estimation of stable and unstable (original and non-original) components of profit, the intensity of the original profit (ICE) is measured as the absolute value of the stable (main) component of profit divided by the sum of absolute values of stable and unstable components (original and non-original) of profit from income. This leads us to the following assumptions:

Sub-hypothesis 1.1: The average specific profit margin of the company over the past four years (time series) is an appropriate criterion for separating sustainable and unsustainable profits.

Sub-hypothesis 1.2: The average current profit margin in the industry to which the company belongs is (cross-sectional) an appropriate criterion for separating sustainable and unsustainable profits.

Sub-hypothesis 1.3: Current and past profit margins can be used to establish a useful measure of original (sustainable) profit and separate the non-core (unstable) component from it.

As well as the proposed earnings quality criterion of Eli Amir, Eti Einhorn & Itay Kama (2013) can be calculated for any definition of the components of the main versus non-original profit; as well as studies on the average return in corporate profitability by

Freeman et al., 1982; Fairfield et al., 1996; and Fama & French, 2000 argue that profitability and other ratios return to normal values over time. Finally, it can be argued that the financial ratio of profit margin is a useful criterion for main (sustainable) profits and can be used as a valid indicator for earnings quality in the Tehran Stock Exchange companies.

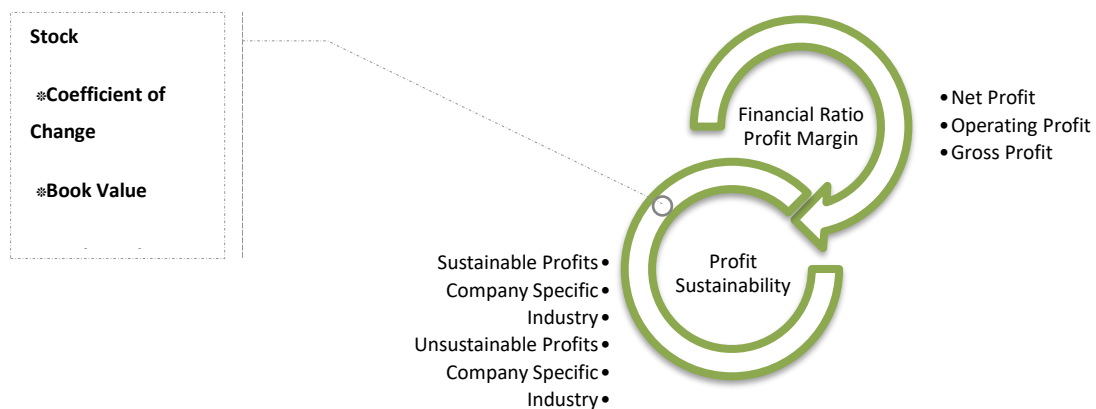


Figure 1: Conceptual model of research

Research Methodology

In line with the methodology of Eli Amir, Eti Einhorn, and Itay Kama (2013), the measured the sustainability of profit by distinguishing the main (sustainable) component from the non-main (unstable) components using both time series and cross-sectional approaches. This measure is known as ICE, derived from the examination that revenues and expenses are proportionately linked but disproportionately impacted by transient accounting or economic shocks. H. Schilit, and J. Perler (2010) argue about accounting manipulation that if there are deviations from margins, investors can evaluate transient components of profit and distinguish between the main (stable) and non-core (unstable) components of profits. Finally, in the case of profit sustainability, further deviation of profits from what is said is expected to lead to unsustainable gains as well as lower future stock returns.

Following the methodology of Amir, Eti Einhorn & Itay Kama (2013), To calculate the main profit (sustainable), two approaches were utilized:

Time-Series Approach: The average specific profit margin of the company four years ago was considered. This allows for a historical perspective on the company's profit stability.

Cross-Sectional Approach: The average profit margin of the current year was considered, but specific to the industry to which the company belongs. This approach allows for a comparison of the company's profit stability relative to its industry peers.

Using these two approaches, the estimated the main profit (sustainable) by analyzing profit margins, enabling them to separate the stable and unstable components of profit. This process contributes to a more comprehensive understanding of profit sustainability, aiding investors in making informed decisions based on the company's future earnings prospects.

Core Earnings = Normal Profit Margin * Current Sales
 Earnings (unstable) are also estimated as follows:
 Non - Core Earnings = Actual Earnings - Core Earnings

- Corporate Benchmark

Initially, corporate profit margins i are calculated at the time period of each quarter t , which is the profit margin divided by total sales ($Sales_{it}$)(1), in which profits including net profit (NI_{it})(1a), operating profit before interest and tax ($EBIT_{it}$)(1b) or gross profit (GP_{it})(1c) are defined as the following equations:

$$NPM_{it} = \frac{NI_{it}}{Sales_{it}} \quad (1a)$$

$$, OPM_{it} = \frac{EBIT_{it}}{Sales_{it}} \quad (1b),$$

$$\text{and } GPM_{it} = \frac{GP_{it}}{Sales_{it}} \quad (1c) .$$

Following the company-specific criterion, the main (sustainable) component of a company's profit (FCORE)(2) is the average profit margin of the same seasonal time return over the past four years multiplied by current quarterly sales, which is expressed as the following equation:

$$FCORE(NI)_{it} = \left[\frac{(NPM)_{i,t-4} + (NPM)_{i,t-8} + (NPM)_{i,t-12} + (NPM)_{i,t-16}}{4} \right] * Sales_{it} \quad (2a)$$

$$FCORE(EBIT)_{it} = \left[\frac{(OPM)_{i,t-4} + (OPM)_{i,t-8} + (OPM)_{i,t-12} + (OPM)_{i,t-16}}{4} \right] * Sales_{it} \quad (2b)$$

$$FCORE(GP)_{it} = \left[\frac{(GPM)_{i,t-4} + (GPM)_{i,t-8} + (GPM)_{i,t-12} + (GPM)_{i,t-16}}{4} \right] * Sales_{it} \quad (2c)$$

After measuring the main (sustainable) component of profit, the non-principal (unstable) component of profit (FNCORE)(3) is simply calculated to be the result of the difference between the profit ($Profit_{it}$) of the main (sustainable) FCORE (FCORE) for the company i in period t , whose equation is shown as follows:

$$FNCORE(Profit)_{it} = Profit_{it} - FCORE(Profit)_{it} \quad (3)$$

In a way that:

$$Profit_{it} = \{NI_{it} (3a), EBIT_{it} (3b), GP_{it} (3c)\}$$

- Industry-specific criteria

The main industry-based profit component ($ICORE_{it}$)(4) is measured relative to the industry profit margin in such a way that first, we measure the industry's profit margin for each quarter using all the

companies in an industry, then we measure the main (sustainable) profit of company i by multiplying the industry profit margin in the sales of Company I , whose equations are shown as follows:

$$ICORE (NI)_{it} = \left[\frac{\sum_{k \in I(i)} NI_{kt}}{\sum_{k \in I(i)} Sales_{kt}} \right] * Sales_{it} \quad (4a)$$

$$ICORE (EBIT)_{it} = \left[\frac{\sum_{k \in I(i)} EBIT_{kt}}{\sum_{k \in I(i)} Sales_{kt}} \right] * Sales_{it} \quad (4b)$$

$$ICORE (GP)_{it} = \left[\frac{\sum_{k \in I(i)} GP_{kt}}{\sum_{k \in I(i)} Sales_{kt}} \right] * Sales_{it} \quad (4c)$$

Where $I(i)$ is the set of companies that belong to the industry of the company i . Accordingly, the non-main (unstable) component of industry-based profit is the difference between profit and the main component of industry-based profit, whose equation is shown as follows:

$$INCORE(Profit)_{it} = Profit_{it} - ICORE(Profit)_{it} \quad (5)$$

In a way that:

$$Profit_{it} = \{NI_{it} (5a), EBIT_{it} (5b), GP_{it} (5c)\}$$

- Intensity of main profit and continuity of profit

Based on original and non-original profits, the Primary Profit Intensity Measure (ICE)(6) is made as follows:

$$ICE = \frac{\text{Absolute value except for the main benefit}}{\text{Sum the absolute value of both the main and non-principal components of profit}} \quad (6)$$

It measures the ratio of the profit that is assumed to be stable in such a way as to be the ratio of the absolute value of the main profit divided by the sum of the original and non-original absolute values that our profit components use absolute values to get the value of the actual profit deviation from the profit margin because deviation from both sides means less accuracy.

Two criteria are provided from ICE, one based on the company's prior year specific profit margin (FINT)(6a) and the second based on industry profit margin (IINT)(6b), which are respectively:

$$FINT(\text{Profit})_{it} = \frac{|FCORE(\text{Profit})_{it}|}{|FCORE(\text{Profit})_{it}| + |FNCORE(\text{Profit})_{it}|} \quad (6a)$$

$$IINT(\text{Profit})_{it} = \frac{|ICORE(\text{Profit})_{it}|}{|ICORE(\text{Profit})_{it}| + |INCORE(\text{Profit})_{it}|} \quad (6b)$$

In a way that:

$$\text{Profit}_{it} = \{NI_{it}(6aa)(6ba), \quad EBIT_{it}(6ab)(6bb), \quad GP_{it}(6ac)(6bc)\}$$

To estimate the continuity of main (stable) and non-core (unstable) components of profit, the mean coefficients of 7a and 7b obtained from the following regression models will be used, based on seasonal data and Fama and MacBeth regression (1973):

$$\text{Profit}_{it} = \alpha_{0i} + \alpha_{1i}FCORE(\text{Profit})_{i,t-4} + \alpha_{2i}FNCORE(\text{Profit})_{i,t-4} + \alpha_{3i}CV(\text{Profit})_{i,t} + \alpha_{4i}BM_{i,t} + \alpha_{5i}MV_{i,t} + \varepsilon_{i,t} \quad (7a)$$

$$\text{Profit}_{it} = \alpha_{0i} + \alpha_{1i}ICORE(\text{Profit})_{i,t-4} + \alpha_{2i}INCORE(\text{Profit})_{i,t-4} + \alpha_{3i}CV(\text{Profit})_{i,t} + \alpha_{4i}BM_{i,t} + \alpha_{5i}MV_{i,t} + \varepsilon_{i,t} \quad (7b)$$

In a way that:

$$\text{Profit}_{it} = \{NI_{it}(7aa)(7ba), \quad EBIT_{it}(7ab)(7bb), \quad GP_{it}(7ac)(7bc)\}$$

There are three control variables in the equation to prevent errors: CV (Profit), which is the coefficient of changes in the measurement of the respective profit in quarter t, which is measured as the standard deviation of profit divided by its average in the last four quarters. , BM_{it} is the bureau-to-market ratio and MV_{it} is the market value of the ordinary stock at the end of the year for the company i in the period t.

We perform the analysis for the main and non-principal components of profit in regression (7a) and for the main and non-main components of industry-based profit in regression (7b).

Next, we focus on the relationship between ICE and the continuity of profits. For every quarter, we sort all companies according to the ICE (FINT and IINT) criteria in the t4 quarter. Then, we assign the company each quarter to quintessential portfolios based on the intensity of the original profit in the T-4 quarter. We estimate equation (8) per quarter for each of the five quintile portfolios.

$$\text{Profit}_{it} = \gamma_{0i} + \gamma_{1i}(\text{Profit})_{i,t-4} + \gamma_{2i}CV(\text{Profit})_{i,t} + \gamma_{3i}BM_{i,t} + \gamma_{4i}MV_{i,t} + \psi_{i,t} \quad (8a,8b)$$

In a way that:

$$\text{Profit}_{it} = \{NI_{it}(8aa)(8ba), \quad EBIT_{it}(8ab)(8bb), \quad GP_{it}(8ac)(8ba)\}$$

Statistical population and research sample

The spatial domain of comprises the accepted companies listed on the Tehran Securities Exchange. The time horizon of the research spans from the beginning of 2011 to the end of 2021.

The collected the data using the archival method. To gather the required data and information for the research, a systematic removal sampling method (screening) was employed. This involved the regular selection of several companies from the list of accepted companies on the Tehran Securities Exchange, ensuring homogeneity within the statistical population of 495 companies accepted at the end of 2021.

To be included in the study, companies had to meet the following criteria:

Active Companies: Only companies that were active throughout the selected time period on the Tehran Stock Exchange were considered.

Fiscal Year Consistency: Companies should not have changed their fiscal year during the selected time period. The financial year of these companies aligns with the end of the solar year, which is the end of March. This consistency allows for easier and accurate data comparison across different time periods.

Exclusion of Specific Categories: Companies categorized as financial institutions, public services investments, or financial intermediaries were excluded. The exclusion was due to the different nature and classification of items in the financial statements of these entities compared to other companies.

Data Availability: Selected companies must have had the necessary information available for the research.

By employing these criteria, the ensured a standardized and comparable dataset, allowing for a comprehensive analysis of the selected companies' financial performance and stability over the specified time frame. According to Table 1, 78 companies were

selected as the statistical population which shows the number of companies selected from each industry.

Table 1 Selection Process of Statistical Sample Research

The total number of companies listed in the Tehran Stock Exchange at the end of the year 2021.	495
Defaults:	
The number of companies that did not change the fiscal year in the 2011-2021 period or the fiscal year ending in March 2012.	(70)
There were several companies in the financial institutions, public services, investment or financial intermediaries.	(75)
The number of companies required information is not available.	(272)
Number of Sample Companies	78

Table 2 Distribution of Sample Companies by Industry

row	Industry	Sample number
1	Machinery and electrical devices	3
2	Rubber & Plastic	2
3	Machinery & Equipment	5
4	Oil and gas extraction and subsidiary services other than exploration	1
5	Automotive and Parts Manufacturing	7
6	Pharmaceutical Materials and Products	17
7	Cement, Lime, and Gypsum	7
8	Chemical Products	9
9	Petroleum Products, Coke and Nuclear Fuel	2
10	Food and beverage products except for sugar and sugar	6
11	Manufacturing of metal products	2
12	Basic metals.	8
13	Tile & Ceramic	3
14	Other non-metallic mineral products	4
15	Extraction of metal ores	1
16	Coal Mining	1
	SUM	78

Research Findings

To calculate the independent and dependent variables of the research, as well as to estimate and test the research hypothesis, the researchers used both EXCEL and Stata/MP17 software.

Table 3 presents descriptive statistics for the variables that are included in the research. Descriptive statistics provide a summary of the main characteristics of the data, such as mean, standard deviation, minimum, maximum, and other relevant measures.

According to Table 1-4, the average net profit margin is 0.22, which is smaller than the average operating profit margin of 0.29 and also smaller than gross profit margin (0.43). In addition, the standard deviation of profit margins compared to their average (coefficient of variation) increases with decreasing in

profit and loss statements, which indicates that with decreasing in the case of profit, profit margin becomes more volatile and less predictable.

The study of the intensity of profits based on company-specific and industry-based shows that the average intensity of main (sustainable) profits decreases with decreasing in profit and loss statements, for example, the mean of net profit intensity FINT(NI)(6aa) and IINT(NI)(6ba) are 0.59 and 0.67, respectively. The mean intensity of FINT (EBIT)(6ab) and IINT (EBIT)(6bb) is 0.71 and 0.73, respectively, the mean gross profit intensity, FINT (GP)(6ac) and IINT (GP)(6bc) are 0.73 and 0.77, respectively. These results show that non-core items affect EBIT and net profit more than gross profit because transient items, or specific items, are often presented in the event of a profit after gross profit. Also, the coefficient of

changes (standard deviation divided by average) of profit intensity criteria increases with decreasing profit and loss statements, which shows that the profit

intensity criteria become more volatile by decreasing in profit and loss statements.

Table 3 Descriptive statistics of variables

Variable	Symbols	Number	Average	Middle	Maximum	Minimum	Standard Deviation
Net Profit	NI	3,433	1,006,744	127,668	500,642,791	-1,027,311	12,633,791
Net Profit Margin	NPM(1a)	3,433	0.22	0.14	11/71	-1/13	0.44
Operating profit margin	OPM(1b)	3,433	0.29	0.24	11/22	-3/66	0.42
Gross profit margin	GPM(1c)	3,433	0.43	0.31	40/39	-0/47	1/19
Intensity of specific net main profit based on company	FINT (NI)(6aa)	3,433	0.09	0.63	99	0.00	0.27
Intensity of specific net main profit based on industry	IINT (NI)(6ba)	3,433	0.67	0.70	1	0.00	0.20
Intensity of specific operating principal profit based on the company	FINT (OP)(6ab)	3,433	0.71	0.74	99	0.00	0.21
Intensity of specific operating principal profit based on industry	IINT (OP)(6bb)	3,433	0.73	0.78	1	0.00	0.23
Intensity of specific gross core profit based on company	FINT (GP)(6ac)	3,433	0.77	0.81	99	0.00	0.20
Intensity of specific gross core profit based on industry	IINT (GP)(6bc)	3,433	0.77	0.81	1	1.00	0.20
Stock market value	MV	3,433	14,007	6,709	093,640	600	20,031
Book value to stock market value	BM	3,433	0.43	0.32	21/28	-1/06	0.07

-Correlation coefficient between variables

Table 2-4 shows the pairwise correlations of Pearson (diagonal top) and Spearman (sub-diagonal) among the main variables. The correlation between NI and its main and non-core components is positive. However, the correlation between NI and its main component (FCORE(2a) or ICORE(4a)) is significantly greater than the correlation between NI and its non-core component (FNCORE(3a) or INCORE(5a)). High correlation coefficients between profit and its main component (stable) confirm that the extracted sustainable profit based on deviation from profit margin is a useful criterion of profit continuity.

Also, the correlation between the main (stable) and non-core (unstable) components of the company's specific and industry-based is positive. For example, the Spearman correlation between FSCORE(2a) and ICORE(4a) is (0.73) and between FNCORE(3a) and INCORE(5a) (0.08). In addition, the Spearman correlation between the firm's specific core net profit intensity (FINT(6aa)) and the industry-based core net

profit intensity (IINT(6ba)) is (0.53). These correlations show that industry-specific profitability analyses complement each other, so it is essential to use industry-specific studies at the same time. The correlation between the main (sustainable) and non-core (unstable) components of net profit is very low. For example, the Pearson correlation between FSCORE(2a) and FNCORE(3a) is (0.02).

Table 4 shows the correlation between the intensity of the main gains based on the three profit criteria (NI, EBIT and GP). The correlation between NI and EBIT is relatively high for both firm-specific and industry-based cases (about 0.77 and 0.56). This result suggests that core (stable) and non-core (unstable) items are likely to affect EBIT and NI similarly. The Spearman correlation between FINT (EBIT)(6ab) and FINT (GP)(6ac) is 0.73 and between FINT (NI)(6aa) and FINT (GP)(6ac) is 0.47. These correlations indicate that the items affecting GP profits affect the intensity of NI and EBIT core profits.

Table 4 Correlation between Selected Variables

Variable	NI	FINT (NI)(6aa)	IINT (NI)(6ba)	FCORE (NI)(2a)	ICORE (NI)(4a)	FNCORE (NI)(3a)	INCORE (NI)(5a)	MV	BM
NI		005/0-	**047/0	**933/0	**984/0	**907/0-	**778/0	**075/0	015/0-
FINT (NI)(6aa)	012/0-		**169/0	002/0-	003/0-	001/0	005/0-	**176/0-	**092/0
IINT (NI)(6ba)	**330/0	**53/0		**030/0	**066/0	026/0-	003/0-	*33/0	**063/0-
FCORE (NI)(2a)	**810/0	**279/0	**298/0		**916/0	**998/0-	**728/0	008/0	000/0
ICORE (NI)(4a)	**839/0	**052/0-	**423/0	**734/0		**891/0-	**658/0	**060/0	018/0-
FNCORE (NI)(3a)	**436/0	**421/0-	**111/0	016/0	**319/0		**709/0-	005/0	002/0-
INCORE (NI)(5a)	**186/0	**115/0	**089/0-	**145/0	**172/0-	**086/0		**106/0	003/0
MV	**508/0	**130/-	**068/0	**331/0	**417/0	**397/0	**078/0		**246/0-
BM	**356/0-	**217/0	*029/0-	**173/0-	**319/0-	**370/0-	020/0	**246/0-	

** . The correlation at the level of 0.01 (1 sequence) is significant.

Table 5 Correlation between Main Net Profit Intensity and Main Operating Profit Intensity and Gross Profit Intensity

Variable	FINT (NI)(6aa)	IINT (NI)(6ba)	FINT (OP)(6ab)	IINT (OP)(6bb)	FINT (GP)(6ac)	IINT (GP)(6bc)
FINT (NI)(6aa)		**169/0	**602/0	**165/0	**521/0	**141/0
IINT (NI)(6ba)	**153/0		**151/0	**787/0	**093/0	**657/0
FINT (OP)(6ab)	**561/0	**141/0		**204/0	**781/0	**169/0
IINT (OP)(6bb)	**154/0	**769/0	**192/0		**137/0	**827/0
FINT (GP)(6ac)	**471/0	**095/0	**735/0	**135/0		**142/0
IINT (GP)(6bc)	**125/0	**675/0	**156/0	**829/0	**118/0	

** . The correlation at the level of 0.01 (1 sequence) is significant.

- Testing hypotheses.

In this research, the main hypothesis is stated as follows:

1. The financial ratio of profit margin as a useful criterion for main profit (stable) and a valid indicator for the quality of profit in the Tehran Stock Exchange companies is usable. This hypothesis is based on three hypotheses. The first two hypotheses, expressed below, are tested based on equations 7a and 7b, and the coefficients of 7a and 7b:

Sub-hypothesis 1.1: The average specific profit margin of a company over the past four years (time series) is a good criterion for separating original (stable) and non-

core (unstable) profits because the profit margin is assumed to return to its underlying value over time.

Sub-hypothesis 1.2: The average current profit margin in the industry to which the company belongs is (cross-sectional) is an appropriate criterion for distinguishing the main (sustainable) and non-core (unstable) profits.

If a deviation from profit margin contributes to the extraction of original (sustainable) profits, the continuation of the main (sustainable) benefit component is expected to be greater than the non-principal (unstable) component, as measured here. To estimate the continuity of the main (stable) and non-main (unstable) components of profit, the mean

coefficients of 7a and 7b obtained from the following regression models will be used, based on seasonal data and Fama and MacBeth regression (1973):

$$\text{Profit}_{it} = \alpha_{0i} + \alpha_{1i}FCORE(\text{Profit})_{i,t-4} + \alpha_{2i}FNCORE(\text{Profit})_{i,t-4} + \alpha_{3i}CV(\text{Profit})_{i,t} + \alpha_{4i}BM_{i,t} + \alpha_{5i}MV_{i,t} + \varepsilon_{i,t} \quad (7a)$$

$$\text{Profit}_{it} = \alpha_{0i} + \alpha_{1i}ICORE(\text{Profit})_{i,t-4} + \alpha_{2i}INCORE(\text{Profit})_{i,t-4} + \alpha_{3i}CV(\text{Profit})_{i,t} + \alpha_{4i}BM_{i,t} + \alpha_{5i}MV_{i,t} + \varepsilon_{i,t} \quad (7b)$$

In a way that:

$$\text{Profit}_{it} = \{NI_{it}(7a)(7ba), \quad EBIT_{it}(7b)(7bb), \quad GP_{it}(7c)(7bc)\}$$

The results of Table 6 show that for all three measures of profit (NI, EBIT, or GP), the continuity of the original gain, measured at 7a, is significantly larger than the non-core (unsustainable) gain, which is measured at 7b. The main profit coefficients for specific criteria of the company and based on industry were significant at the significance level of 0.95% and with a probability less than 0.05. That is, deviation from profit margins helps to extract sustainable profits. In addition, by increasing in profit and loss statement items, the continuity of both the main and non-main components of profit increases. Predicting gross profit is easier than net profit because the ratio of profit from

gross to net on profit and loss ratio is generally larger to smaller than the profit ratio and therefore becomes less predictable. Finally, based on the results of Table 6 and greater values of coefficient 7a and the significance of the results, sub-hypotheses 7 and 8 are confirmed.

To test the sub-hypothesis 3 equation 8 is estimated and its results are investigated, hypothesis 3 is:

Sub-hypothesis 1.3: Current and past profit margins can be used to establish a useful measure of original (sustainable) profit and separate the non-core (unstable) component from it.

In Equation 8, the focus is on the relationship between ICE and continuity of profits. All companies are sorted according to ICE criteria (FINT and IINT). Equation (8) is estimated for each of the five quintile portfolios and the continuity of profit (1γ) is presented in Table 4-5.

$$\text{Profit}_{it} = \gamma_{0i} + \gamma_{1i}(\text{Profit})_{i,t-4} + \gamma_{2i}CV(\text{Profit})_{i,t} + \gamma_{3i}BM_{i,t} + \gamma_{4i}MV_{i,t} + \psi_{i,t} \quad (8a,8b)$$

In a way that:

$$\text{Profit}_{it} = \{NI_{it}(8a)(8ba), \quad EBIT_{it}(8b)(8bb), \quad GP_{it}(8c)(8ba)\}$$

Table 6 Continuity of Main and Non-Principal Components of Profits

Model	CORE (a1)	NCORE (a2)	CV (a3)	BM (a4)	MV (a5)	Adj-R2 N
Net Income						
7a	242/0	005/0	058/0	539/0	402/0	277/0
	26/6	58/3	43/2	67/1	32/9	3432
7b	535/0	003/0-	022/0	385/0	383/0	250/0
	76/7	21/1-	1	86/1	37/7	3300
EBIT						
7a	405/0	003/0-	081/0	327/0	236/0	316/0
	79/12	13/4-	35/2	19/1	38/6	3432
7b	269/0	008/0	033/0	264/0	306/0	278/0
	63/5	86/5	42/1	15/2	42/6	3300
Gross Profit						
7a	540/0	003/0-	087/0	273/0-	173/0	435/0
	09/13	26/3-	82/1	38/0-	26/5	3432
7b	821/0	009/0	022/0	178/0	114/0	633/0
	55/28	96/5	79/0	97/1	19/6	3300

The results of Table 7 show that the average stability coefficient, 1γ , increases uniformly with the intensity quintile for core profit intensity metrics based on company-specific and industry-based. Stability coefficients of 1γ between quintiles were significant at the significance level of 0.95%, with probability less than 0.05 and for three profit criteria (NI, EBIT, and GP).

In general, the evidence in tables 6 and 7 shows that there is a positive relationship between the continuity of profits and the intensity of the main

profit, which confirms the validity of the quality of profit criterion introduced in this research. These results are also consistent with the view that deviation analysis of profit margins is a useful way to extract information about sustainable profits. Finally, the high coefficients of 1γ in the high quintiles of profit intensity and its significance confirm hypothesis 3, in other words, the current and past profit margins can be used to create a useful criterion of the main profit (stable) and separate the non-main (unstable) component from it.

Table 7 Effect of Primary Intensity on Earnings Continuity

Average Stability Coefficient (1γ)						pentacle
IINTt-4 (Industry based intensity)			FINTt-4 (Firm-based intensity)			
NI(8aa)	EBIT(8ab)	GP(8ac)	NI(8ba)	EBIT(8bb)	GP(8bc)	
30/0	16/0	14/0	22/0	23/0	06/0	1
19/0	12/0	11/0	03/0	14/0	001/0	2
16/0	08/0	16/0	03/0	09/0	10/0	3
23/0	07/0	14/0	23/0	04/0	26/0	4
11/0	11/0	22/0	48/0	31/0	58/0	5

Table 1-5 summarizes the results of the research

Researchers	Research Title	Summary of Research Results
Eli Amir, Eti Einhorn & Itay Kama (2013)	Extracting sustainable profits from profit margins	The method of this research is based on extracting information from profit margins, this method facilitates estimating the main (stable) and non-main (transient) components of profit and also facilitates the construction of a new criterion related to the main characteristics of earnings quality.
Anshika Agarwal, Sumat P. Aggarwal & Sunita Gupta (2019)	Sustainable Income: A New Look at the Emerging Financial Economy	Deviation from profit margin shows information about profit sustainability and there is a significant difference between original (stable) and non-original (transient) profits.

Conclusions and suggestions

Indeed, profit margins, like other financial ratios, are composed of two economically significant metrics. A deviation of a ratio from its normal or expected value may indicate an unsustainable shock. For instance, when net profit increases, it is expected that sales would also rise proportionately. Therefore, if there is a sustained increase in profits without a corresponding increase in sales, it raises questions about the sustainability of those profits. Conversely, if profits

decline while sales remain stable or rise, it may also be a cause for concern.

Amir, Eti Einhorn, and Itay Kama (2013) propose a simple yet powerful measure of profit quality based on this argument. By using this measure, investors can approximate reported profits and extract the stable profit components while filtering out the unstable elements. This approach helps investors gain a better understanding of the underlying components of reported profits, allowing them to identify and

differentiate between sustainable and non-sustainable profit sources.

By applying this method, investors can make more informed decisions and assess a company's financial performance more accurately. It assists them in evaluating the reliability and stability of a company's profits, enabling them to gauge the company's financial health and potential for long-term success.

In summary, the measure proposed by Amir, Eti Einhorn, and Itay Kama provides investors with a valuable tool to assess profit quality by distinguishing between stable and unstable profit components, leading to more accurate financial analysis and better investment decisions.

In this research, the objective was to extract sustainable profit for three criteria of profit: net income (NI), earnings before interest and taxes (EBIT), and gross profit (GP). The researchers used the financial ratio of profit margin and applied two approaches: a company-specific approach (time series) and an industry-based approach (cross-sectional). By calculating the profit margin based on these approaches, the researchers were able to separate profit into two main components: stable and non-core (unstable).

Sub-hypothesis 1-1 and 1-2 were confirmed through regression analysis, as the coefficients of the main (stable) and non-main (unstable) components of profit were found to be significant at the 95% confidence level. This confirmed that the average profit margin of the company over the past four years (time series) and the current average profit margin of the industry to which the company belongs (cross-sectional) are suitable measures for distinguishing between sustainable and non-sustainable profits.

Furthermore, a criterion called ICE's main profit intensity was calculated, which helped to verify the original hypothesis. In sub-hypothesis 1-3, regression estimation was performed in different quantiles, and the results indicated a significant positive relationship between higher ICE criterion and profit continuity. This suggests that there is a correlation between earnings continuity and the intensity of the main profit, and that both current and past profits can serve as a basis for establishing a useful criterion of main (sustainable) profit.

The results of this research align with previous studies by Amir, Eti Einhorn, and Itay Kama (2013) and Anshika Agarwal, Sumat P. Aggarwal, and Sunita

Gupta (2019), which also found positive and significant coefficients related to profit sustainability. The application of this criterion in companies listed on the Tehran Stock Exchange is a novel contribution, as it had not been used in internal research before.

In conclusion, the financial ratio of profit margin proves to be a useful criterion for identifying main (stable) profits and serves as a valid indicator of profit quality in companies listed on the Tehran Stock Exchange. The research adds value by introducing and applying this criterion for the first time, contributing to the understanding of profit sustainability in the context of financial analysis for these companies.

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