

# “The emerging fintech and financial slack on corporate financial performance”

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# THE EMERGING FINTECH AND FINANCIAL SLACK ON CORPORATE FINANCIAL PERFORMANCE

## Abstract

FinTech innovations are one of strategic decisions to increase the profitability of a company. This study determines the level of profitability of companies before and after the emergence of FinTech products. The authors focused on companies that have launched FinTech products and published their financial reports. The study sample consisted of 17 FinTech products from 16 companies in Indonesia. The limited number of the sample was caused by not all of them having published its financial reports, while we have checked 157 FinTech companies. An event study approach using paired sample T-test is utilized. The period used in this study is four years, covering two years before and two years after the company launched FinTech products. Data were obtained from IDX, FinTech.id, and company web-pages. The results clearly showed that there was a significant influence on return on assets (ROA), but no significant difference in return on equity (ROE). This finding gives more contribution to the FinTech industry about the company's profitability impact of launching FinTech product.

## Keywords

FinTech, profitability, event study, ROA, ROE, Indonesia

## JEL Classification

P27, P47, F65

## INTRODUCTION

The use of the internet as a means for communication since the beginning of 2018 was recorded to have touched the figure of 4 billion or more than 53% of the total population of the world (We Are Social, 2018). The European Banking Federation data even mention that 4 out of 5 people in Europe have used their mobile devices to purchase goods. This phenomenon is a clear picture that the use of technology in financial transactions has become a necessity for the global community.

As innovative financial services solutions, the existence of FinTech-based start-ups is an "enabler" to expand business networks. The development of FinTech in Indonesia is increasingly rapid, and continued with the emergence of the Association of FinTech in Indonesia (AFI) in September 2015. Since its inception, the AFI has managed to gather approximately 30% of all FinTech users in Indonesia.

Unarguably, FinTech has become an important phenomenon within just the last couple of years (Iman, 2018b). The development of FinTech is now able to change lifestyles and transform into new needs, and encourage the development of mobile start-up payments and improve people's living standards (Alimirruchi & Kiswara, 2017).

FinTech is a fast-growing industry in Indonesia, with a growth of 78 percent since 2015. Digital payments in Indonesia reach a total transaction of USD 18 million in 2017. Moreover, the government of Indonesia committed to integrate FinTech and improve payment infrastructure to boost for e-commerce growth in the country ([www.cekindo.com/blog/fintech-indonesia](http://www.cekindo.com/blog/fintech-indonesia)).

As a regulator, Bank Indonesia or the Central Bank has attempted to supervise FinTech development in Indonesia. Bank Indonesia classifies FinTech into four groups, namely (1) crowdfunding and peer-to-peer lending, (2) market aggregator, (3) risk and investment management, and (4) payment, settlement, and clearing. Bank Indonesia also inaugurates the FinTech Office (FTO), which is intended as an assessment, mitigation container risk, and evaluation of business models and FinTech products or services, as well as research initiators related to technology-based financial service activities (Bank Indonesia, 2016).

On the other hand, Otoritas Jasa Keuangan (OJK) or the Financial Services Authority has also established a regulation on layanan pinjam meminjam uang berbasis teknologi (LPMUBTI) or IT-based money lending services (peer-to-peer lending) through the OJK Regulation (POJK) Number 77/POJK.01/2016 (CNBC Indonesia, 2018). With this regulation, the peer-to-peer (P2P) lending sector is expected to grow and become a new alternative funding source for the community.

For companies, FinTech innovation could become a smart solution to increase their profitability. FinTech innovation is evident from many companies in Indonesia that use such innovation to attempt to raise their profitability – 51 companies in the first quarter and 136 in the fourth quarter of 2016. Unfortunately, little is known about the actual company's financial performance before and after the existence of FinTech innovation. The study in this particular area is scanty.

Thus, to bridge this glaring gap, we attempt to look at financial slack for the company's financial performance before and after the introduction of FinTech innovation. The sources for evaluating company performance are assessed from published annual reports. The tool used to analyze the company's annual report is the profitability ratio, particularly return on assets (ROA) and return on equity (ROE). ROA and ROE were chosen in this study, because ROA and ROE often become the benchmarks for assessing company performance.

To that end, the article is structured as follows. First, we will elaborate literature on FinTech and corporate profitability. We then discuss our choice of research methodology within this study. After that, we develop on our data and findings, which will then be followed by analysis and discussion. The last section will conclude the paper and provide several practical implications and suggestions for future studies.

## 1. LITERATURE REVIEW

FinTech, a portmanteau of financial and technology, is growing rapidly. More than USD 12 billion has been invested in the sector (Accenture, 2015). In the US, FinTech transaction has amounted USD 7 trillion, while in China, it has passed USD 4 trillion (PricewaterhouseCoopers, 2016). Previous research shows that FinTech industry, which is only 3 years old, has achieved financial and operational performance on a 3.1 of 4.0 scale (Alimirruchi & Kiswara, 2017). We define FinTech as the implementation and utilization of technol-

ogy to increase banking and financial services. The rise of FinTech inevitably leads to change the role of technology, consumer behavior, the ecosystems, as well as the industry and regulation itself (Puschmann, 2017). Some novel studies on FinTech even predicted that such technological innovations provide the opportunity to disrupt the market and fundamentally change the business landscape (e.g., Gomber et al., 2017; Iman, 2014; Iman, 2018b; Ng & Kwok, 2017, among others).

Puschmann (2017) classifies FinTech as “[...] incremental or disruptive innovations in or in the

context of the financial services industry induced by IT developments resulting in new intra- or inter-organizational business models, products and services, organizations, processes and systems” (p. 74). Meanwhile, Gomber et al. (2017) considered FinTech as initiatives in the financial sector that are challenging established roles, business models and service offerings by introducing technology-based innovations.

Moreover, Ng and Kwok (2017) classified FinTech organization into four different categories: efficient payment process, robo-advisor, peer-to-peer loan and deposit platform, as well as crowdfunding. This article distinguishes itself by focusing on assessing corporate performance toward FinTech product and services. If we are to minimize this gap, it is particularly important to know not only why and how FinTech works in Indonesia, but also how FinTech products and services affect the industry.

To measure profitability ratios, companies usually use two main ratios, namely return on equity or ROE and return on assets or ROA (Gitman & Zutter, 2011). In general, the purpose of profitability ratio is to measure or calculate the profit generated by the company, assessing the accumulation of profit from time to time, assessing the amount of net income after tax with its own capital, measuring the productivity of the company compared to all company funds used, both from its own capital and loan capital (Brealey et al., 2012).

ROA refers to profitability and operational efficiency. ROA is often used to compare the performance of your business compared to competitors and similar industries (Gitman & Zutter, 2011). ROA is calculated by means of net income divided by total assets – where total assets are a combination of debt (liability) and capital (equity). Meanwhile, ROE is a percentage used to measure a company’s ability to generate net income with equity owned (Gitman & Zutter, 2011). ROE (return on equity) can be calculated by the DuPont formula, which is influenced by three factors, namely profitability, operational efficiency, and debt (leverage). ROE is calculated by means of net income divided by equity. Financial slack in these terms represents excess company’s financial resources that came from profit, and as a result, the agents were given more

degree of freedom to allocate it to alternate uses in support of FinTech investments.

Innovation in FinTech products and services will make an interesting case at least for two different reasons. First, FinTech innovations are generally aimed at changing or contributing to incumbent financial systems. Second, technology-based innovations cannot be separated from the banking sectors and financial services industry (Gomber et al., 2017). It will change the regulation and competitiveness landscape (Ng & Kwok, 2017). Third, and most importantly, it will affect the profitability of the company, especially in relation to its competitiveness against incumbent traditional banks (Iman, 2014).

Indonesia is particularly interesting in a sense that only about a third of the adult population has an account in conventional banking institutions (Global Findex, 2014). Interestingly, there are more than 170 millions of mobile phone users, and 80 of them are not yet having access to traditional banking institutions (Euromonitor, 2017). Yet, FinTech has managed to grow rapidly in Indonesia. Thus, this study will be very relevant, since studies on FinTech commonly have been carried out in developed countries, but rarely have been conducted in the context of a developing country such as Indonesia.

Even though FinTech in Indonesia is growing rapidly, with growing mobile phone and Internet penetration, it still has untapped opportunities. In general, FinTech in Indonesia is regulated by a number of different authorities: Bank Indonesia, the Financial Services Authority, and the Ministry of Communication and Information. A number of legal regulations were released by the government in various forms. For example, Bank Indonesia has issued Bank Indonesia Regulation Number 16/8/PBI/2014 Concerning Amendments to Bank Indonesia Regulation Number 11/12/PBI/2009 Concerning Electronic Money (e-money). Lastly, Bank Indonesia Regulation Number 20/6/PBI/2018 Concerning Electronic Money was also issued to regulate this field more comprehensively.

In addition, the Financial Services Authority (OJK) also released the Financial Services Authority Regulation Number 19/POJK.03/2014 Concerning Financial Services Without Offices in the Context of Inclusive Finance. Financial Services Authority

Regulation Number 77/POJK.01/2016 Concerning Information Technology Based Lending and Borrowing Services (LPMUBTI) was also issued, followed by the Financial Services Authority Regulation Number 12/POJK.03/2018 Concerning the Implementation of Digital Banking Services by Commercial Banks and Numbers 13/POJK.02/2018 Concerning Digital Financial Innovation in the Financial Services Sector. The legal umbrella is then a guide for the implementation of FinTech service activities in Indonesia.

The elaboration points above show that specifically FinTech is supervised and regulated by Bank Indonesia and the Financial Services Authority. Bank Indonesia supervises and regulates specifically FinTech in the payment sector, while the Financial Services Authority supervises and regulates specifically FinTech in the field of financing.

## 2. RESEARCH METHODOLOGY

This study uses the event study method (Austin, 1993), which aims to measure the gap in financial performance before and after the introduction of new FinTech products and services. The event study step carried out in this study is as follows (Boehmer et al., 1991). First, we describe the event that occurred in the form of information needed, in this context, the event was the launch of FinTech products and services at a company that previously did not have such innovations. We then determine the sample criteria to be examined, in order to sort the data against companies that have launched such innovations and have been running it for some time. Correspondingly, we measure an appropriate windows event (observation period) according to the event examined. In this study, a company that has run FinTech innovations for two years was chosen and previously also operated without such innovation (not a company that had initially declared itself as a FinTech company). We then eliminate samples that have other events in the observation period, since there are many companies that are not suitable within the aforementioned criteria above. Lastly, we compare the conditions before and after the event.

In particular, this study will see whether there are differences in the performance of corporate

profitability (financial slack performance) before and after they introduce their new FinTech products and services. Data are taken from companies that apply such innovations and have published their financial statements. As for measuring profitability ratios, two ratios are used as variables, namely return on assets (ROA) and return on equity (ROE) (Brealey et al., 2012; Gitman & Zutter, 2011). The data sources are obtained from IDX, FinTech.id and websites from related companies. Of the 157 companies that have FinTech products, only 16 companies can be taken and 17 FinTech products that passed the selection, because there are many companies that do not publish annual reports. Furthermore, the period of FinTech launching is still relatively new (2015–2017), so it cannot be scrutiny analyzed, because their annual reports have not been published. Accordingly, the research samples used in this study are listed in Table 1.

**Table 1.** Companies introducing FinTech products and services

| Company            | Launch | Product name      |
|--------------------|--------|-------------------|
| Bank Mandiri       | 2009   | ETollcard         |
| Bank National Nobu | 2013   | Nobu E-money      |
| PT Bank Permata    | 2013   | BBM E-money       |
| BCA                | 2009   | Flazz             |
| BNI                | 2009   | Tapcash           |
| BRI                | 2010   | Brizzi            |
| Bank Cimb Niaga    | 2013   | Rekening ponsel   |
| PT Indosat         | 2009   | PayPro (Dompetku) |
| Smartfren          | 2014   | Uangku            |
| XL Axiata          | 2011   | XL Tunai          |
| Bank Mega          | 2009   | Megacash          |
| Bank DKI           | 2009   | Jackcard          |
| Telkom             | 2009   | T-Money           |
| HSBC               | 2013   | Wealt Dashboard   |
| Mandiri Sekuritas  | 2011   | MOST              |
| Philips Securities | 2003   | POEMS             |
| Bank Mandiri       | 2014   | E-CASH            |

In Indonesia, FinTech is still growing. While the number is quite few, the rate of growth is exponential. As of April 8, 2019, there were 106 FinTech companies registered by the Financial Services Authority. Thus, we justified that our sample is considerably adequate ([www.ojk.go.id](http://www.ojk.go.id)).

The data obtained are then analyzed by the following steps (Alexander, 2001). First, we calculate the profitability value for each company that



**Table 2.** One-sample Kolmogorov-Smirnov test

| N                                |                | ROA_B                | ROE_B                | ROA_A              | ROE_A                |
|----------------------------------|----------------|----------------------|----------------------|--------------------|----------------------|
|                                  |                | 33                   | 34                   | 34                 | 34                   |
| Normal parameters <sup>a,b</sup> | Mean           | 1.0822               | 19.2329              | 0.7585             | 17.6135              |
|                                  | Std. deviation | 0.85321              | 17.08744             | 1.17457            | 12.21894             |
| Most extreme differences         | Absolute       | 0.119                | 0.119                | 0.148              | 0.121                |
|                                  | Positive       | 0.119                | 0.119                | 0.090              | 0.121                |
|                                  | Negative       | -0.085               | -0.114               | -0.148             | -0.111               |
| Test statistic                   |                | 0.119                | 0.119                | 0.148              | 0.121                |
| Asymp. sig. (2-tailed)           |                | 0.200 <sup>c,d</sup> | 0.200 <sup>c,d</sup> | 0.057 <sup>c</sup> | 0.200 <sup>c,d</sup> |

Note: a. Test distribution is Normal, b. calculated from data, c. Lilliefors' significance correction, d. this is a lower bound of the true significance.

meets the sample criteria using the ROA and ROE ratio (Brealey et al., 2012; Gitman & Zutter, 2011). We then determine the test period consisting of two years before and two years after the appearance of FinTech products. The period is denoted by  $N - 1$  and  $N - 2$  for the period before launching FinTech and  $N + 1$  and  $N + 2$  products for the period after the appearance of FinTech products. Year 0 is calculated based on the moment of the event to be studied so that each sample has a variation in determining Year 0 according to the time of FinTech's release to the public.

After that, we conduct descriptive statistical tests to obtain an average value, maximum-minimum value, and standard deviation. Departing from that test, we perform data normality tests using the Kolmogorov-Smirnov test to determine whether to use parametric or non-parametric tests. In this study, it was found that data were normally distributed, so the next logical step was to conduct parametric testing with a paired-sample *t*-test to test the research hypothesis (Mendenhall et al., 1993).

### 3. RESULTS AND DISCUSSIONS

The results of descriptive statistical calculations show that the average value of return on assets

(ROA) for the period before FinTech is 1.0822 with a standard deviation of 0.85321, while the average value of ROA for the period after FinTech is 0.7585 with a standard deviation of 1.17457. The average value of return on equity (ROE) for the period before FinTech was 19.2329 with a standard deviation of 17.08744, while the average value of ROE for the period of FinTech was 17.6135 with a standard deviation of 12.21894.

As for further testing, we want to see whether there are differences occurred in financial slack performance using the paired sample *t*-test (Mendenhall et al., 1993). The paired sample *t*-test results in a *t*-value of 2.107 with a significance (sig) of 0.043. Because the sig value is  $0.043 < 0.05$ , the inference taken is to accept H1 which states that there is a significant difference in the ROA of the company before and after launching the FinTech product at the 95% confidence level.

While the paired sample *t*-test results on ROE show the *t*-value of 0.570 with significance (sig) of 0.573, because sig is  $0.573 > 0.05$ , then the inference taken is to reject H2, which states that there is a significant difference in the ROE of the company before and after launching the FinTech product at the 95% confidence level. Thus, the ROE ratio before and after the launch of the start-up FinTech innovations was considered no different. This is

**Table 3.** ROA paired samples test

| Paired Item |             | Paired differences |                   |                    |                                                 |         | t     | df | Sig.<br>(2-tailed) |
|-------------|-------------|--------------------|-------------------|--------------------|-------------------------------------------------|---------|-------|----|--------------------|
|             |             | Mean               | Std.<br>deviation | Std. error<br>mean | 95% confidence<br>interval of the<br>difference |         |       |    |                    |
|             |             |                    |                   |                    | Lower                                           | Upper   |       |    |                    |
| Pair 1      | ROA_B-ROA_A | 0.35045            | 0.95547           | 0.16633            | 0.01166                                         | 0.68925 | 2.107 | 32 | 0.043              |

**Table 4.** ROE paired samples test

| Paired Item |             | Paired differences |                   |                    |                                                 |         | T     | df | Sig.<br>(2-tailed) |
|-------------|-------------|--------------------|-------------------|--------------------|-------------------------------------------------|---------|-------|----|--------------------|
|             |             | Mean               | Std.<br>deviation | Std. error<br>mean | 95% confidence<br>interval of the<br>difference |         |       |    |                    |
|             |             |                    |                   |                    | Lower                                           | Upper   |       |    |                    |
| Pair 1      | ROE_B-ROE_A | 1.61941            | 16.57461          | 2.84252            | −4.16374                                        | 7.40257 | 0.570 | 33 | 0.573              |

quite contradictory compared to the extant literature on technological innovation (cf. Iman, 2014). We argue that this is due to the limited number of the sample. However, our study by no means is exhaustive and provides a thorough analysis of the industry. Rather, we attempt to provide a stepping stone that could trigger further studies in this area.

Unlike the results of ROA, however, there are significant differences on ROE test. ROA is not changing after the launch of FinTech products, because ROA reflects the rate of return on total assets. Total assets themselves consist of liabilities and equity (debt and capital), whereas ROE reflects the company's ability to use its capital from the owner's deposit and retained earnings (Brealey

et al., 2012; Gitman & Zutter, 2011). Thus, ROE better reflects the company's ability to generate profits assuming no debt involved. Since overall assets must be greater than equity, so it is natural that the differences are more visible before and after the appearance of FinTech products.

The findings above can be made possible, because the income generated by sample companies is not necessarily all derived from FinTech products, so it needs to be tested how much the contribution of FinTech products in producing corporate profits is, because the profit obtained from testing is based on income other than FinTech products (Gomber et al., 2017; Iman, 2018b; Ng & Kwok, 2017).

## CONCLUSION

The implementation of FinTech products and service innovation impact on the company's profitability. In particular, we contrast the company's profitability before the introduction of such innovation to the period after the product and service launch. In this research, we were intrigued by the ROA and ROE after the company launched its FinTech product and service innovations. Using a sample of 17 companies in Indonesia, we provide our conclusion.

Both return on assets (ROA) and return on equity (ROE) have become the common yardstick to measure the financial performance of a company (cf. Athanasoglou et al., 2008). As expected, the results showed that there was a significant influence on the ROA. However, when we examine the ROE of those companies, surprisingly there is no significant difference whatsoever before and after the period of examination.

This research shows that FinTech can potentially be the best economic solution, because it is a combination of technology and financial service features that change business models and reduce the barrier to entry (cf. Gomber et al., 2017; Iman, 2018b; Ng & Kwok, 2017; Puschmann, 2017). However, we see that FinTech-based innovation does not always drive profitability, especially ROE, for the company.

For this reason, it is important for governments and policymakers to integrate technology into the financial sector and decentralize financial services. In addition, a large gap in the market and customers, as well as the habits of users who do not really understand FinTech, the classic problems of infrastructure, and the complexity and overlapping regulation, certainly needs to be addressed. We believe that it takes two to tango. In order to promote the growth of the sector, it is important to work closely with the government. The FinTech market is highly regulated and the regulators are keen on balancing the de-

sire to encourage innovation, on the one hand, while also protecting the customer and providing better services, on the other hand. Thus, integration is particularly important.

There are very limited studies on FinTech in Indonesia. We believe that this study will contribute not only to the empirical development, but also for business practitioners, as well as policy makers in the sector. As for the future studies, we encourage this kind of testing to be done again using more diverse profitability indicators and ratios. Indeed, testing in different contexts and countries is recommended.

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