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Article

The inefficacy of accrual accounting in public sector performance management: Evidence from an emerging market

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The inefficacy of accrual accounting in public sector performance management: Evidence from an emerging market

Heru Fahlevi^{1*}, Irsyadillah Irsyadillah², Imam Arafat³ and Muhammad Ichsan Adnan^{1,4}

Abstract: This study aims to investigate the impact of accrual accounting adoption on Indonesian local governments. In particular, this study examines the differences of financial performance before and after the accrual adoption and the usefulness of accrual accounting information for public managers. Using mixed-method, data was collected from secondary sources and interviews. T Test for paired samples and Wilcoxon Signed Rank were employed to examine the statistical difference of Indonesian local government financial ratios before and after the adoption. Interviews were undertaken with local government managers and their consultants. To provide comprehensive understanding and discussion, this study adopts a theoretical pluralism using old institutional economics (OIE) and new institutional sociology (NIS) conjointly. The quantitative part demonstrated mixed results and lack of benefit of accrual accounting adoption in the Indonesian local governments. In the same vein, the qualitative part unveiled the failure of institutionalisation of new public management (NPM) values and principles that explained a marginal role of accrual accounting information in public managers decision-making process. The



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PUBLIC INTEREST STATEMENT

Accrual accounting has been adopted by governments across the globe. Similar to other emerging countries, the adoption of accrual accounting in Indonesian government is not only to gain its expected benefits, for instance, to provide more comprehensive accounting information for decision-making, but also to fulfil the requirement of international donor agencies. As accrual accounting is originally designed for private business, its adoption in government institutions is problematic. This study revealed that financial performance of Indonesian local governments before accrual accounting adoption in 2015 is statistically different from their financial performance after the adoption of accrual accounting. However, the financial performances are mostly worsened after the migration to accrual accounting. The interviews also provide evidence how accrual accounting information is not used and abandoned by managers of the local governments.

paper contributes to the continuing debate of the benefits of accrual accounting adoption for local governments.

Subjects: Financial Accounting; Government & Non-Profit Accounting; Management Accounting

Keywords: Accrual accounting; financial performance; institutional theory; local government; NPM; Indonesia

1. Introduction

The adoption of accrual accounting in the public sector has gained momentum with many governments around the world adopting it over the past four decades (Tickell, 2010). Under the flag of NPM, accrual accounting is imported from the private sector with the aims to increase accountability, transparency and decision-making process in public sector in general and government institutions in particular (Arnaboldi and Lapsley, 2009; Christiaens et al., 2010). This shift towards accrual accounting is based on the belief that it can provide more comprehensive and relevant financial information than the old system of cash accounting offers (Carlin, 2005). The migration to accrual accounting also reflects the intention of governments to transform and modernize public services in order to enhance the efficiency, effectiveness and accountability. This is often achieved by borrowing management practices and techniques from the private sector (Alijarde & Julve, 2014; Cohen & Karatzimas, 2017). Thus, accrual accounting is considered a critical tool in the implementation of NPM within the public sector (Kobayashi et al., 2016).

Although the adoption of accrual accounting in the public sector started more than 40 years ago, there is still no consensus in the literature about its benefit and usefulness for public sector organizations (Arnaboldi and Lapsley, 2009; Carlin, 2005; Kober et al., 2010). Besides, research on the benefits and impact of accrual accounting on performance management of public institutions is still limited, particularly in the context of emerging economies, such as Indonesia (Kobayashi et al., 2016). Previous studies undertaken in the contexts of European and Organization for Economic Co-operation and Development (OECD) countries uncovered divergent benefits and some unintended consequences. For example, Deaconu et al. (2011) found that accrual accounting procedures have benefited two government institutions in Romania. Using a larger sample, Dorn et al. (2019) unveiled unchanged (capital) expenditures, public debts and government efficiency after the migration toward accrual accounting in the German federal state of Bavaria. Their study also documented rising administrative operational costs associated with the accrual accounting system.

While empirical evidence on the impact of accrual accounting on governmental institutions in developed countries is mixed, there is a shortage of research on emerging economies (Adhikari & Jayasinghe, 2019). This study is an endeavor to address the gap in the extant literature. In particular, this study aims to investigate whether the performance of Indonesian local governments changed after the migration to accrual accounting. More importantly, it sheds light on how public managers use accrual accounting information and its benefits. The study is especially interesting given the fact that accrual accounting was adopted in Indonesia to fulfil the demand of international organizations, rather than internally initiated (McLeod & Harun, 2014; Prabowo, 2015). Moreover, Indonesia still adopts a dual accounting system where cash accounting is used side by side with accrual accounting (Kobayashi et al., 2016). The adoption was also made mandatory at all levels of Indonesian central and local governments. Such feature and nature of government accounting system and reform route provide a unique setting and insight amid the debate of the usefulness and benefit of accrual accounting for government institutions.

The paper contributes to the continuing debate of the effectiveness of accrual accounting adoption for public sector, especially in emerging countries. In particular, employing quantitative method, this study provides empirical evidence on the differences between financial performance

of Indonesian local government before and after the adoption of accrual accounting. Additionally, using qualitative approach, the study sheds lights on why accrual accounting is abandoned and why there is a lack of enthusiasm among managers of public institutions to implement it.

The remainder of the paper is structured as follows. Section 2 presents an overview of accrual accounting adoption in Indonesia and a discussion of prior research on the impact of accrual accounting adoption on government financial performance and the tested hypotheses formulation. Section 3 presents the research design employed in this study. Section 4 provides the results of data analysis and its interpretation. Lastly, section 5 presents the main conclusions of the study and recommendations for further research.

2. Literature review and theoretical framework

2.1. Benefits and impacts of accrual accounting adoption in governments

The proponents of accrual accounting argue that this businesslike accounting system can improve government managers' or administrators' understanding of the financial condition of the organizations and thus, enhance the quality of the decision-making process (Christiaens & Rommel, 2008). Unlike cash accounting, accrual accounting recognizes revenues and expenses from the operation as it is earned and expensed regardless of when they are paid or collected (Deaconu et al., 2011). Furthermore, it provides information on current and capital expenditure by taking into consideration the cost of capital and its consumption over the years (Hyndman & Connolly, 2011). Thus, a more long-term perspective and forecasting future cash flow can be made. Besides, full costing approach can be adopted to calculate the unit cost of public goods procurement as accrual accounting matches all expenses that are related to generated revenues in every accounting period (Dollery et al., 2020).

Accrual accounting is claimed to be advantageous for the adopters. A recent study by Cuadrado-Ballesteros and Bisogno (2020) tested the impact of accrual accounting adoption and the implementation of International Public Sector Accounting Standards (IPSASs) on the governance quality level of 33 OECD countries. They found a positive influence of the adoption and accounting reform toward accountability level, government effectiveness, quality of regulation, law and corruption control. However, several studies also documented challenges in adopting the accrual accounting system in public institutions. For instance, Rajin et al. (2019) surveyed professional accountants and managers of public sector entities in Serbia uncovered that more than half of respondents need to take extra training and education to understand accrual accounting. They suggest that managers of public sector organizations may act differently toward accrual accounting information. The reason is that their performance is not measured with the level of compliance with financial reports; instead on other indicators that are independent of accounting concepts.

Moreover, Cohen and Karatzimas (2017) evaluated the level of decision-usefulness and financial report quality after the adoption of modified-cash basis in Greece. They found that the migration towards a more accrual system did not lead to a better quality of accounting information as expected. Besides, the information produced from the newly adopted accounting system was insufficient and needed modification before making it available to stakeholders. More recently, Cohen et al. (2019) found a gap between the accounting and performance measurement information needed by internal and external users for the decision-making process and what is required by the law and thus available. They argue that this gap or mismatches will continue to exist unless the adoption of accrual accounting "informing the systems related to administration, accountability, everyday decisions and assessment from oversight authorities" (Cohen et al., 2019, p. 721).

Nonetheless, few studies have reported benefits of accrual accounting for government institutions. For instance, Lampe et al. (2015) investigated the cost efficiency of German local governments within the state of North Rhine Westphalia after the adoption of accrual accounting. They found that accrual accounting led to improved cost efficiency. Lampe et al. (2015) claimed that their study is the first quantitative-based study that evaluates the impact of accrual accounting

adoption for cost efficiency of local governments. Similarly, Christofzik (2019) examined the impact of accrual accounting on fiscal policy decisions of German municipalities after the migration toward accrual accounting. The study reported a limited impact of accrual accounting system on overall financial balance of the German municipalities.

In the light of above mixed evidence, it is clear that more studies are required to evaluate the efficacy of accrual accounting system for local governments. Besides, the route of adoption and government structure among the adopters are divergent. In European countries, accrual accounting adoption is mostly stimulated and promoted by internal stakeholders for the sake of efficiency improvement and harmonization of government accounting practices (see, for instance, Cohen et al., 2019; Lampe et al., 2015). Meanwhile, accrual accounting adoption in Asian countries is demanded by international donor organization (see, for example, Harun et al., 2020, for Indonesian case; Nakmahachalasint & Narktabtee, 2018 for Thailand case). Besides, in some European countries, for instance, in Germany, accrual accounting adoption is optional for state governments, while in other countries, for instance, Bangladesh and Indonesia, accrual accounting adoption is mandatory for all local governments and ministries.

Moreover, the evaluation of financial performance of local governments using financial ratios are unique and challenging as it requires judgment regarding the complex interaction between social, organizational and financial aspects (Cohen et al., 2012). For example, an improved profitability of government can be interpreted as an outcome of unjustified high taxes policy rather than efficiency improvement; rising local government debts may not reflect debt default indication; financially distress local governments will never declare bankruptcy (Cohen et al., 2012).

2.2. The Indonesian context of accrual accounting adoption

One of the most significant changes in the Indonesian government system happened at the end of 1990s. The reforms were triggered by the alleged dictatorship and corruption of the ruling elites. The reforms called for significant change and rearrangement of Indonesian politics, public administration, government and democracy. The aim was to create a transparent, accountable, efficient, effective and responsive government (Suparman et al., 2015). The reforms also restructured the political system and public administration from a centralized to decentralized government in which local governments gained more power and rights to make decisions as well as the obligation to provide public services for citizens (Law 23/2014). To facilitate the decentralization process, the central government increased the amount of transferred funds to each local government (provincial and district/city governments).

As a part of the reform, accrual accounting was adopted to supplement cash-based accounting. However, researchers argued that the adoption of accrual accounting in Indonesia was imposed by the international donors that were involved in the Indonesian recovering process from the Asian financial crisis in 1998 (Prabowo et al., 2019; Sylvia, Sukoharsono et al., 2018). The Law of State Finances No. 17 (2003) and the Law of State Treasury No. 1 (2004) require both central and local government to adopt accrual accounting in their accounting system (Prabowo et al., 2017). In particular, the legislations stipulate that the government financial reports should consist of a Budget Realization Report, Statement of Financial Position, Operational Report, Statement of Changes in Equity, Statement of Cash Flows and Notes to the Financial Statements.

The adoption of accrual accounting in Indonesia was initiated in early 2000 but accrual accounting was fully implemented in local government in 2015. The aim was to improve the accountability, efficiency, management practices, government report access and to combat corruption at all levels of the Indonesian governments (Harun et al., 2020; Indriani et al., 2018; Prabowo, 2015). The delay of accrual accounting adoption can be linked with the political situation and readiness of local government (Sylvia, Sukoharsono et al., 2018). Table 1 shows the timeline of accrual accounting adoption in Indonesia.

Similar to other countries, the Indonesian government also expects an enhancement in accountability, transparency and efficiency of public administrations after the accrual accounting adoption (Harun & Kamase, 2012). However, studies in Indonesia reported contradictory findings. For example, Vertiarani and Halim (2019) found that the application of full accrual accounting led to audit delay and financial statement publication among Indonesian local governments. They argue that the delay is caused by the requirement to publish additional financial reports, namely Statement of Financial Position and Statement Cash Flows. Moreover, Gamayuni (2019) studied the difference in financial reporting quality (proxied by auditor opinion) and financial performance (proxied by effectiveness ratio and efficiency ratio) before and after the adoption of full accrual accounting in Indonesian local governments (2014 and 2015 data comparison). This study unveiled a significant statistical difference between financial reporting quality before and after the implementation of accrual accounting. However, the difference in financial performance was not confirmed. The reason could be that this study was undertaken in the first year of accrual accounting adoption (2015).

2.3. Theoretical framework and hypotheses development

As government or public sector is very complex, both contextually and institutionally, no single theory can help understand accrual accounting adoption and how organisations react to it (Bergmann et al., 2019). Hence, this study adopts a theoretical pluralism to obtain "... better sense of the complexity of public sector activity" and accrual accounting impact (Bergmann et al., 2019: 3). In particular, we used old institutional economics (OIE) and new institutional sociology (NIS) conjointly. The former provides insight into changes in rules and daily operation of organisations as a response to the adoption of accrual accounting. The latter uncovers motivation and rationality behind the transition to accrual accounting in the local governments. In other words, OIE facilitates our understanding on how change takes place within organisations, while NIS provides explanation on external pressures that motivate organisations adopt accrual accounting (Tallaki & Bracci, 2019).

The advocates of OIE argue that a successful change in organization have to take into account not only technical or economic issue, but also social and cultural issues (Fahlevi, 2016; Fahlevi et al., 2022; ter Bogt, 2008; Van Helden et al., 2021). In this case, OIE captures responses of both organisations and individuals within the organisations. As accrual accounting system aims to introduce NPM principles, both organisations and individuals in local governments are required to shift their paradigm in managing public resources, from administrative to more business principles. Tallaki and Bracci (2019) argue that management change in organization can be blocked by institutional and cultural characteristics of the organization. The reason is that the organization member "... live in a socially constructed world that is filled with taken-for-granted meanings and rules" (Tallaki & Bracci, 2019, p. 129). Therefore, the recent adopted accounting system may leave behind and turn out to be inefficient if the business or motivation to increase efficiency is lacking or not institutionalised. In other words, accrual accounting will be used and useful in local governments only if the NPM principles are adapted by managers and leaders that indicated by the change of performance management and evaluation.

Furthermore, NIS facilitates understanding of why organisations adopt changes and link them with legitimacy in order to survive (Savitri & Fanani, 2017). In this context, accrual accounting adoption can be associated with the effort of organisation to meet internal expectation and gain legitimacy from stakeholders rather than performance improvement. Accrual accounting adoption can be linked to external pressures from upper government that controls and funds the local government (coercive isomorphism), because of prescribed by professional body (normative isomorphism) and to be similar with other local government (mimetic isomorphism) in the situation of high environmental uncertainty (Rajib et al., 2019). In every situation, accrual accounting is most likely will be decoupled and ignored by the organization members.

In the context of Indonesia, financial performance of local governments may improve after the migration toward accrual accounting (Harun & Kamase, 2012). To assess its benefits in this study we

used financial ratios and some other financial indicators as supplementary. The ratios have widely used to evaluate the performance of local government, for instances, financial autonomy, liquidity, operating performance, collection efficiency, and solvency (see, for example, Turley et al., 2015).

Financial autonomy measures the level of autonomy of the local government in terms of financial sources. A high financial autonomy reflects a high independency of local governments from the central government which can be achieved through empowering and improving self-generated income. In other words, financial autonomy also reflects the ability of local government to maximizes their local own source revenue. In this context, accrual accounting adoption provides more complex and comprehensive financial information. For instance, public managers can predict better local revenues after accrual accounting adoption as they are informed about total assets and receivables from public good and service provisions. Besides, the decentralization in Indonesian government primarily aims to enhance financial autonomy of local governments and during the cash basis period this target is far from expectation.

Apart from the financial autonomy ratio, we also used other financial ratios and indicators to allow a more comprehensive assessment. Besides, as we compare two different accounting regimes, using a single financial ratio would be unjustified because the accounting information produced by both accounting systems are not similar. For instance, Return on Asset (ROA) cannot be calculated using cash accounting based financial statements because cash accounting system ignores depreciation.

Moreover, it was argued that accrual accounting can also be linked to improved visibility and efficiency of resource consumption by providing information of balance sheet and profit and loss statement (Lampe et al., 2015). Accrual accounting provides information on revenues and expenses that enable public managers assess and evaluate the efficiency of local government units/departments and public goods provision. Accrual accounting is also expected to shift public managers' orientation from output-oriented view to results-oriented view and from result management to resource management (Lampe et al., 2015). Thus, it is expected that efficiency of local governments in Indonesia increases after the accrual accounting migration as both motivation and tools to improve efficiency are finally in place.

Thus, this study proposed the following hypotheses:

- Ha1: There is a significant difference between financial autonomy ratio (RFAUT) of Indonesian local governments before and after the migration to accrual accounting.
- Ha2: There is a significant difference between efficiency ratio (REFF) of Indonesian local governments before and after the migration to accrual accounting.
- Ha3: There is a significant difference between liquidity ratio (LR) of Indonesian local governments before and after the migration to accrual accounting.
- Ha4: There is a significant difference between local own source revenue ratio (LOSRR) of Indonesian local governments before and after the migration to accrual accounting.
- Ha5: There is a significant difference between budgeted local own source revenues (BLOSRR) of Indonesian local governments before and after the migration to accrual accounting.
- Ha6: There is a significant difference between actual local own source revenues (ALOSRR) of Indonesian local governments before and after the migration to accrual accounting.

Table 1. The timeline of accounting reform in Indonesian government

No	Year	Key events	Key changes/features
1	Before 1997	President Suharto's regime.	Indonesia adopted a centralized government system. Planning and budgeting performed by the central government. Cash basis accounting and single-entry system were adopted. Local governments were not required to prepare financial reports. The only accountability report used as a medium of communication was a budget realization report from the central government to parliament.
2	1997–2008	Asian economic crisis affected Indonesia	The economic turmoil affected many sectors in Indonesia. For example, social and political chaos that led to call for President Suharto resignation.
3	1998–1999	The fall of President Suharto	President Suharto resigned and replaced by vice president, B.J. Habibie. There was a strong call for total administrative, politics and government reforms.
4	1999–2001	Indonesia under recovery process. Supra national institutions for example, IMF and the World Bank provided grants and assistance for public sector reforms.	International donors provided economic stimulus and helped Indonesian government to recover and regain public trust. The donors prescribed some changes that needed to be undertaken including accrual accounting.
5	2003–2004	Public sector accounting reform taken place and the obligation of accrual accounting adoption	The government initiated public sector accounting reforms by enacting three laws, namely (1) Law No. 17/2003 on State Finance, (2) Law No. 1/2004 on State Treasury, and Law No. 15/2004 on Audit on Management and Accountability of State Finance. The central government also set up an accounting standard setting body for government institutions.

(Continued)

Table 1. (Continued)

No	Year	Key events	Key changes/features
6	2005	Government regulation No. 24 about government accounting standards (GAS) was issued.	Government Accounting Standard (GAS) was set up. Since 2005 the Central Government Financial Statement was presented based on the Government Accounting Standard (GAS). This regulation encourages the migration from cash to accrual accounting system.
7	2010	Enactment of concept and the framework (Government regulation No. 71/2010)	The government regulation No. 71 (2010) on GAS provides both concept and the framework for Indonesian government accounting system. The scope of the GAS is both accrual and cash based toward accrual accounting system.
8	2011 – 2012	Transition phase of migration to accrual accounting.	The central government prepared required technical policies and manual for the adoption of accrual accounting. To ease the adoption and preparation of accrual-based reports, the government also provided supporting infrastructure such as software and accounting staff capacity building through training and workshops.
9	2013–2014	Pilot project and further improvements	Several ministries and state-owned enterprises took part in the accrual accounting pilot projects. Based on the pilot projects, the governments reviewed, evaluated and improved the accounting standards and regulations.
10	2015	Adoption of full accrual accounting	All local governments and the central government prepared financial reports using accrual accounting for the first time. At the same time, cash basis is still used to recognize cash revenue, expenditure and financing schemes.

Source: Harun et al., 2020; Suparman et al., 2015; Mir & Sutiyono, 2013; Ritonga, 2018; Pamungkas, 2018.

3. Research method

This study adopted a mixed-method approach to analyze the financial performance of Indonesian local governments in pre- and post-accrual accounting adoption and to explore how the managers of the local government use the accounting information for performance improvement. First, the quantitative part involved data collection from local government budget, budget realization report and statement of financial position from 2011 to 2018 obtained from the Ministry of Finance website. This study used average financial ratios before (2011 to 2014) and after the accrual adoption (2015 to 2018). The data were produced by Indonesian local government before and after the accrual adoption. Financial ratios derive from accrual reporting cannot be used as these data are not available prior to the accrual accounting adoption.

We used four financial ratios, namely financial autonomy ratio (RFAUT), efficiency ratio (REFF), liquidity ratio LR, and local own source revenue ratio (LOSRR). In addition, another two financial performance indicators, namely budgeted and actual local own source revenue (BLOSRR and ALOSRR) were used to corroborate the results. The operational variables can be found in [Table 2](#).

The population of this study is local governments (province and districts: regency and city or *kabupaten/ kota*). [Table 3](#) shows the number of local governments and observations.

The normality test was carried using Kolmogorov Smirnov and Shapiro Wilk tests. Both tests indicated that some indicators are normally distributed (for instance, FAUT of provincial governments), while the other financial performances are not normally distributed as the significant value is lower than 0.05. Thus, both T Test for paired samples and Wilcoxon Signed Rank were used to examine the difference between financial performances of the local governments before and after the accrual adoption in Indonesia.

Second, semi-structured interviews with managers, government consultants and academia were conducted to gain insights into how accrual accounting information used in internal management decision-making and managerial tasks. The interviews were conducted in Indonesian language, by phone and recorded. The interviews were conducted from November 2020 to January 2021. [Table 4](#) summarizes the interviewees and the duration of the interviews.

Table 2. Operationalization of variables			
No	Ratio	Formula	Definition
1	Financial autonomy ratio (RFAUT)	$\frac{\text{Actual local own source revenue}}{\text{Total actual revenue}}$	The ability of local government to finance its self
2	Efficiency ratio (REFF)	$\frac{\text{Expenditure realization}}{\text{Revenue realization}}$	Reflects how much money the government spent to earn revenues.
3	Liquidity ratio (LR)	$\frac{\text{Current assets}}{\text{Current liabilities}}$	The ability of governments to pay off its short-term debt obligation without raising external capital
4	Local own source revenue ratio (LOSRR)	$\frac{\text{Actual local own source revenue}}{\text{Budgeted local own source revenue}}$	The ability of governments to achieve own source revenue target/ budget
5	Budgeted local own source revenues (BLOSRR)	-	Estimated and budgeted revenues collected by local government
6	Actual local own source revenues (ALOSRR)	-	Actual gained revenues collected by local government

Table 3. Criteria of local government samples

No	Criteria	Number of governments
1	Total provincial governments	34
	(Deduct: province with incomplete data)	6
	Total provincial governments involved in this study	28
2	Total district governments	495
	(Deduct: districts with incomplete serial data and outliers)	169
	Total district governments involved in this study	326
	Total observations government-years	2,832

Table 4. List of interviewees

No	Position/ role	Affiliation	Duration of interview	Code
1	Head of accounting division	District government (Aceh Barat)	23 minutes	ACC1
2	Head of accounting division	District government (Aceh Jaya)	40 minutes	ACC2
3	Head of department of environment and cleanliness	District government (Aceh Selatan)	45 Minutes	MAN1
4	Academia/local government consultant on accounting system	Government university (Aceh region)	55 Minutes	CON1
5	Academia/local government consultant on accounting system	Government university (Central Java region)	50 Minutes	CON2
6	Head of planning and development division	District government (Aceh Jaya)	30 Minutes	MAN2
7	Head of planning and development division	District government (Aceh Selatan)	35 Minutes	MAN3
8	Planning analyst, Health department	Provincial government (Sumatera Utara)	15 Minutes	MAN4
9	Planning analyst, Development planning agency	District government (Bekasi)	20 Minutes	MAN5
10	Planning analyst, Development planning agency	District government (Depok)	15 Minutes	MAN6

The preliminary interview questions were (1) how accrual accounting was adopted in the local government, (2) what changes brought by the new accounting system, (3) whether and how the new accounting system support decision-making process, (5) How by who is accrual accounting information used, and (6) How accrual accounting information is used to improve financial

performance. The interview results were analyzed to obtain clarification and supporting arguments of the quantitative results.

4. Results and discussion

4.1. The quantitative results

This section presents the results of the study and its discussion. Firstly, statistic descriptive analysis is presented to describe the pattern of the average financial performance of the Indonesian sub nation government pre- (2011 to 2014) and post (2015–2018) accrual accounting. Second, the results of hypothesis tests are interpreted and discussed.

4.1.1. Descriptive statistics

Table 5 exhibits the descriptive statistics of the financial ratios of the 31 Indonesian provincial governments. The results show mixed findings as all financial ratios decreased, while the other financial indicators increased. Financial autonomy ratio (RFAUT), financial efficiency (REFF), local own source revenue ratio (LOSRR), and liquidity ratio (LR) declined slightly after accrual adoption. For instance, the average RFAUT declined from 69 to 63 and REFF fall from 107 to 116. However, the average of budgeted local own source revenues (BLOSR) risen from 1,133,851.73 (in million Indonesian Rupiah) to 2,840,510.18 after accrual accounting migration. Similarly, the average of actual local own source revenues (ALOSR) has grown from 1,356,319.93 (in million Indonesian Rupiah) to 2,862,776.07.

Furthermore, the financial performance of district governments after the implementation of accrual accounting shows similar results with performance of the provincial governments (Table 6). On the one hand, REFF, LR and LOSRR fall slightly, but on the other hand, RFAUT grew significantly from 8.85 to 12.07. Meanwhile, the other financial indicators almost doubled. For instance, the average BLOSR increased from 109,818.48 to 224,576.40

4.1.2. Hypothesis test results

T test of paired samples and Wilcoxon Signed Ranks Test were used to demonstrate statistical differences for all two paired-sample of financial performance of the Indonesian local governments before and after the accrual accounting adoption. Almost all hypothesis alternatives are supported except Ha2 and Ha3 for provincial government because the significance level >0.05. Thus, it can be concluded that REFF and LOSRR of provincial government before accrual adoption

Table 5. Descriptive statistics of provincial government financial performance

No	Financial ratio	N	Minimum value	Maximum value	Mean	Std. Deviation
1	RFAUT_PRE	28	5	69	39.1	17.24
2	RFAUT_POST	28	6	63	36.25	15.23
3	REFF_PRE	28	98	117	103.64	4.18
4	REFF_POST	28	94	116	102.54	3.91
5	LR_PRE	28	45	8,039	1,098.96	1,754.63
6	LR_POST	28	33	3,733	647	845.71
7	LOSRR_PRE	28	94	140	112.96	12.04
8	LOSRR_POST	28	73	129	100.68	9.17
9	BLOSR_PRE	28	128,997	9,029,189	1,133,851.73	2,137,387.05
10	BLOSR_POST	28	320,446	16,535,125	2,840,510.18	3,670,397.30
11	ALOSR_PRE	28	142,416	11,171,514	1,356,319.93	2,517,231.96
12	ALOSR_POST	28	300,500	17,699,948	2,862,776.07	3,796,312.67

Table 6. Descriptive statistics of district (kabupaten/Kota) government financial performance

No	Financial ratio	N	Minimum value	Maximum value	Mean	Std. Deviation
1	RFAUT_PRE	326	1	57	8.85	7.14
2	RFAUT_POST	326	1	63	12.07	9.35
3	REFF_PRE	326	86	132	103.83	3.86
4	REFF_POST	326	89	119	100.38	2.73
5	LR_PRE	326	1	897	82.07	141.07
6	LR_POST	326	1	863	25.72	74.15
7	LOSSR_PRE	326	51	6,673	175.75	426.17
8	LOSSR_POST	326	44	286	114.66	23.56
9	BLOSR_PRE	326	5,629	2,504,431	109,818.48	199,747.17
10	BLOSR_POST	326	6,992	4,071,180	224,576.40	402,453.93
11	ALOSR_PRE	326	5,112	2,566,258	125,788.31	227,291.17
12	ALOSR_POST	326	6,751	4,565,183	245,307.08	429,287.12

are not statistically different from the REFF and LOSSR after the accrual adoption. The results of the T-test for paired samples and Wilcoxon Signed Ranks test can be found in [Table 7](#):

Furthermore, the ranks analysis uncovers worsening financial performances after accrual accounting applied by Indonesian local governments amidst the increase of other financial indicators. [Table 8](#) informs that the number of provincial governments with lower financial ratios after the migration to accrual accounting is higher than the number of provincial governments that experienced improved financial ratios. For instance, there are 22 and 14 (out of 28) provincial governments with smaller RFAUT and REFF, respectively. Among the 28 studied provincial governments, only 7 of them demonstrated higher liquidity ratio, 11 of them gained better REFF, and only 5 provincial governments showed a better FAUT. On the contrary, all provincial governments demonstrated higher BLOSR and ALOSР.

More optimistically, the local governments showed a slightly better financial performance after the migration to accrual accounting. Although more than 80% of the district governments experienced lower REFF after the adoption of accrual accounting, 85% of district government experienced an increasing RFAUT after the migration. Similarly, most of district governments have budgeted higher BLOSR and collected more ALOSР after the accrual accounting migration.

In a nutshell, this study found that the financial performance of local governments in Indonesia during the cash accounting regime is significantly different and better compared to under accrual accounting system. In general, provincial governments and district governments demonstrated lower financial efficiency, liquidity, and capability to gain more local own-source revenues. Only district governments demonstrated a better financial autonomy after the migration to accrual accounting, while the rise of budgeted and actual local own-source revenues cannot be merely link to accrual accounting as both indicators affected also by the economy growth in regions. Thus, this research provides rather weak evidence that financial performance of local government improved after a country adopts accrual accounting.

4.2. Robustness test

Robustness test was performed using median of the financial ratios and other financial indicator as basis of the data. To analyse the data, both paired sample t-test and Wilcoxon Signed Ranks test were performed as 2 of 5 provincial government datasets are normally distributed, while the other are not normally distributed. The data analysis results show similar findings with the main data analysis. In provincial governments, REFF, LR, LOSSR, BLOSR, and ALOSР prior to accrual

Table 7. Results of T-test for paired samples and Wilcoxon signed ranks tests

No	Variable and hypothesis	T-test for paired samples (Asymp. Sig)	Wilcoxon Signed Ranks (Asymp. Sig)	Conclusion
1	Ha1: $RFAUT_PRE_{(Prov)} \neq RFAUT_POST_{(Prov)}$	0.000	N.A	Ha1 is supported
	Ha1: $RFAUT_PRE_{(District)} \neq RFAUT_POST_{(District)}$	N.A	0.000	
2	Ha2: $REFF_PRE_{(Prov)} \neq REFF_POST_{(Prov)}$	N.A	0.359	Ha2 for provincial governments is not supported, but Ha2 for district governments is supported
	Ha2: $REFF_PRE_{(District)} \neq REFF_POST_{(District)}$	N.A	0.000	
3	Ha3: $LOSRR_PRE_{(Prov)} \neq LOSRR_POST_{(Prov)}$	0.082	N.A	Ha3 for provincial governments is not supported, but Ha3 for district governments is supported
	Ha3: $LOSRR_PRE_{(District)} \neq LOSRR_POST_{(District)}$	N.A	0.000	
4	Ha4: $BLOSR_PRE_{(Prov)} \neq BLOSR_POST_{(Prov)}$	N.A	0.000	Ha4 is supported
	Ha4: $BLOSR_PRE_{(District)} \neq BLOSR_POST_{(District)}$	N.A	0.000	
5	Ha5: $ALOSR_PRE_{(Prov)} \neq ALOS_POST_{(Prov)}$	N.A	0.000	Ha5 is supported
	Ha5: $ALOSR_PRE_{(District)} \neq ALOS_POST_{(District)}$	N.A	0.000	
6	Ha6: $LR_PRE_{(Prov)} \neq LR_PRE_{(Prov)}$	N.A	0.025	Ha6 is supported
	Ha6: $LR_PRE_{(District)} \neq LR_PRE_{(District)}$	N.A	0.000	

accounting adoption are statistically different from REFF, LOSSR, BLOSR, and ALOS after accrual accounting adoption. By contrast, there is no significant difference between RFAUT and LR of provincial governments between before and after accrual accounting adoption. The data analysis results of district government show exactly similar results, namely the financial ratios show statistical differences before and after the migration to accrual accounting. Thus, the results of this study are robust.

4.3. The interviews

The interviewees revealed that accrual accounting implementation does provide more and detailed information on assets and liabilities. For instance, accrual accounting facilitates a better budget allocation for each department as information on liabilities that need to be settled are available and updated. Additionally, the cost of preparing financial reports under accrual accounting has not increased significantly as the central government control fully how and what the local governments should report.

“Accrual accounting provides more comprehensive information that eases the budgeting process. For example, we know that we have liabilities, thus within our budget, we can

Table 8. Differences of financial ratios before and after accrual adoption

No	Indicators	Positive ranks (PRE < POST)	Ties (%) (PRE = POST)	Negative ranks (PRE > POST)
1	RFAUT_PRE _(Prov) and RFAUT_POST _(Prov)	5 (18 %)	1 (4 %)	22 (78%)
2	REFF_PRE _(Prov) and REFF_POST _(Prov)	11 (40 %)	3 (10 %)	14 (50 %)
3	LOSRR_PRE _(Prov) and LOSRR_POST _(Prov)	2 (7 %)	0 (0 %)	26 (93 %)
4	LR_PRE _(Prov) and LR_POST _(Prov)	7 (25 %)	0 (0 %)	21 (75 %)
5	BLOSRR_PRE _(Prov) and BLOSRR _POST _(Prov)	28 (100 %)	0 (0 %)	0 (0 %)
6	ALOSRR_PRE _(Prov) and ALOSRR _POST _(Prov)	28 (100 %)	0 (0 %)	0 (0 %)
7	RFAUT_PRE _(District) and RFAUT_POST _(District)	278 (85 %)	27 (8 %)	21 (7 %)
8	REFF_PRE _(District) and REFF_POST _(District)	44 (13 %)	12 (4 %)	270 (83 %)
9	LR_PRE _(District) ≠ LR_POST _(District)	46 (14 %)	12 (4 %)	268 (82 %)
10	LOSRR_PRE _(District) and LOSRR_POST _(District)	109 (33 %)	4 (1 %)	213 (66%)
11	BLOSRR_PRE _(District) and BLOSRR _POST _(District)	300 (92 %)	0 (0 %)	26 (8 %)
12	ALOSRR_PRE _(District) and ALOSRR _POST _(District)	314 (96 %)	0 (0 %)	12 (4 %)

provide provisions for settling liabilities. Asset information is also more detailed. For example, we record depreciation every year' (ACC1)

The accrual techniques may provide more comprehensive accounting information but the information is not used optimally or is less relevant for the public managers and financial performance. This can be associated with the primary performance indicator used in the local governments and the limited authority and capacity of the local government managers.

"The problem is its usefulness. (as a Muslim) We have Quran as our guidance of life, the question is do we refer to it in our daily life? We have accrual-based financial reports, do we use it for annual evaluation? If our leaders think accounting information is irrelevant, then it (accrual accounting) will be irrelevant" (ACC2)

"Actually, local government managers do not obtain any benefit from accrual accounting. They need only information from the budget realization report. They do not really care whether it is accrual or cash basis ... Their language is cash basis, how much the budget, how much the actual spending and how much should be reported" (CON1)

Despite the fact that central governments have initiated NPM reform style, the budget realization (budget report) is still the only and dominant performance indicator in Indonesian local governments. Thus, accrual accounting information is irrelevant because without the information from

accrual-based reporting the managers can still evaluate their budget and spending. In this case, the budget realization report which is prepared using cash basis is the important and the most frequently used accounting information.

“(after accrual accounting adoption) we have more information, but the focus of our head of local government mainly is still the budget realization report. If we fail to reach 100% realization, our performance is considered poor” (ACC2)

“Our focus is (still) budget realization, everywhere we talk about budget realization. Including the provincial government that monitor our performance. They focus on how much is our budget realization. They give different color; red, yellow and green to indicate the level of realization. We have to spend the (budgeted) money, that’s the indicator of good performance. We have to realize all the planned program, whatever it takes” (ACC2)

“A routine meeting with the head of the local government is held once a month. In this meeting, we evaluate our own source revenue target. We discuss how to improve the revenue target and to find new income sources. We need information on revenues. How much the target and how much of it we have collected. We discuss our assets very rarely” (MAN1)

Furthermore, this study also unveils the incapacity and limited power of local government in managing their (potential) financial resources and spending. The accrual accounting information offers an opportunity to manage assets more accurately, calculate and evaluate the cost of public goods and services, and assess potential financial resources and inefficiency. However, such potential and features cannot be exploited by local government due to strict control from the central government. Thus, the potential benefit of accrual accounting in the local governments is unleashed.

“In other countries, local government issues bond and thus the local government have to prepare accrual-based accounting reports. In Indonesia, this is not the case although laws permit. If local governments issue bonds, accrual accounting information may be very beneficial” (CON1).

“[While in] Private companies have a target to achieve. In local government, anyone looking for a safe condition, try to avoid conflict. The political interest is high here. Conflict may occur if the government aiming at their target to increase the local government own source revenues” (ACC2)

Despite accrual accounting has been in place since 2015, most interviewees are still not familiar with its feature, advantages, mechanism and benefit, except interviewees who are working in the accounting and reporting division. On top of that, the local governments have not fully absorbed the implementation of the NPM principles, namely efficiency and effectiveness. Both principles are only applied during the budgeting process as the central government imposes restrictions on budget allocation. Meanwhile, the cost of public service and good provision is rarely evaluated and become the evaluation focus of the local government managers.

“We evaluate the progress report of each department in every four months. We monitor how much money (budget) each department has spent. The budget spending reflects activities and program progress. If the targeted budget spending is lower, we will ask the managers the reasons and their strategies to make sure the budget realize as soon as possible” (MAN 6).

“We never evaluate the efficiency and effectiveness of departments. What we always do is budget realization evaluation, same like usual. But the budgeting process is now more complicated and restricted (as the central government encourage efficiency and effectiveness improvement in budgets of local government). For example, the honorarium payment

for internal facilitator or speaker (who is working in the same local government institution) is not approved anymore as only the honorarium of the external facilitator can be paid.” (MAN 4)

Taken together, the usefulness and benefit of accrual accounting-based reports are still limited. It is merely used as a reporting tool as it is ordered by the central government. Meanwhile, the objectives of local governments remain the same, namely to achieve budget realization (spending), to non-financial indicators and political promises of the heads of local governments.

4.4. Discussions

The results of this study support the arguments that accrual accounting may not be suitable or is less relevant for public sector managers (Cohen & Karatzimas, 2017). Although financial autonomy increases in district governments, this study demonstrated mixed findings and lack of support on the benefit of accrual accounting migration for Indonesian local government performance. Thus, the results of this study are not consistent with study conducted by Lampe et al. (2015) in a German state. They found that accrual accounting adoption in NRW local governments has led to increased cost efficiency. Moreover, the results of our study are consistent with a study conducted by Christofzik (2019). She documented a limited impact of accrual accounting system for financial balance municipalities in Germany.

The interviews revealed some important findings that help to understand the result of the quantitative test (Lamprecht & Guetterman, 2019). The interviewees reported that they barely use financial information from the accrual financial reports. The adopted dual accounting system mirrors a secondary role of accrual accounting and predominant role of cash accounting information in the Indonesian local government. As budget was prepared based on cash accounting, thus, the local governments refer mainly to budgetary information (Alijarde & Julve, 2014) as it reflects legal requirements and political consensus between local government as the executive and parliaments as the legislative.

As a non-federal country, the Indonesian local governments do not enjoy full autonomy and independence from central government. The central government is still controlling local management financial management including financial performance measurement and evaluation. As the central government is still using conventional and budget realization performance measures, motivation to improve efficiency and effectiveness in today accrual accounting system is still lacking. The expected shift of manager orientation from output based to results based is not occurred. The local government's primary objective; primary financial performance remained unchanged is still budget realization.

Thus, the finding of this study confirms that accrual accounting is not (yet) compatible or aligned with local governments' objectives in Indonesia. The success of public sector accounting reform is always indicated by the changing reporting practices but more importantly, penetration of managerial principles, paradigm shift and improved accountability mechanisms (Mbelwa et al., 2019). Although Indonesia has initiated NPM-based reforms and the adoption of accrual accounting has been incremental, the spirit of efficiency and effectiveness of the provision of goods/services are still lacking among Indonesian local governments. The reforms that were initiated in 1998 have not substantially changed the nature and objectives of the local governments.

In the context of Indonesia, the government was coerced to adopt accrual accounting and the initiative did not stem from the central or local government (Mir & Sutiyono, 2013). From the lenses of new institutional sociology, the preparation of Statement of Financial Position, Statements of Cash Flows, Statement of Changes in Equity and notes to financial statements is merely a way to gain legitimacy (McLeod & Harun, 2014; Prabowo et al., 2017), rather than means to gain improved

efficiency. For the local government, the provision of accrual accounting information is purely to meet legal requirement rather than to improve the performance of local governments (coercive isomorphism; Mbelwa et al., 2019). Through the adoption of accrual accounting, the central government also reduces the role of local government in budgeting, reporting and accountability mechanisms as the local government have to use specific template arranged by the central government (Harun et al., 2020). Moreover, its usefulness seems to be very limited among the managers as they still heavily rely on part of financial reports based on cash accounting system that compliments accrual accounting (McLeod & Harun, 2014).

From the old institutional economics perspective, the NPM principles have not been institutionalized in the Indonesian local governments. Although the central government has imposed rules that aim to improve efficiency and effectiveness through expense restrictions and criteria in budgeting, the nature and objectives of local government remain the same. Budget and budgetary principles are still the main concern in the local government. Thus, the accounting system is merely used to “control the execution of the budget approved by the governmental decision makers” (Christiaens & Rommel, 2008, p. 65). Hence, the findings are consistent with the study of Christiaens and Rommel (2008) on Belgian and Flemish governments that argued that accrual accounting is only relevant if “the government engages in businesslike activities” (Christiaens & Rommel, 2008, p. 72). In the case of local governments, the businesslike activities barely exist as their main objective is to ensure administrative activities, particularly the achievement of program and budget. Therefore, the local government managers and staff have “little or no appetite for scrutiny of the annual reports and account” (Arnaboldi and Lapsley, 2009, p. 831).

5. Conclusions

This study found that accrual accounting is partly relevant and lack of benefit for the Indonesian local governments. This study also revealed the absence of NPM spirit and unchanged nature and objectives of the local governments, and thus, the preparation of accrual-based financial accounting is merely ceremonial to satisfy the demand of the donor agencies. Similar to research finding of accrual accounting research in Thailand government conducted by Nakmahachalasint and Narktabtee (2018), budgeting is still the most important financial information for the public managers and it link to their performance measurement scheme.

This study contributes to public sector accounting literature as it provides evidence on the irrelevancy, incompatibility and lack of benefits of accrual accounting for public managers. Research finding also suggests that NPM principles have not been instilled in the daily routines of the local governments rendering accrual accounting information being isolated and ignored. Thus, this study suggests that policymakers, particularly in Indonesia, should change or add financial performance indicators to evaluate the performance of local governments. The existing performance evaluation that heavily relies on budget realisation is not fully aligned with the spirit of NPM. As a result, information produced by accrual accounting is not considered important by the public managers. Thus, performance measurement and evaluation should be shifted from budget realisation toward efficiency, effectiveness and economy.

This study is not free from limitations. Firstly, the benefit of accrual accounting might be not fully reflected by the comparison of the three financial ratios and other financial indicators. More indicators are needed to evaluate the benefit of accrual accounting information. Secondly, interviews were carried out only with several informants from the local governments. To obtain more representative findings, interviews and the quantitative analysis should be carried out on government institutions, for instance, ministry, agencies, and state and local government-owned enterprises. Therefore, further potential research could be aimed in understanding the main users of accrual accounting information, how they use the information, why some information resulted from accrual accounting is not used or ignored. A case study might help to address these research questions.

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