

Accounting Based-Market Anomalies in Manufacturing Sector of IDX

Hamid Bone

Lecturer of Accounting Science at Mulawarman University

E-mail: hamidbone.feunmul@gmail.com

Abstract

This paper investigates the question of whether so-called anomalous returns predicted by accounting numbers and technical market price are normal returns and compare with predicted earning in abnormal returns. This research investigates the year effects. Historical data from the manufacturing issued data between 2006- 2015 is analyzed. The purpose is to investigate if there is any evidence of returns pattern related to seasonality during this period. The model equates expected returns to expectations of earnings and earnings growth which affected by fundamental and technical factors, so that any variable that forecasts earnings and earnings growth also forecasts required returns if the market prices those outcomes as risky. The empirical results indicate that many accounting anomaly variables forecast forward earnings and growth, and in the same direction in which they forecast returns. Based on Ball (1978) made the straight-forward conjecture that earnings-to-price is a yield (a return on price) which related to risk. By applying the Mishkin test for rational hypothesis, which test for the market efficiency. The empirical analysis found support for the yearly with the lowest stock returns. An investor would have earned on more if you invested on manufacturing stock in IDX. I also found support for the yearly effect that return on current assets, however is stock price and book value give higher anomaly in value of return. In short observed, these variables include stock price and book value, “anomalous” returns associated with these accounting numbers are consistent with the rational pricing.

Keywords: Current Assets, Stock Price, Book Value, Anomaly, Value of Return.

Preface

Anomalies are empirical results that seem to be inconsistent with maintained theories of asset-pricing behavior. They indicate either market inefficiency (profit opportunities) or inadequacies in the underlying asset-pricing model. After they are documented and analyzed in the academic literature, anomalies often seem to disappear, reverse, or attenuate. They argue that financial statements can be applied for a number of different decisions and demands (Holthausen and Watts, 2001). The value relevance literature assumes equity investors are the dominant users of financial reporting and valuation of equity is the dominant use of financial reportin. This raises the question of whether profit opportunities existed in the past, but have since been arbitraged away, or whether the anomalies were simply statistical aberrations that attracted the attention of academics and practitioners. For standard setters however, users can be actual and potential holders of equity and debt securities, trade creditors, customers and employees with claims, lending institutions and individual lenders.

The use of the financial statements is not limited to equity valuation but can predict the return as well, however the technical factors has moderations factor. Accrual anomaly is an important

discovery in the academic literature. Despite the evidence showing its presence in different markets and periods, the reasons for its occurrence are still an open question. Ball, Kothari and Robin (2000) support the idea that technical factors such as the policy imposed in the legal regime, particularly regarding the type of governance implemented, impacts accrual anomaly. In common law countries, the corporate governance system tends to be aimed at all shareholders, by intense use of financial statements and other public disclosures to mitigate problems of asymmetric information, whereas in code law countries, the governance system is oriented to the interests of the main shareholders, in a relationship of private communication (insider information). The differences of the governance system can affect the relevance of accounting information, according to the intensity with which the opportunity and conservatism resulting from the adoption of a determined legal regime reduces/increases information asymmetry, encouraging or discouraging a setting propitious for the occurrence of accrual anomaly. But there is also evidence of the presence of mispricing of accruals in countries with different legal regimes, leading to the perception that the anomaly is more reasonably explained by some systematic risk or a behavioral bias of investors in the use of accruals (LaFond, 2005).

Our aim was to identify whether the market rationally prices earnings in the formation of expectations of future returns in manufacturing sector of Indonesian Stock Exchange. The information available on the market price of assets was incorporated by applying the Mishkin test. Mishkin test is a test used in macro-econometrics for rational hypothesis, which test for the market efficiency. Starting with Sloan (1996) the model has been applied to accruals anomaly literature. Since Sloan (1996), the model has known various improvements and it has been the subject to many debates in the literature regarding its efficacy. This procedure is usually included in the studies of accrual anomaly and permits identifying possible bias between the intrinsic value of an asset and its market value. If there is asymmetry between rational valuation and market valuation, there will be an opportunity for abnormal gains by exploiting the persistence of earnings and their components. The number of documented anomalies is large and continues to grow. The focus here will be on equity market anomalies, and on the subset whose existence has proven most robust with respect to both time and the number of stock markets in which they have been observed.

We broadly classify the findings as being cross-sectional or time series in nature among 17 emitters in manufacturing sector. The separately-identified value and size effects are not independent phenomena because the security characteristics all share a common variable – price per share of the firm's common stock. Indeed, researchers have shown a high rank correlation between current assets and price, and others have documented a significant cross-sectional relation between price per share and average returns. To sort out the relative importance of the different variables, Fama and French (1992) (FF) estimate multiple value and size variables included as explanatory variables. In this context, the value and size variables can be viewed as capturing sensitivities to the omitted factors, and the coefficients multiplying the value and size variables are estimates of the risk premium required to compensate for that exposure.

The urgency of this research Substantial evidence supporting the Efficient Market Hypothesis (EMH) also has been documented over the years. EMH states that security prices fully reflect all available information and will immediately adjust to the arrival of new information (Adam, 2004). However, since market was closed on both Saturday and Sunday, it was argued that investors cannot do anything with the market even though they got some information during the weekend (Nik Maheran & Nik Muhd, 2010).

This paper however, introduces a novelty. It approaches the anomaly literature from a completely different angle and demonstrates a new purpose it can serve: contributing to the evaluation of accounting standards. The predictable returns are exploited in contrarian and value versus growth investment strategies with the presumption that they are due to market mispricing. However, Ball (1978) made the straight-forward conjecture that earnings-to-price is a yield (a return on price) which, like a bond yield, might be related to risk. That conjecture would be more persuasive with a formal

model of how the earnings yield relates to risk and return. For a bond, a model is available: a bond “pricing model” directs the internal-rate-of-return calculation that supplies the expected yield.

Theoretical Background

Accrual Anomaly

Sloan (1996) empirically identified that investors tend to overvalue accruals in forming expectations about the future earnings of IDX. In the view of Defond and Park (2001), the market exaggerates in measuring accruals because investors’ expectations are biased in anticipating future reversal of this earnings component. As a consequence, companies with high (low) levels of accruals obtain negative (positive) abnormal returns, a phenomenon known as accrual anomaly. Since then, various works have examined this anomaly. Indeed, it is one of the most studied topics in recent studies of capital markets (Green, Hand, & Soliman, 2011). This research basically has three categories of focus. One group of studies relates accrual anomaly with other anomalies, such as the works of Collins and Hribar (2000), Desai, Rajgopal and Venkatachalam (2004), and Fama and French (2008). The first work identified that accrual anomaly is different than post-earnings announcement drift. The second work examined accrual anomaly in the context of value glamour with growth of book-to-market, earnings-market price or market price ratios to perform worse than firms with contrary indicators. The third work found that, together with momentum (short-term returns tend to follow those observed in the recent past), accrual anomaly has the most evidence in the IDX.

In the academic literature, many different types of anomalies are identified. The existence of size, value, profitability, growth, net stock issues, momentum and accrual anomalies has been discussed (Fama & French, 2008). For this paper, we have chosen to revisit the most seminal anomaly: the accrual anomaly. When anomalies or inefficiencies are brought to the attention of standard setters, they are alerted of the gaps in their rules and regulations. Accordingly, they are aware of the topics in the accounting standards that need adjustment. So instead of letting value relevance research uncover adequate accounting standards, the anomaly literature now shows which accounting standards possibly lead to inefficiencies and therefore need to be improved. Since this literature does not assume efficient markets, but only requires that markets have a tendency to be efficient and allows that markets can be temporarily inefficient, it constitutes a valuable alternative to value relevance research.

Surveys of the efficient markets literature date back at least to Fama (1970), and there are several recent updates, including Fama (1991) and Keim and Ziemba (2000), that stress particular areas of the finance literature. The goal is to highlight some interesting findings that have emerged from the research of many people and to raise questions about the implications of these findings for the way academics and practitioners use financial theory. At a fundamental level, anomalies can only be defined relative to a model of “normal” return behavior. Fama (1970) noted this fact early on, pointing out that tests of market efficiency also jointly test a maintained hypothesis about equilibrium expected asset returns. Thus, whenever someone concludes that a finding seems to indicate market inefficiency, it may also be evidence that the underlying asset-pricing model is inadequate. It is also important to consider the economic relevance of a presumed anomaly. Jensen (1978) stressed the importance of trading profitability in assessing market efficiency. In particular, if anomalous return behavior is not definitive enough for an efficient trader to make money trading on it, then it is not economically significant.

Market Efficiency

Abnormal returns will always occur, but they have to be predictable and systematic to constitute an indication of market inefficiency. This definition of market efficiency directly reflects the practical relevance of academic research into return behavior. It also highlights the importance of transactions costs and other market microstructure issues for defining market efficiency. Fama and French (1993)

used their three-factor model to explore several of the anomalies that have been identified in earlier literature, where the test of abnormal returns is based on whether $a_i = 0$ in Equation. They found that abnormal returns from the three-factor model are not reliably different from zero for portfolios of stocks sorted by: equity capitalization, B/M ratios, dividend yield, or earnings-to-price ratios. The largest deviations from their three-factor model occur in the portfolio of low B/M (i.e., growth) stocks, where small-capitalization stocks have returns that are too low and large-capitalization stocks have returns that are too high ($a_i > 0$).

A crucial assumption in value relevance research is that markets are efficient. Fama (1970) defines an efficient market as one in which “security prices fully reflect all available information”. The price adjustment process to information is thus instantaneous and/or trivial. This hypothesis of market efficiency (EMH) has been widely considered to be proved beyond doubt for many years. This was due to an indisputable faith in the mechanism of arbitrage. Arbitrage means that pieces of value relevant information that are not reflected in the stock prices yet, are traded on. As a result, prices are adjusted until they fully reflect all publicly available information. However in recent years, evidence against this efficient market hypothesis has been mounting (Lee, 2001). This is one of the issues discussed in the next paragraph.

The aim of the anomaly literature is to examine whether, how, when and why such abnormal returns occur. Evidence of the existence of predictable abnormal returns points to market inefficiency. This means that not all publicly available and relevant accounting information is immediately and correctly reflected in stock prices. Abnormal returns can serve as evidence of market inefficiency since such abnormal returns usually do not exist in efficient markets because of arbitrage. Usually, the anomaly literature tests and explains market inefficiency. The anomaly literature examines whether the cross-section of returns on portfolios is consistent with a model of expected returns like the Capital Asset Pricing Model (CAPM) (Kothari, 2001). This means that the actual or observed return on a portfolio is compared with the normal or expected return. The normal return is predicted by a market model, for example the CAPM. The return in excess of the normal return is called the abnormal return. Such an abnormal return can either be positive or negative, depending on whether the portfolio outperforms or underperforms the market. The Capital Asset Pricing Model (CAPM) is a model used to determine the expected return on an individual security. The model was introduced independently by John Lintner and William Sharpe. It can be represented by the following equation: $R_{it} = R_{rft} + \beta_i (R_{mt} - R_{rft})$, or: expected return on a security = risk-free rate + beta of the security (expected return on market - risk-free rate). This means that the expected return on a security consists of a risk-free return and a risk premium beta. Beta is a measure of the systematic risk (Ross, Westerfield & Jaffe, 2005).

Methodology

Definition of Variables

Empirical tests of the CAPM first became possible with the creation of computerized databases of stock prices in IDX. To implement the tests, researchers often estimate cross-sectional regressions of the form $R_i = a_0 + a_1\beta_i + \sum a_j c_{ij} + e_i$ (1) where β_i is the security's beta which measures its covariance with the return on the market and c_{ij} represents security-specific characteristic j (size, earnings yield, etc.) for security i . The CAPM predicts that the a_j , for $j > 1$, are zero. Early tests supported the CAPM (e.g., significant positive values for a_1 , insignificant values for a_j , for $j > 1$). The explanatory power of beta came into question in the late 1970s when researchers identified security characteristics such as the earnings-to-price ratio and market capitalization of common equity with more explanatory power than beta. This section presents a sample of the more important contributions in this area that collectively stand as a challenge for alternative asset pricing models. Historical data from the manufacturing issued data between 2006- 2015 is analyzed. The purpose is to investigate if there is any evidence of returns pattern related to seasonality during this period. The model equates expected returns to expectations of earnings and earnings growth which affected by fundamental and

technical factors, so that any variable that forecasts earnings and earnings growth also forecasts required returns if the market prices those outcomes as risky.

We broadly classify the findings as being cross-sectional or time series in nature among 17 emitters in manufacturing sector. Mishkin test implies the estimation of two equations: a rational forecasting equation and a market equilibrium pricing equation. The estimated parameters from the forecasting equation are compared with the estimated parameters from the pricing equation. This comparison helps testing for investors' fixation on earnings hypothesis (Dechow et al., 2011). In Xie (2001) approach, Mishkin test is a statistical comparison between the forecasting coefficient of abnormal accruals and the valuation coefficient of abnormal accruals. If the valuation coefficient is significantly smaller (larger) than the forecasting coefficient, it signals an underpricing (overpricing) of abnormal accruals (Xie, 2001). The forecasting coefficient can also be interpreted as a measure of the persistence of abnormal accruals. Mishkin test is a test used in macro econometrics testing for the market efficiency.

In general, the studies that apply Mishkin test reject market efficiency. Mishkin test tests whether market's objective expectation of earnings is the same with the objective expectation of earnings based on previous information. In accruals anomaly literature it is combined the persistence model with the rational pricing model. It results the following system: $Earnings_{t+1} = \alpha_0 + \alpha_1 \text{Current Assets}_t + v_{t+1}$ and $\text{Abnormal return} = \beta(Earnings_{t+1} - \alpha_0 - \alpha_1 \text{Earnings}_t + \epsilon_{t+1})$. In the above equation, the compulsory constraint of market efficiency is that $\alpha = \alpha^*$, which enforces correct anticipated stock prices for earnings performance (Sloan, 1996).

Applying the different persistence for the accrual and cash flow components of earnings proposed by Sloan (1996), the model transforms itself in one of the most used versions of the Mishkin Test. $Earnings_{t+1} = \gamma_0 + \gamma_1 \text{Accrual}_t + \gamma_2 \text{Cash Flow}_t + v_{t+1}$ and $\text{Abnormal return} = \beta(Earnings_{t+1} - \gamma_0 - \gamma_1 \text{Earnings}_t + \gamma_2 \text{Cash Flow}_t + \epsilon_{t+1})$. Now, the market efficiency demands for the model two constraints $\gamma_1 = \gamma_1^*$ and $\gamma_2 = \gamma_2^*$, which requires that market anticipates rationally the impact of current accrual and cash flow on future earnings. As the different earnings persistence implies that $\gamma_1 < \gamma_2$, the market efficiency imposes that $\gamma_1^* < \gamma_2^*$. These two coefficients may be equal if investors are not able to distinguish between accrual and cash flow components of earnings (Sloan, 1996). The second equation implies that the returns from year t+1 are responding to the unexpected earnings in year t+1. β represents the earnings response coefficient or the valuation multiplier. Unexpected earnings are comprised in the parenthesis.

Econometric Like Hood

Empirical research has demonstrated that the fundamental accounting components are more persistent than the market components. Persistence means that the value of a component in a period is a good indicator of that component's value in the next period. Accordingly, the value of cash components in a period is a good indicator of their value in the next period, while the value of accrual components in a period is not. The underlying reasoning is that current assets is less subject to distortion. Market indicator on the other hand, require management judgment and are therefore subjective. This is specified in the following equation: $Earnings_{t+1} = \gamma_0 + \gamma_1 \text{Current Assets}_t + \gamma_2 \text{Book value}_t + v_{t+1}$, With $\gamma_1 < \gamma_2$, where γ_1 = coefficient on accrual, and γ_2 = coefficient on cash flow. In this work, we used current assets, stock price, and book value of stock as our earnings measure, defined as predicted earnings. For this, the distribution of the series is divided into quantities by size, whose proxy is the natural logarithm of the company's market value. Next, the return of the control portfolio is identified by the average of the gross returns of the individual assets with equivalent sizes. Formally, $\text{Abnormal Return}_{i,t} = \text{Return}_{i,t} - \frac{1}{n} \sum_{t=1}^n \text{Return}_{i,t}$, where the abnormal return of asset i in period t and $\frac{1}{n} \sum_{t=1}^n \text{Return}_{i,t}$ is the average of the returns of the assets that compose the control portfolio. The other definitions (time window and buy-and-hold returns) are identical to those used to calculate the gross returns. This is the

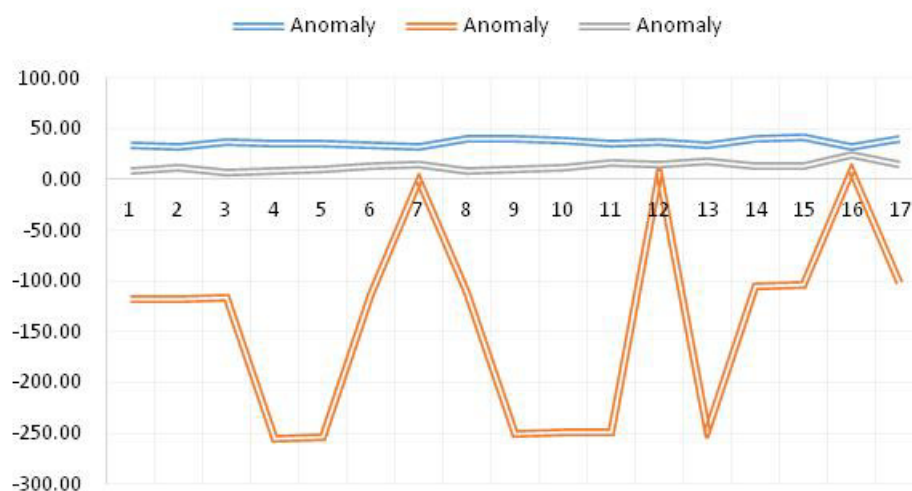
method of calculating abnormal returns not only in studies of accrual anomaly (Penman & Zhang, 2002; Sloan, 1996; Xie, 2001) but also in examinations of other anomalies in the financial literature (Bernard *et al.*, 1997).

Table 1 Statistic Estimation

	β	r			σ
		Zero-order	Partial	Part	
Constant	24.73				0.77
Current Assets	0.26	-0.20	0.06	0.06	0.39
Stock Price	-0.00	-0.31	-0.28	-0.28	0.00
Book Value	-0.32	-0.21	-0.08	-0.07	0.39

The dashed line in table 1 represents beta indicator (β), correlation (r) and standard deviation (σ). Current assets implicate the positive to market value, while stock price and book value implicate the negative correlation toward the market price. The adjustment eliminates the negative drift in abnormal returns because the estimated intercepts in the market model are systematically positive for bidder stocks in the year and a half before the bid, reflecting the fact that bidder firms are more likely to have recently experienced good performance, at least in terms of their stock prices. This abnormally good performance vanishes after the first bid (as it should in an efficient market). Persistent with Figure 1 showing the wide range of anomalies in stock price, while the book value and stock price showing the stable relation

ANOMALIES ON FUNDAMENTAL AND TECHNICAL



In Table 2. Cumulative average abnormal returns relative to the period 2006- 2015. Market model parameters used to define abnormal returns are estimated using book value and stock price for the period 2006- 2015. The solid line shows the effect of setting the intercepts to zero, since the bidder firms seem to have abnormally high stock returns during the estimation period. There are 17 emitters listed showed anomalies in this period.

Table 2: Cross Calendar Anomalies Among 17 Emitters

Emiten	Current Assets 0.67	R _{CA}	Stock Price (0.28)	R _{SP}	Book Value (0.82)	R _{BV}	Closing Price	Based Accounting Anomaly		
								Current Assets	Stock Price	Book Value
Astra International Tbk	11.14	36.25	-140.29	-115.56	-14.71	10.41	2.34	33.91	-117.90	8.07
Astra Otoparts Tbk	9.46	34.57	-140.29	-114.56	-11.88	14.24	2.66	31.92	-117.22	11.58
Indo Kordsa Tbk	13.81	38.93	-140.29	-113.56	-17.34	9.78	2.28	36.65	-115.84	7.50
Delta Djakarta Tbk	13.34	38.45	-280.58	-252.85	-16.41	11.71	2.46	35.99	-255.31	9.25
Goodyear Indonesia Tbk	13.18	38.30	-280.58	-251.85	-15.61	13.51	2.60	35.69	-254.45	10.90
Gudang Garam Tbk	11.10	36.21	-140.29	-110.56	-13.49	16.63	2.81	33.40	-113.37	13.82
HM Sampoerna Tbk	10.80	35.91	-28.06	2.67	-12.81	18.31	2.91	33.00	-0.24	15.40
Champion Pacific Indonesia Tbk	17.52	42.64	-140.29	-108.56	-21.46	10.66	2.37	40.27	-110.93	8.30
Lion Metal Works Tbk	17.32	42.44	-280.58	-247.85	-21.17	11.95	2.48	39.96	-250.33	9.47
Lionmesh Prima Tbk	16.24	41.36	-280.58	-246.85	-19.73	14.39	2.67	38.69	-249.52	11.72
Merck Tbk	12.91	38.02	-280.58	-245.85	-15.86	19.26	2.96	35.07	-248.81	16.30
Semen Gresik (Persero) Tbk	14.89	40.00	-28.06	7.67	-18.45	17.67	2.87	37.13	4.80	14.80
Taisho Pharmaceutical Indonesia Tbk	12.61	37.73	-280.58	-243.85	-15.37	21.74	3.08	34.65	-246.93	18.67
Mandom Indonesia Tbk	17.88	42.99	-140.29	-102.56	-22.35	15.76	2.76	40.23	-105.32	13.01
Tempo Scan Pacific Tbk	18.99	44.11	-140.29	-101.56	-23.28	15.84	2.76	41.34	-104.32	13.08
Unilever Indonesia Tbk	9.95	35.07	-28.06	11.67	-12.08	28.04	3.33	31.73	8.34	24.71
Mayora Indah Tbk	18.42	43.54	-140.29	-99.56	-22.71	18.41	2.91	40.62	-102.47	15.50

Conclusions and Recommendations

The first hypothesis investigated establishes that the persistence of market components is mispriced by the market. To test this assumption, we applied an adaptation of Sloan (1996) to the Mishkin test. The results suggest that the market exaggerates in pricing the market component of earnings. This conclusion was submitted to some constraints to identify its robustness. Among the restrictions, the most rigorous one requires that the valuation coefficients (by the market) and forecasting coefficients (by rational expectations) be equal. In this case, we found that the hypothesis that currents assets correctly priced by the market cannot be rejected.

Discussion

As an alternative procedure to the analyses based on trading strategy, the predictive power of the components of earnings for returns was identified by panel data regressions. The first of these confirmed that current assets are positively and significantly related to future returns. When marker components were indicating that for the sample explanatory power for future returns. This finding in IDX manufacturing sector differs from that for the U.S. market, where this relationship has been found to be negative.

It should be pointed out that the evidence of the occurrence of fundamental anomaly is modest, where this anomaly has been detected, including Canada, Australia and the United Kingdom (Chan *et al.*, 2006; Clinch, Fuller, Rajgopal, & Venkatachalam, 2007). In the Indonesia market, the evidence of fundamental anomaly is favorable to the existence. The empirical tests did not identify consistent and statistically significant abnormal returns, a necessary condition for such a trading strategy (based on a zero-investment portfolio) to be efficient.

In Indonesian stock exchange case, besides the findings pointed out above, this study revealed that negatively related market price, that earnings management is common with the intent of decreasing the reported earnings; and that variations in the magnitude of abnormal indicator between in market indicators.

Findings

Some specific circumstances in the Indonesia capital markets and corporate reporting system, such as poor corporate governance, concentrated ownership, lack of transparency in the disclosure of accounting numbers and strong tax influence (Lopes & Galdi, 2006), may provide explanation for these results. The field of research into themes related to fundamentals and market indicators. In

reality, fundamental factor can be used, together with other variables, to identify problems related to the operational aspects of market price. The legal regime followed, corporate governance, the role of auditing, the influence of sophisticated investors and the relevance of accounting information are some of the many variables that can be employed to study the effect of accruals in the Indonesian capital market.

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