Earnings quality of Indonesian firms surrounding initial public offerings

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Abstract: This research aims to examine the changes in earnings quality of Indonesian firms transitioning from private to public companies by examining accounting-based attributes of earnings; accrual quality, earnings persistence, and earnings predictability, before and after IPO. Accrual quality is assessed using the abnormal accrual model and Dechow and Dichev (DD) model; earnings persistence and predictability are assessed through net income autoregressive model. Using 103 Indonesian non-finance IPO firms, this research concludes that earnings quality of IPO firms changed along with the alteration of their status from private to public firms. Post-IPO (after becoming public firms), the sample shows a higher quality of earnings in terms of accrual quality and earnings persistence increases after IPO. However, this research could not reject the hypothesis of decreasing post-IPO earnings predictability due to the nature of IPO firms.

Keywords: earnings quality; initial public offerings; IPOs; accrual quality; earnings persistence; earnings predictability; Indonesia.


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1 Introduction

There have been many studies investigating the earnings management practices at initial public offering (IPO) firms. Since the initial study by Teoh et al. (1998), many scholars studied the quality of financial reports prepared by IPO firms and found mixed results. Burgstahler et al. (2006) as well as Ball and Shivakumar (2005) are amongst the studies that conclude that earnings figures reported by private companies are of lower quality compared to the ones reported by public firms. Conversely, Givoly et al. (2010) suggested that earnings quality of public firms is lower than that of private firms. Meanwhile, Sundgren (2007) reported that no significant difference exists between the earnings quality of private firms and public firms in Finland.

Further to note in this matter is that the above studies do not specifically focus on the changes in earnings quality of firms that transition from private to public firms, because they basically studied one set of private firms and another set of public firms at the same point of time. This paper assesses the earnings quality of firms surrounding IPO period. The IPO period is unique since it allows us to capture the transition period from private firms to public firms. Earnings quality surrounding IPOs is an interesting issue, because when private firms go public, the earnings quality drivers associated with private firms will change and shift to the drivers that belong to public firms, such as the demand of different stakeholders (e.g., regulator, potential investors, financial analysts). The motivation behind the IPO firms’ reporting of earnings as well as the circumstances and controls that affect their earnings quality changes and that will affect their earnings quality.

Using a sample of 103 Indonesian non-finance IPO firms that went public for the period 2007 to 2013, we are able to provide evidence that the earnings quality of IPO firms changed along with the alteration of their status from private to public firms. Confirming the ‘demand hypothesis’, after becoming public firms, the sample shows higher quality of earnings in terms of accrual quality and earnings persistence. However, based on the earnings predictability, this research could not find the support of higher earnings quality in the post-IPO period. We argue that the result is explained by the current life-cycle state of IPO firms as growing firms that are expected to have lower predictability (Dechow and Schrand, 2004).

Our paper makes several contributions. Firstly, this paper is able to provide evidence for the earnings quality change of sample firms that altered their status from private to public firms. Using UK firms’ data, Ball and Shivakumar (2008) examine the financial reporting quality of firms’ transition period from being private to being public in the IPO year. Their study is able to compare the same firms with different settings (being private and ‘would be’ public) at the same point of time. Contrary to the findings of Teoh et al. (1998), they find that prior to an IPO, firms publish more conservative financial reports. Hence, they reject the hypothesis that IPO firms tend to inflate their earnings prior to IPO. Similar to Ball and Shivakumar (2008), this paper also examines the earnings quality of firms leading to their IPO year. However, this paper continues the analysis by assessing the subsequent earnings quality, a year after the IPO year. Hence, this paper is able to provide evidence for the earnings quality change of the sample firms that alter their status from private to public firms.
Secondly, this paper adds to the scarce literature on Indonesian firms by providing evidence on the earnings quality of firms surrounding their IPO years. Indonesia, as an emerging market, has markedly grown over the last four decades. In the period 1977–2013, there have been 600 firms that went public, and more than a quarter occurred in the period 2007–2013. In 2013, there were 30 new public firms in the Indonesia Stock Exchange (IDX) that raised total funds of IDR 57.8 trillion. Compared to other countries in the South East Asia region, in 2013, Indonesia has the highest number of IPOs, followed by Singapore (26), Malaysia (17), and Thailand (13). Despite the increasing number of IPO firms going public in IDX, to the best of our knowledge, studies in Indonesian IPO firms regarding earnings quality are very scarce, if any. This study provides evidence on the earnings quality of firms surrounding their IPO year.

Thirdly, most of the existing Indonesian literature regarding earnings quality focuses on two things: the impact of earnings quality on firms’ valuation (e.g., Fan and Wong, 2002) and the earnings management aspect of earnings quality (e.g., Leuz et al., 2003; Siregar and Utama, 2008; Warganegara and Indriastari, 2009). Siregar and Utama (2008) conclude that earnings management exists among Indonesian publicly listed firms, although the motivation is efficient. Notwithstanding the efficiency earnings management, the results of the study highlight that there is something worthy of further analysis about the earnings quality of Indonesian firms. It is further noteworthy that Siregar and Utama (2008) only study established Indonesian public firms. Their study did not extend to private firms or to firms around their IPOs. Concerning earnings quality pre-IPOs, Warganegara and Indriastari (2009) conclude that no earnings management activity is apparent in Indonesian firms one year before their IPOs. Contrary to those studies, this study aims to provide evidence of the change of earnings quality of firms surrounding their IPOs by examining accounting-based attributes of earnings quality; accruals quality, persistence, and predictability (Gaio and Raposo, 2011). Moreover, the choice of earnings quality attributes is fit to the setting of the research sample since other attributes (market-based attributes) is irrelevant for the pre-IPO analysis due the unavailability of market data for the sample prior to their IPO year.

Lastly, to the best of our knowledge, this is among the first longitudinal studies that would provide empirical evidence and explanation of Indonesian firms’ earnings quality variation before and after their IPO years based on accrual quality, persistence, and predictability.

This paper is organised as follows. Section 2 presents prior studies and hypothesis development. Section 3 presents sample and data analysis. Section 4 discusses the results for each earnings quality aspect. Section 5 presents the conclusion remark.

2 Hypothesis development

As suggested by Givoly et al. (2010, p.199) the ‘opportunistic behaviour hypothesis’ argues that public firms might have stronger motivation than their private counterparts to produce lower quality earnings due to capital market forces. Public firms have higher incentives to manage earnings because they might be motivated to influence stock prices (Fan, 2007; Teoh et al., 1998); to achieve earnings targets (Burgstahler and Dichev, 1997; DeGeorge et al., 1999; Kaznik, 1999); to maximise their stock-based compensation value
(Bergstresser and Philippon, 2006); or because they have less direct monitoring by shareholders for earnings quality – since their shareholders are more widespread and frequently changing, making it less feasible and justifiable for the shareholders be closely involved in the company’s management (Ball and Shivakumar, 2005; Burgstahler et al., 2006).

From the opposite viewpoint, public firms are also faced with features that might drive them to generate higher quality of earnings. First – as suggested by Givoly et al.’s (2010, p.198) in the ‘demand hypothesis’ – public firms experience stronger demand from shareholders for earnings quality, because earnings serve more significance in public firms than private firms (Ball and Shivakumar, 2005, 2008). This is because public firms’ shareholders are more widespread and frequently changing (Burgstahler et al., 2006; Sundgren, 2007), that it is less feasible and justifiable for shareholders to be directly involved in companies’ management or to obtain information directly through an exclusive medium (Burgstahler et al., 2006). Therefore, shareholders put more reliance on earnings figures and demand higher earnings quality accordingly. Second, public firms face greater public scrutiny that effectively requires them to uphold the integrity and quality of their reported earnings figure. Because of this, more information on public firms is available to the public, enabling extensive external monitoring on their earnings quality. This also means public firms are more susceptible to litigation risks should their reported earnings prove to be misleading (Givoly et al., 2010). Third, public firms are most likely to face more extensive regulations for financial reporting. Lastly, public firms might be driven to report high quality earnings to attract capital at the lowest cost as higher earnings quality leads to lower cost of capital (Bhattacharya et al., 2003; Francis et al., 2004).

On the contrary, private firms are not exposed to capital market-related incentives; such as motivation to increase stock prices or to reap benefits from stock-based bonus plans (Givoly et al., 2010); and they are more exposed to direct monitoring from the internal shareholders. Thus, these factors reduce, or at least limit, managers’ motivation to report earnings of low quality. Even so, Ball and Shivakumar (2005) argued that – contrary to public firms – private firms are not faced with stakeholders’ demand for high quality earnings since earnings figure serves less importance in private firms. Interested parties in private firms are more likely to settle their information needs through personal access, suggesting a lesser degree of dependence on earnings figures (Ball and Shivakumar, 2005; Burgstahler et al., 2006). Moreover, as private firms, they, expectedly, experience lower public scrutiny and legal action risk; compared to public firms (Givoly et al., 2010). Additionally, even with the absence of capital market related incentives, private firms might still be driven to manage earnings – hence, producing lower earnings quality – to manage taxes, to enhance their earnings-based bonuses (Guidry et al., 1999), or to avoid violation of debt covenants (Jha, 2013). Moreover, as private firms, they, expectedly, experience lesser public scrutiny and legal action risk, relatively, compared to public firms (Givoly et al., 2010). In the past, few studies focus their attention on earnings management around the time when firms went public. Using US firms Teoh et al. (1998) examine and find that firms indeed opportunistically utilise accruals to inflate their reported earnings during the IPO, the motivation of which is most likely to drive stock price upward. Consistently, Fan (2007) confirmed Teoh et al.’s (1998) findings by documenting that firms’ discretionary
accruals level reaches its maximum point in the year of IPO and affirmed that this translates into an indication of upward earnings management. However, contrary to the above studies, Ball and Shivakumar (2008) find that the reported earnings of firms at the time of their IPOs are of higher quality – by exhibiting higher conservatism – than the figures reported when the firms were still private as a response to the demand from capital market constituents and legal authority for higher quality of financial figures. In line with this, Venkataraman et al. (2008) observe lower level of accruals in the audited financial statements of firms before IPOs compared to the one after IPOs owing to more intense lawsuit risks and stricter audits faced by firms conducting IPOs. Warganegara and Indriastari (2009) further concluded that no earnings management activity is apparent in Indonesian firms one year before their IPOs and attributed this finding to the enhanced demand of quality reporting on public firms, both by the shareholders and by prerequisites imposed by the government.

Pertaining to BAPEPAM\(^3\) Regulation No. X.K.6, the requirement to audit financial statements and the fact that the financial statements must be submitted to the authorities, shareholders, and public indicate that earnings figures are scrutinised more extensively – thus providing another control to enhance earnings quality. Krishnan (2003) argues that independent examination by external auditors yields positive outcomes in restraining opportunistic earnings management. Further, inclusion of statements of accountability and board members’ signatures for accountability over financial statements as a requirement of BAPEPAM regulation provides another driver for public companies to report truthful earnings of high quality. Standardised materiality threshold related to earnings as regulated by BAPEPAM Regulation No. VIII.G.7 further helps prevent earnings management conducted through loopholes in materiality’s grey-areas.

In addition to the above, to be publicly listed in the IDX, it is compulsory for companies to have at least 30% of the Board of Commissioners composed of independent commissioners and to have an audit committee. Bradbury et al. (2006), Hermawan and Adinda (2012) as well as Klein (2002) provided consistent evidence from various countries that increased independence in the board composition imposes favourable effects on the quality of earnings.

We acknowledge the validity of the notion that public firms face incentives to generate lower earnings quality – such as capital market forces to affect stock price, motivation to meet or surpass analysts’ earnings forecasts, and motivation to avoid reporting losses or a decrease in earnings. Nevertheless, we believe that once a company becomes public; higher demand for earnings quality, tighter regulations, widespread public scrutiny and external monitoring, as well as risk for potential lawsuit provide effective controls to suppress the incentives to report lower quality of earnings. Accordingly, we hypothesise that earnings quality of Indonesian firms improves subsequent to their IPOs.

3 Sample and data analysis

3.1 Sample

The sample of this research is all Indonesian firms that conducted their IPOs between 2007 and 2013, excluding those from the finance industry. The derivation of the final sample of 103 IPO firms is presented in Table 1. The data was manually collected, from
the sample IPO prospectuses, post-IPO annual reports, as well as IDX internet-based resources. The missing data represents missing documents (prospectuses and annual reports) and unavailable data from IDX internet-based resources. IPO firms that report their financial statements in foreign currency were also excluded from the sample. Outliers were defined as the 1% at the top and bottom of the distribution, which were treated using winsorising method.

Table 1

<table>
<thead>
<tr>
<th></th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total IPO</td>
<td>22</td>
<td>19</td>
<td>12</td>
<td>23</td>
<td>26</td>
<td>22</td>
<td>30</td>
<td>154</td>
</tr>
<tr>
<td>Less (finance firms)</td>
<td>2</td>
<td>3</td>
<td>2</td>
<td>2</td>
<td>3</td>
<td>2</td>
<td>6</td>
<td>20</td>
</tr>
<tr>
<td>Less (report in foreign currency)</td>
<td>2</td>
<td>2</td>
<td>1</td>
<td>-</td>
<td>2</td>
<td>-</td>
<td>3</td>
<td>10</td>
</tr>
<tr>
<td>Less (missing data)</td>
<td>2</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>21</td>
</tr>
<tr>
<td>Final sample</td>
<td>16</td>
<td>12</td>
<td>7</td>
<td>17</td>
<td>18</td>
<td>17</td>
<td>15</td>
<td>103</td>
</tr>
</tbody>
</table>

The table shows that there were an increasing number of firms, which went public from 2007 to 2013. The year 2009 highlights the effects of one of the global economic crisis in the Indonesian capital market. The market seemed to recover in year 2010 and 2013 with a slight decrease in 2012. Using the statistical models presented in equations (1) and (2) for analysis, the most updated sample used in this research is IPO firms in 2013.

3.2 Data analysis

This research focuses on three accounting-based attributes of earnings quality: accrual quality, earnings persistence, and earnings predictability. The reason for this study to focus on the accounting-based earnings quality is driven by the findings of Francis et al. (2004), who argue that accounting-based earnings attributes are superior to market-based earnings attributes, as reflected in their significant impacts on cost of equity. Furthermore, Gaio and Raposo (2011) explain that these accounting-based attributes assume that earnings role is seen as a corrector of cash flow allocation to periods by using accruals. This is a very significant role in the IPO firms, especially, after the IPO, when they have a big cash in-flow from the net proceeds received at the IPO. Additionally, since this study aims to investigate the earnings quality of firms before and after IPOs, the market-based earnings attributes – which are based on capital market stock prices or stock return – would not be applicable for the state when the firms are still private. Each aspect of earnings quality is measured twice: one year before and one year after the IPO.

3.3 Accrual Quality

There are three main reasons for selecting accrual quality as one of the earnings quality properties to examine. First, Francis et al. (2004) affirmed that, among all the investigated seven earnings attributes, accrual quality holds the highest significance in terms of its capability to reduce information risks. Second, accrual is the only distinction between earnings and cash flows. Since accruals are where the discretion, judgment, and estimates could materialise (Dechow and Dichev, 2002), it is reasonable to presume that accruals are a possible source for quality issues in earnings. Third, investigating the
accrual quality, especially from the discretionary accruals, also provides an indication for earnings management.

This research examines accrual quality using Dechow and Dichev’s (2002) model (DD model). The accrual approach is selected because, in indicating the quality of accruals, this approach also provides an insight into firms’ earnings management behaviour. This is particularly relevant in the case of IPO firms; considering the fact that much research argues that firms around their IPOs are susceptible to earnings management (e.g. Teoh et al., 1998; Fan, 2007). Moreover, this study employs the DD model based on the reasoning that firms around the IPO might be motivated to utilise accruals to change the timing of their cash flow recognition to increase their earnings to boost the IPO stock price.

The DD model used is expressed as follows.

\[
\Delta WC_t = \phi_0 + \phi_1 \times CFO_{t-1} + \phi_2 \times CFO_t + \phi_3 \times CFO_{t+1} + \nu_{t,t}
\]

where, \(\Delta WC\) = changes in working capital, calculated as = \(\Delta A/R + \Delta Inventory - \Delta A/P + \Delta Other non-cash current assets (net)\); CFO = operating cash flows; \(t\) = base year = one year before IPO year for pre-IPO analysis = one year after IPO year for post-IPO analysis; all variables are deflated by the total assets

Using this model, the accrual quality is estimated by standard deviation of \(\nu_{t,t}\), a proxy for accrual estimation errors. A higher standard deviation of \(\nu_{t,t}\) suggests that a higher proportion of current accruals is not representative of fluctuations in underlying cash flows, thus the higher standard deviation of \(\nu_{t,t}\) indicates lower accrual quality, hence the lower earnings quality.

The above regression is firstly analysed on the sample data to obtain the equation benchmark, which is utilised to measure the abnormal change in working capital/residuals (\(\nu_{t,t}\)) of each of IPO firms. This procedure is repeated twice: firstly, it is conducted for the year before (pre-) IPO data and secondly, for after (post-) the IPO data. Standard deviation of pre-IPO abnormal working capital is compared to standard deviation of post-IPO abnormal working capital using test of equality of variances (F-test). A higher standard deviation of abnormal working capital suggests lower accrual quality. Thus, we expect the sample standard deviation of post-IPO \(\nu_{t,t}\) is higher than their standard deviation pre-IPO \(\nu_{t,t}\).

### 3.4 Earnings persistence and predictability

Earnings persistence is selected as one of the earnings quality attributes to be studied for several reasons. Francis et al. (2004) found that persistence is the second most significant attribute from investors’ perspective of information risks among the accounting-based earnings quality properties. Dichev et al. (2013) further concluded that earnings persistence places first on CFOs’ responses on desirable earnings properties. Likewise, Ewert and Wagenhover (2010) asserted that persistence is among one of the earnings quality properties that provides the best measure for earnings’ capability in diminishing market doubt about firms’ value. More persistent earnings indicated higher earnings quality since they are more sustainable.

Meanwhile, earnings predictability is one of the components of relevance, which is the primary qualitative characteristics of financial reporting based on the conceptual framework (Francis et al., 2004). Lipe (1990) further confirmed that value relevance of
earnings depends on their predictability. Based on the above, earnings predictability is selected as one of the earnings quality properties to be investigated. The more predictable the earnings show their higher quality.

Following Francis et al. (2004), the following autoregressive model [equation (2)] is used to estimate earnings persistence and predictability.

\[ n_{i,t+1} = \beta_0 + \beta_1 n_{i,t} + \delta_{i,t} \]  

(2)

where, \( n_{i,t+1} \) = net income before extraordinary items of firm \( I \) deflated by total assets, for period \((t + 1)\); \( n_{i,t} \) = net income before extraordinary items of firm \( I \) deflated by total assets, for period \((t)\); \( t = \) base year = one year before IPO year for pre-IPO analysis = one year after IPO year for post-IPO analysis

Earnings persistence is measured by coefficient \( \beta_1 \); the regression is analysed twice: one year before and after the IPO. The bigger the coefficient \( \beta_1 \), implies that more core earnings are brought forward to the next period, hence, less transitory earnings. According to Gaio and Raposo (2011), earnings persistence is related to the level of (core) earnings and variability of innovation series (transitory earnings). Consistent with other studies, this research defines high earnings quality as earnings with high persistence. Therefore, we expect the post-IPO \( \beta_1 \) to be higher than pre-IPO \( \beta_1 \).

Furthermore, earnings predictability is estimated from the standard deviation of the residual \( \delta_{i,t} \) of equation (2). The predictability of earnings is only related to the variability of innovation series (Gaio and Raposo, 2011). The higher the standard deviation of the residual \( \delta_{i,t} \), the lower the predictability of earnings is. The pre-IPO standard deviation of residuals is compared to post-IPO standard deviation of residuals using the test of equality of variances (F-test). From a predictability viewpoint, we define high earnings quality as earnings with high predictability. Therefore, we expect the post-IPO standard deviation (post-IPO \( \delta_{i,t} \)) to be lower than the pre-IPO standard deviation (pre-IPO \( \delta_{i,t} \)).

4 Findings and discussions

4.1 Descriptive statistics of sample

Table 2 describes the properties of samples used in our analysis. The table presents the variables statistics in two periods: one year before IPO as the pre-IPO period, and one year after IPO as the post-IPO period.

The mean of changes in working capital (\( \Delta WC \)) is higher and more varies in the pre-IPO period than in the post-IPO period. The similar patterns are also shown in the serials cash flows figures (with exception in the next year cash flow \( CFO_{t+1} \)). This indicates that the sample’s working capital and cash flows are more stable in the post-IPO period.

Another note is that the samples’ net income before extraordinary items at \( t + 1 \) (\( n_{i,t+1} \)) on the post-IPO period (it means net income two years after IPO deflated by total assets at the same time), has the lower mean and median, but greater standard deviation during the observed period, which indicates that on average, the sample firms experienced lower profitability just after IPOs. This confirms Adriansyah and Messinis (2016) that find the major intention of Indonesian firms in using IPO proceeds is for fixed asset investment, which takes a longer time to generate profits.
Table 2: Descriptive statistics

<table>
<thead>
<tr>
<th>Variable</th>
<th>N</th>
<th>Mean</th>
<th>Median</th>
<th>Max</th>
<th>Min</th>
<th>Std dev</th>
<th>Mean</th>
<th>Median</th>
<th>Max</th>
<th>Min</th>
<th>Std dev</th>
</tr>
</thead>
<tbody>
<tr>
<td>ΔWC</td>
<td>103</td>
<td>0.0629</td>
<td>0.0249</td>
<td>0.6829</td>
<td>-0.5398</td>
<td>0.2176</td>
<td>0.0392</td>
<td>0.0338</td>
<td>0.5858</td>
<td>-0.5455</td>
<td>0.1702</td>
</tr>
<tr>
<td>CFO_{t-1}</td>
<td>103</td>
<td>0.0454</td>
<td>0.0488</td>
<td>0.5193</td>
<td>-0.4503</td>
<td>0.1478</td>
<td>0.0310</td>
<td>0.0201</td>
<td>0.3305</td>
<td>-0.3775</td>
<td>0.1077</td>
</tr>
<tr>
<td>CFO_{t}</td>
<td>103</td>
<td>0.0599</td>
<td>0.0449</td>
<td>0.6644</td>
<td>-0.5377</td>
<td>0.1654</td>
<td>0.0534</td>
<td>0.0582</td>
<td>0.3261</td>
<td>-0.3349</td>
<td>0.1025</td>
</tr>
<tr>
<td>CFO_{t+1}</td>
<td>103</td>
<td>0.0312</td>
<td>0.0201</td>
<td>0.3305</td>
<td>-0.3775</td>
<td>0.1077</td>
<td>0.0512</td>
<td>0.0500</td>
<td>0.4610</td>
<td>-0.1934</td>
<td>0.0897</td>
</tr>
<tr>
<td>ni_{t}</td>
<td>103</td>
<td>0.0514</td>
<td>0.0455</td>
<td>0.2374</td>
<td>-0.1638</td>
<td>0.0530</td>
<td>0.0318</td>
<td>0.0343</td>
<td>0.2443</td>
<td>-0.6185</td>
<td>0.0907</td>
</tr>
<tr>
<td>ni_{t+1}</td>
<td>103</td>
<td>0.0692</td>
<td>0.0461</td>
<td>0.3353</td>
<td>-0.0866</td>
<td>0.0732</td>
<td>0.0566</td>
<td>0.0499</td>
<td>0.3152</td>
<td>-0.2135</td>
<td>0.0651</td>
</tr>
</tbody>
</table>

Notes: Variables are defined as follows: ΔWC is change in working capital, calculated as, ΔA/R + ΔInventory - ΔA/P - ΔT/P + ΔOther non-cash current assets (net) deflated by total assets at period t. ni_{t} is net income before extraordinary items deflated by total assets at period t; ni_{t+1} is net income before extraordinary items deflated by total assets at period t.
The univariate analysis is shown in Table 3. Panel A shows the correlation coefficients of variables in the pre-IPO period and Panel B shows the correlation coefficients in the post-IPO periods.

**Table 3** Correlation matrix

### Panel A – pre-IPO correlation matrix

<table>
<thead>
<tr>
<th></th>
<th>ΔWC</th>
<th>CFO_{t-1}</th>
<th>CFO_{t}</th>
<th>CFO_{t+1}</th>
<th>ni_{t}</th>
<th>ni_{t+1}</th>
</tr>
</thead>
<tbody>
<tr>
<td>ΔWC</td>
<td>1.0000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CFO_{t-1}</td>
<td>-0.0105</td>
<td>1.0000</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CFO_{t}</td>
<td>-0.3709***</td>
<td>0.5065***</td>
<td>1.0000</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CFO_{t+1}</td>
<td>-0.1365</td>
<td>0.1601</td>
<td>0.3690***</td>
<td>1.0000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ni_{t}</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>1.0000</td>
<td></td>
</tr>
<tr>
<td>ni_{t+1}</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>0.6183***</td>
<td>1.0000</td>
</tr>
</tbody>
</table>

### Panel B – post-IPO correlation matrix

<table>
<thead>
<tr>
<th></th>
<th>ΔWC</th>
<th>CFO_{t-1}</th>
<th>CFO_{t}</th>
<th>CFO_{t+1}</th>
<th>ni_{t}</th>
<th>ni_{t+1}</th>
</tr>
</thead>
<tbody>
<tr>
<td>ΔWC</td>
<td>1.0000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CFO_{t-1}</td>
<td>-0.0330</td>
<td>1.0000</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CFO_{t}</td>
<td>-0.1127</td>
<td>0.4484***</td>
<td>1.0000</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CFO_{t+1}</td>
<td>0.0989</td>
<td>0.4458***</td>
<td>0.4741***</td>
<td>1.0000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ni_{t}</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>1.0000</td>
<td></td>
</tr>
<tr>
<td>ni_{t+1}</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>0.4477***</td>
<td>1.0000</td>
</tr>
</tbody>
</table>

Notes: Bivariate Pearson correlation coefficients and p-value in parentheses. ΔWC is change in working capital, calculated as, ΔA/R + ΔInventory – ΔA/P – ΔT/P + ΔOther non-cash current assets (net) deflated by average total assets, ni_{t+1} = net income before extraordinary items of firm i deflated by total assets, for period (t + 1); CFO_{t-1}, t, t + 1 is net cash flow from operation on year t-, t, and t + 1 deflated by average total assets; ni_{t} = net income before extraordinary items of firm i deflated by total assets, for period (t); t = base year = one year before IPO year for pre-IPO analysis = one year after IPO year for post-IPO analysis. The correlation coefficients between the variables and ΔWC, CFO variables are not reported here since the estimation models used do not interact the variables.

***Significant at α = 0.01.

Panel A shows that the change in pre-IPO working capital (ΔWC) is correlated with the cash flow of the operation in the same year, but it is not related to the prior and subsequent year cash flow. In the post-IPO period, changes in working capital have no significant relationship with the cash flow. This indicates the period with erratic cash flow, in particular, large cash inflow from the IPO proceeds. For panel A and B, as expected, the cash flow from the prior years (CFO_{t-1} or CFO_{t}) is related with the current year (CFO_{t} or CFO_{t+1}). The same fact is found in the relationship of consecutive earnings (ni_{t} and ni_{t+1}).
4.2 Accrual quality

As explained earlier, we examine three aspects of earnings quality. The first and important aspect is the accrual quality. Using the DD model, the results of the regression analysis is presented in Table 4.

Table 4 The regression analysis result of DD model

<table>
<thead>
<tr>
<th>Variable</th>
<th>Pre-IPO</th>
<th>Post-IPO</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intercept</td>
<td>0.0854***</td>
<td>0.0381**</td>
</tr>
<tr>
<td>CFO_{t-1}</td>
<td>0.3515**</td>
<td>-0.0614</td>
</tr>
<tr>
<td>CFO_{t}</td>
<td>-0.6507***</td>
<td>-0.3222*</td>
</tr>
<tr>
<td>CFO_{t+1}</td>
<td>0.0158</td>
<td>0.3949*</td>
</tr>
<tr>
<td>Adjusted $R^2$</td>
<td>0.1551</td>
<td>0.1476</td>
</tr>
<tr>
<td>F-statistic</td>
<td>7.2399***</td>
<td>2.5093**</td>
</tr>
<tr>
<td>N</td>
<td>103</td>
<td>103</td>
</tr>
</tbody>
</table>

Panel B

<table>
<thead>
<tr>
<th>Statistics</th>
<th>Pre-IPO</th>
<th>Post-IPO</th>
</tr>
</thead>
<tbody>
<tr>
<td>Std. deviation of $v_{i,t}$</td>
<td>0.1971</td>
<td>0.1665</td>
</tr>
<tr>
<td>F-stat</td>
<td>1.9014*</td>
<td>1.9014*</td>
</tr>
</tbody>
</table>

Notes: Table presents the regression analysis of $\Delta WC_t = \varphi_0 + \varphi_1 * CFO_{t-1} + \varphi_2 * CFO_{t} + \varphi_3 * CFO_{t+1} + v_{i,t}$, $\Delta WC$ is change in working capital, calculated as, $\Delta A/R + \Delta Inventory - \Delta A/P - \Delta T/P + \Delta Other non-cash current assets (net)$ deflated by average total assets. $CFO_{t-1}, t, t+1$ is net cash flow from operation on year $t-1$, $t$, and $t+1$, deflated by total assets. Robust white-t statistics, *significant at 10%, **significant at 5%, ***significant at 1%. Significant at $\alpha = 10\%$.

As presented in panel A of Table 4, both pre- and post-IPO regression results for the DD model indicate that the models are valid. Based on the above generated equations, pre- and post-IPO residuals ($v_{i,t}$) for IPO firms, with the corresponding standard deviations, are determined and presented in panel B. Furthermore, in panel B of Table 4, the F-test shows that the variance of pre-IPO residuals appears to be higher than the variance of post-IPO residuals. The differences is marginally significant at $\alpha = 10\%$. It indicated that the accrual estimation errors are significantly lower after the IPO than before the IPO. Thus, this study provides evidence to support our hypothesis that post-IPO earnings quality is higher than pre-IPO earnings quality.

Prior studies in Indonesia, using different models, show that there is no indication of earnings management conducted prior to an IPO (Warganegara and Indriastari, 2009). Their model captures only the intentional errors. As the results in panel B of Table 4 shows significant error terms, it gives an insight of unintentional errors, which is reduced in the post-IPO period. This finding provides the evidence to support the ‘demand hypothesis’ (Givoly et al., 2010)
4.3 Earnings persistence

Next, we present the result of earnings persistence analysis. We analyse the autoregression of net income of firms in the pre- and post-IPO period. The results are shown in panel A of Table 5. To examine whether earnings are more persistent after IPO, we compare the $\beta_1$ of both periods. As shown in Table 5, it is evident that $\beta_{\text{post-IPO}}$ (0.6237) is higher than $\beta_{\text{pre-IPO}}$ (0.4500).

Table 5  The net income autoregressive model

<table>
<thead>
<tr>
<th>Variable</th>
<th>Pre-IPO $n_{i,t+1}$</th>
<th>Post-IPO $n_{i,t+1}$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intercept ($\alpha$)</td>
<td>0.0203***</td>
<td>-0.0035</td>
</tr>
<tr>
<td>$n_t$</td>
<td>0.4500***</td>
<td>0.6237***</td>
</tr>
<tr>
<td>Adjusted $R^2$</td>
<td>0.3761</td>
<td>0.1925</td>
</tr>
<tr>
<td>F-statistic</td>
<td>62.4938***</td>
<td>25.3227***</td>
</tr>
<tr>
<td>N</td>
<td>103</td>
<td></td>
</tr>
</tbody>
</table>

Panel B

<table>
<thead>
<tr>
<th>Statistics</th>
<th>Pre-IPO</th>
<th>Post-IPO</th>
</tr>
</thead>
<tbody>
<tr>
<td>Std. deviation of $\delta_{t}$</td>
<td>0.0419</td>
<td>0.0811</td>
</tr>
<tr>
<td>F-stat</td>
<td>3.7517*</td>
<td></td>
</tr>
</tbody>
</table>

Notes: Table presents the regression analysis of $n_{i,t+1} = \beta_0 + \beta_1 n_{i,t} + \delta_{i,t}, n_{i,t+1} =$ net income before extraordinary items of firm $i$ deflated by total assets, for period ($t+1$); $n_{i,t} =$ net income before extraordinary items of firm $i$ deflated by total assets, for period ($t$); $t =$ base year = one year before IPO year for pre-IPO analysis = one year after IPO year for post-IPO analysis. Robust white-t statistics, *significant at $\alpha = 10\%$, **significant at $\alpha = 5\%$, ***significant at $\alpha = 1\%$.

Furthermore, the results imply that in the post-IPO period, about 68.16% of the current earnings persist into future earnings; whereas in the pre-IPO period, only 45% of the current earnings persist into future earnings. Conclusively, since $\beta_{\text{post-IPO}} > \beta_{\text{pre-IPO}}$, we provide evidence that earnings of Indonesian firms after the IPO are more persistent than earnings of those firms before the IPO. Thus, it supports our hypothesis that the earnings quality of Indonesian firms increases when their status changes to public firms.

There are two main possible explanations for the increased earnings persistence subsequent to IPO. First, following to the IPO, companies have more capacity and resources to strengthen their core operations; and thus, to sustain a larger portion of income from their core or normal operations. Dichev et al. (2013, p.11) argued that earnings generated from ‘normal (core) operations’ are fundamentally more sustainable; and thus, are more persistent. Accordingly, when the core operation is strengthened, a higher proportion of earnings are originated from the core operations. These earnings are more sustainable (Dichev et al., 2013) and thus, earnings persistence increases after the IPO.
Second, earnings persistence increases after the IPO because – as concluded by the accrual quality test – post-IPO earnings comprise less accrual estimation errors. Dechow and Dichev (2002) denoted that higher accrual estimation errors signify a higher percentage of accrual that is non-representative of firms’ actual cash flows, thus, rendering earnings of less persistence. Since earnings after the IPO have lower accrual estimation errors than earnings before the IPO, post-IPO earnings are more representative of actual cash flows and contain less transitory items; and thus, are more persistent.

4.4 Earnings predictability

The last examination we conduct is earnings predictability. Utilising the autoregressive model result to examine the earnings persistence, we run the F-test to determine the equality of variance of the net income autoregressive model as the method to test our hypothesis. The result is presented in panel B of Table 5.

Based on panel B, the F-test results suggest that variance of pre-IPO residuals is robustly different from the variance of post-IPO residuals. Specifically, the standard deviation of post-IPO residuals (0.0811) is higher than the standard deviation of pre-IPO residuals (0.0419). Accordingly, since \( \sigma(\delta_{i,t})_{\text{post-IPO}}>\sigma(\delta_{i,t})_{\text{pre-IPO}} \); we are forced to reject our hypothesis that earnings predictability of Indonesian firms after the IPO is higher than before the IPO.

The reason for the observed lower earnings predictability is that post-IPO earnings demonstrate higher volatility than pre-IPO earnings – as confirmed by the descriptive statistics. Dichev and Tang (2009) empirically conclude that higher earnings volatility reduces earnings predictability. Dichev and Tang (2009) propose two main plausible reasons for the increased volatility in earnings: first, it is due to real economic reasons; second, it is attributable to an issue in the accounting system. For economic reasons, Dichev and Tang (2009) state that earnings volatility is a result of the inevitable instability of underlying economic circumstances. For the issues in accounting system, Dichev and Tang (2009) specifically state that higher accrual estimation errors leads to more transient items that are unrepresentative of the actual cash flow realisation, thus increasing earnings volatility. However, the accrual quality test concludes that accrual estimation errors of Indonesian firms are significantly lower subsequent to the IPO. Accordingly, in the context of this research, increased earnings volatility for post-IPO is not attributable to accrual estimation errors.

Additionally, Dechow and Schrand (2004) outline four principal factors affecting earnings predictability: firms’ current life-cycle state, accrual estimation quality, accounting standards, and discretionary disclosure. The life-cycle state refers to the current condition of the firms – whether they are growing firms, mature firms, or entering a declining state (Dechow and Schrand, 2004). Firms in the growing state have lower earnings predictability than firms in the mature state. As regards the quality of accrual estimation, the higher the accrual estimation errors are, the lower the earnings predictability is. As mentioned, this option is precluded from being a possible explanation for the observed decrease in earnings predictability, because the accrual quality test has shown that the accrual estimation errors, actually, decrease subsequent to the IPO. For the accounting standards factor, uniform employment of accounting standards and methods
yields higher earnings predictability. This option is also less plausible in the context of this research since Indonesian firms most likely follow the same accounting standards (Indonesian Accounting Standards) both in the pre- and post-IPO periods.

Referring to the above analyses on the possible explanations suggested by Dechow and Schrand (2004) and Dichev and Tang (2009), the most relevant and plausible explanation for the observed decrease in earnings predictability is economic reasons. Particularly, as suggested by Dechow and Schrand (2004), it relates to the firms’ life-cycle state.

In regards to the life-cycle state, IPO firms are typically in the growing state (Jain and Kini, 1999). Being growing firms and facilitated by the enhanced capacity and resources that they obtain through the IPOs, IPO firms are exposed to more varying investment and expansion opportunities (Teoh et al., 1998). This makes their earnings more volatile after the IPO; and thus, earnings after the IPO become less predictable (Dechow and Schrand, 2004; Dichev and Tang, 2009). Another explanation is explained in Adriansyah and Messinis (2016), the major intention of Indonesian firms to go public is to use the net proceeds from their IPOs to fund the fixed assets investment. Such investments would not generate short-term profits. Therefore, the earnings are more unpredictable in the short-run (one year after IPO).

5 Concluding remarks

This research concludes that the earnings quality of Indonesian IPO firm’s increases relatively when they become public firms compared to when they were private firms. Using three accounting-based attributes of earnings quality, this study provides evidence that post-IPO accrual quality after the IPO is higher than pre-IPO. From the viewpoint of earnings persistence, post-IPO earnings are found to be more persistent after the pre-IPO earnings. However, subsequent to the IPO, earnings become less predictable due to the nature of IPO firms and the likely usage of IPO net proceeds.

Overall, after becoming public firms, the earnings of Indonesian firms are more representative of the actual state of the firm, because they contain fewer unintentional accrual measurement errors due to the demands of various stakeholders, such as regulators, financial analysts, and investors. The earnings quality of newly public firms is also higher because they are more persistent. Thus, this is beneficial for firm valuation purposes. Nevertheless, the earnings become less predictable after the IPO (after they become public firms), which will enhance the intricacy of valuing the firms, especially from the perspective of shareholders and financial analysts. However, it is worth noting that the decrease in earnings predictability is due to actual economic reasons, instead of accounting schemes, errors, or earnings management; thus, the earnings capture real economic performance of the firms in the short-run (one year after the IPO).

This research is limited in several aspects. First, the earnings quality analysis is limited to only one year before and one year after the IPO. This is because, in Indonesia, private firms’ financial statements are not publicly available; thus, pre-IPO financial information could only be obtained from those provided in IPO prospectuses, which is only up to three fiscal years before the IPO year. Bearing in mind the research model employed, this could only facilitate a one-year-before and one-year-after analysis. Second, the scope of this research limits the observed attributes of earnings quality to include only earnings persistence, earnings predictability, and accrual quality.
Earnings quality of Indonesian firms surrounding initial public offerings

Nonetheless, previous literature (Dichev et al., 2013; Ewert and Wagenhover, 2010; Francis et al., 2004) have shown that the three selected earnings quality attributes possess the highest significance, specifically to shareholders.

References


**Notes**

1 IDX Fact Book 2015, p.11.

2 Source: Singapore Stock Exchange (SGX), Bursa Malaysia, Stock Exchange of Thailand (SET).

3 BAPEPAM-LK (now, OJK) is government agency, under Ministry of Finance, that oversees and monitors capital market and financial institution operating in Indonesia.

4 A separate analysis is conducted by adding a dummy variable in the autoregressive model [equation (2)], which the dummy will take a value of 1 for post-IPO observations, and 0 for pre-IPO observations. The result shows that the coefficient of dummy variable is negative this is consistent with the descriptive statistics analysis that shows lower post-IPO earnings (deflated by total assets).