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THE ANALYSIS OF RISK EFFECT TOWARDS FINTECH ECOSYSTEM ON P2P LENDING INDUSTRY IN INDONESIA

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Abstract: The purpose of this research for analyzing the affect and correlation risk to the fintech ecosystem on the P2P lending industry in Indonesia with the quantitative approach and using the analysis tools of SEM-Amos. The result is shown that risk has an affect and correlation significantly to the fintech ecosystem, it can prove that the risk changing has affect to fintech ecosystem stability. The key of activity on this industry is loan disbursement so the potential risk will come up is NPL (non-performing loan), which can cause credit risk. Credit risk can be mitigated by doing customer segmentation precisely. Mitigation is done by other risks, namely, operation, market, liquidity, legal, strategic, and pandemic risk-covid 19. Pandemic risk-covid 19 is an additional risk and positively correlates to start-up fintech elements. It is proof that the existence of pandemic-covid 19, the business of this industry is still running well and has no effect on it, causing this industry to use the mobile application and the transactions without meetings and still keep up social distancing. Another anticipation of empowering the fintech ecosystem by doing cooperation, coordination and collaboration between elements each other. This industry needs to add 2 (two) fintech ecosystem elements, they are credit insurance institutions and fintech consumer protection agency for anticipating the industry's need in the future.

Keywords: fintech, fintech P2P lending, risk, pandemic risk-covid-19, fintech ecosystem

Abstrak: *Tujuan penelitian ini adalah untuk menganalisis pengaruh dan korelasi risiko terhadap ekosistem fintech pada Industri fintech P2P lending Indonesia, dengan pendekatan kuantitatif dan menggunakan alat analisis SEM-Amos. Hasil penelitian menunjukkan bahwa risiko memiliki pengaruh dan korelasi signifikan terhadap ekosistem fintech, hal ini memberikan bukti bahwa setiap pergerakan risiko berpengaruh terhadap kestabilan ekosistem fintech. Aktivitas utama industri ini adalah penyaluran pinjaman, sehingga risiko yang potensi terjadi adalah TWP atau tingkat wanprestasi pinjaman, karena mengakibatkan risiko kredit. Mitigasi risiko kredit dapat dilakukan dengan melakukan segmentasi nasabah secara akurat dan cermat. Mitigasi juga dilakukan atas risiko lainnya, antara lain risiko operasional, risiko pasar, risiko likuiditas, risiko hukum, risiko stratejik dan risiko pandemik-covid 19. Risiko pandemik-covid 19 merupakan risiko tambahan dari peneliti dan memiliki korelasi positif terhadap elemen start-up fintech, hal ini membuktikan bahwa adanya pandemik-covid 19, bisnis industri fintech P2P lending tetap berjalan dan tidak tidak terpengaruh, hal ini dikarenakan adanya pemanfaatan aplikasi mobile, dimana transaksi dapat dilakukan tanpa harus bertemu (tatap muka) serta mendukung program social distancing. Antisipasi lain, dapat dilakukan dengan memperkuat kestabilan ekosistem fintech melalui kerjasama, koordinasi dan kolaborasi antar elemen ekosistem fintech, apabila ada pengaruh risiko dari industri ini terjadi. Perlu adanya 2 (dua) elemen tambahan pada ekosistem fintech ini yaitu institusi asuransi kredit dan lembaga perlindungan konsumen untuk mengantisipasi kebutuhan bisnis industri ini di masa mendatang.*

Kata kunci: *fintech, fintech P2P lending, risiko, risiko pandemik-covid 19, ekosistem fintech*

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INTRODUCTION

A business ecosystem (Hayes & Adam, 2021), is an organization network consisting of suppliers, distributors, customers, competitors, government institutions, etc., which involves offering products and services through competition or cooperation. Each element in the ecosystem affects and is affected by the others, creating the relationship of one entity to another which is flexible and has the ability to adapt to survive. Fintech is one of the business sectors that have been developing rapidly in the last 5 (five) years, and one of the segments is fintech P2P lending. There are 164 Fintech P2P lending hosting companies registered and licenced by Indonesia's Financial Authority Service in 2020. The financial authority service also released the Regulation No. 77 in 2016 and Circular Letter No. 18 in 2017 about the lending service based on information and technology as well as the regulatory umbrella in supporting the growth of the business. Fintech ecosystem has become an inevitability which its existence needs to be strengthened by the regulators.

The fintech ecosystem is stable and capable in supporting and pushing the development of fintech P2P lending industry based on the direction expected by the regulators. The stability of the ecosystem depends on the strength of cooperation, coordination and collaboration on each elements of the available fintech ecosystem. The problems occur not only because of internal factors but also external ones, that the stability of fintech ecosystem becomes the strength to anticipate external problems which affect the fintech ecosystem. The real challenge faced by the fintech ecosystem at the moment is related with the risk of fintech P2P lending industry, considering the core business of this industry is the disbursement of funds (credit), in which the risk is caused by the level of non- performing loan (NPL).

The main problem of fintech P2P lending industry in Indonesia at the moment is the increase of NPL (OJK, 2020) which can intensify the risk (Hanafi, 2000), especially in credit risk (Hull, 2015; Saunders & Cornett, 2007; JoEtta, 2007; Grier, 2007; Charles, 2003). Along with the development of accumulation disbursement of funds in fintech P2P lending industry, the credit risk caused by NPL also goes up. Between 2018 – 2020, the NPL of fintech P2P lending also grew significantly; 1.45% in 2018, 3.65% in and 8.27% in September 2020.

The risk of fintech P2P lending still becomes the challenge in this industry (Dorfleitner et al. 2017; Hsueh & Kuo, 2017; Ge, Feng et al. 2017), until now it has not possessed default parameters used to measure the health level of risk based fintech P2P lending industry. This kind of industry is the one which is risky (Hanafi, 2000), so it has to be managed well, because it can affect to the fintech ecosystem (Blyablina, 2019; Vovchenko et al. 2019; In Lee & Yong, 2017; Diemers et al. 2015). For instance, industrial problems impacted the ecosystem caused by the increase of the risk was the economic crisis in 1998. It started from marketing risk caused by fluctuations in foreign exchange risk that made some problems in banking industry, the increase of NPL significantly, to the systemic risk which caused troubles in banking ecosystem (Anginer et al, 2014). Many banking institutions were liquidated at that time because they were not strong enough to hold the crisis. In the future, the fintech P2P lending industry needs to anticipate such main problems which negatively impact its development and growth.

Instead of the above problems, there are other matters and obstacles (OJK, 2019) from the business of fintech P2P lending such as: (i) High interest, which has the potential for the borrower to be failed in the payment; (ii) The funders has the risk in losing their fund when the borrower cannot fulfill the payment because it will be the responsibility of the investors; (iii) Loan collection practices; (iv) Customers' protections have not been optimal; (v) There is no data center for fintech lending; (vi) Law protections have not yet been optimal; (vii) The loan products (plafond and rate), in which the company of fintech P2P lending has an obstacle in making business partnership with traditional financial institutions (banks) about the products because both company and the bank have their own loan products which are not necessarily appropriate for each other.

Those problems and obstacles need to be managed well unless it will increase other risks such as credit risk, operational risk, market risk, and liquidity risk as well as Covid-19 pandemic risk (Arkanuddin et al. 2021) that can contribute the problems. Fintech P2P Lending Industry should be aware and explore other possible risks that can give negative impacts towards the fintech ecosystem (Blyablina, 2019; Vovchenko et al. 2019; In Lee & Yong, 2017; Diemers et al. 2015).

The previous research regarding the risk has been done by Krishnan Chari (2020) entitled Fraud Risk in a Digitized Fintech ecosystem, in which the result stated that company management had to give serious attention to the fraud risk as well as the awareness of the company's employees about it. The fraud risk was the small part of the risks analyzed in the research. Another research was also conducted by Carmen et al. (2017) which analyzed about the relationship between fintech ecosystem with micro credit that has highly credit risk. The method in resolving the problem is by analyzing the variable relationship and conducting mitigation for every available risks.

Fintech ecosystem (Blyablina, 2019; Vovchenko et al. 2019; In Lee & Yong, 2017; Diemers et al. 2015) is collaboration between the government, fintech start-up, fintech customers, traditional financial institution (bank) in fulfilling customers' financial needs by the utilization support in information technology. It is one unit arrangement which can be competed and collaborated from several elements. Each element cannot stand alone or operate by itself, they have to be interacted each other, to affect the survival of this dynamic business in the future that follow the development of the external environment. It needs a stable ecosystem that will have endurance if the risk in this industry is high. The fintech ecosystem will be stable if all elements in the fintech ecosystem are collaborating and supporting each other, so when there are some external troubles, then the system will return to the normal condition in short time.

Hsueh & Kuo (2017) state the definition of fintech, which is a new financial service as the result of innovation developed by information technology (IT) support. Fintech, as an industrial and evolutional transformation, can be interpreted as a breakthrough for the financial industry in using IT knowledge development through the usage of mobile applications in all financial transactions. Other experts, Saksonova & Irina (2017), define that fintech is quality modern financial services to give convenience in transaction. Dorfleitner et al. (2017), gives the meaning of fintech as a dynamic and mobile industry with a business model that is more different than before. Aaron & Sohal (2017), states that fintech uses digital-based application (Prensky, 2001) as an intermediary or financial mediation solution.

Fintech Peer to Peer Lending (Dorfleitner et al. 2017; Hsueh & Kuo, 2017; Ge et al. 2017) is an internet based business model which fulfills loans between financial intermediaries. This platform (Blanchard & Oliver, 2015) is for small and medium companies which they think that bank loan terms are too high. Ge et al. (2017), say that Peer to Peer (P2P) lending is a process to perform money loans between 2 (two) peers/ individuals which are not directly related but through the online platform, without going to intermediary institutions (bank).

The risk is the prospect of unwelcome results (operational as standar deviation) as well as the magnitude deviation between the level of expected return (ER) and the level of actual return (Hanafi, 2000). Risk is also the evaluation towards inherent risk and the quality of risk management application in operation (fintech P2P lending) which is conducted for 8 (eight) risks i.e. credit risk, operational risk, market risk, liquidity risk, compliance risk, reputation risk, legal risk, strategic risk, and Covid-19 pandemic risk. Jorion (1999) states that the definition of business risk is the risks faced by the company on quality and superiority of its some market products. This kind of risk occurs because of uncertainty in business activities such as technology innovation, product design and the marketing.

The purpose of this research is to analyze the significant of risk effect towards fintech ecosystem. The risks occured can be sourced from credit risk, operational risk, market risk, liquidity risk, legal risk, strategic risk as well as Covid-19 pandemic risk (Arkanuddin et al. 2021). Some matters should be prepared to make the stable fintech ecosystem and capable in anticipating the available risks.

METHODS

The research paradigm used positivist with quantitative research design and the sampling technique used was non-probability sampling by conducting purposive sampling. Determination of the number of samples based on statement from Hair et al. in Ghozali (2008) that the method of MLE is effective in the number of samples between 150 and 400. The number of samples can also be determined by 5 - 10 samples per parameter (indicator). In this research there were 2 (two) constructs with 14 parameters in total (indicators). Based on the above conditions, the number minimum samples taken in this research was 14 x 5 = 60 respondents, while the

sampling taken was 150 respondent, it was appropriate. This research has been done for 2019-2020 in Jakarta.

From 150 respondents, in the gender category, there were 84 male respondents or 56% and 66 female respondents or 44%. In the age category, there were 7 peoples or 4.67% from the age of 54 and above, 105 peoples or 70.00% from the age between 35 – 54, 38 peoples or 25.33% from the age between 19 – 34, and there were no people or 0% from under 19 years old. In the job category, there were 107 peoples or 71.33% as employees, 33 peoples or 22% were enterpreneurs from micro, small and medium enterprises (UMKM), 7 peoples or 4.6% in other jobs and 3 peoples or 2% were professionals. In the job position category, there were 34 people or 23% as company directors/ administrators/owners, 21 people or 14% as general manager/ division head, 54 people or 36% as managers and 41 people or 27% as job positions below managers. In the educational background category, there were 2 peoples or 1% from doctoral degree (S-3), 17 people or 11% from master degree (S-2), 118 peoples or 79% from bachelor degree (S-1) and 13 people or 9% from under bachelor degree. In the respondents' residents category, 140 people or 93% live in Java island and 10 people or 7% live outside of Java island.

Method of sampling was done by non-probability sampling, either as end user of fintech P2P lending (online lending) or as non end user such as investors or lenders as well as conducting interviews to stakeholders of fintech P2P lending i.e. authority institutions, fintech association, fintech P2P lending businessmen and some some experts from banking institutions.

Risks Variables

The construct dimensions and indicators of the risks consist 7 (seven) items as seen on Table 1. Based on the table, there are 7 (seven) risk dimensions in this research i.e. credit risk, operation risk, market risk, liquidity risk, legal risk, strategic risk and 1 (one) risk added on the research, Covid 19 pandemic risk; because the researchers wanted to analyze the correlation of Covid 19 pandemic risk towards fintech start-up (industry players) and towards traditional financial institution (banks). The number of indicators were based on the dimensions of the number, which was 7 (seven) indicators, each representing 1 (one) quastion on the distributed questionnaire.

Ecosystem Variable of fintech

The construct dimensions and indicators of fintech ecosystem consist of 7 (seven) items, as seen on Table 2. Based on the Table 2, there were 7 (seven) fintech ecosystem dimensions in this research i.e. (i) Fintech startup companies; (ii) Government; (iii) Technology developer; (iv) Fintech P2P lending customers; (v) Traditional financial institution; (vi) Credit insurance institution and (vii) Consumer financial protection agency. The number of indicators were also the same as the number of dimensions with 1 (one) question in each indicator on the distributed questionnnaire.

Table 1. The risk indicators and dimensions

Variables	Dimensions	Indicators	Code	References
Risks	Credit Risk	Provision of funds Strategic/strategic in getting investor/lender	RP1	(Hull & John C, 2015; Saunders & Cornett, 2007; JoEtta Colquitt, 2007; Grier, 2007; Charles Schell, 2003).
	Operation Risk	IT and supporting infrastructures	RP2	
	Market Risk	Volumes and portfolio compositions	RP3	
	Liquidity Risk	Access on sources of funding.	RP4	
	Legal Risk	Litigation factors	RP5	
	Strategic Risk	High risk strategic and low risk strategic	RP6	
	Pandemic Risk-Covid 19	Having good BCP (Business Continously Plan)	RP7	Arkanuddin et al. (2021); Andreas Kiky (2020); Grima et al. (2020); Chanona et al. (2020)

Tabel 2. Dimensions and indicators – fintech ecosystem

Variable	Dimensions	Indicator	Code	References
Fintech ecosystem	Fintech Start-up Companies	Intellect	ECO1	In Lee & Yong Jae Shin (2018)
	Government	Policy	ECO2	
	Technology Developer	Reliable	ECO3	
	Fintech Customers	Decision	ECO4	
	Traditional Financial Institution	Collaborative	ECO5	
	Credit Insurance Institution	Claim Process	ECO6	Vovchenko et al. (2019)
	Consumer Financial Protection Agency	Customer Complaint Handling	ECO7	Jagtiani & Kose (2018)

Hypothesis was built to make it easier for the researcher to answer the available research problem, as seen on the following picture. Based on the Figure 1, the hypothesis was made as seen on the Table 3. The hyphotesis built as follows: H_0: Risk (X) does not have significant effect and correlation toward fintech ecosystem (Y) and H_1: Risk (X) has significant effect and correlation towards fintech ecosystem (Y). To support the research hyphotesis, it needed to be informed about theory and/ or empirical study of correlation between variables. The correlation between variables can be seen in Table 4. Based on the table, some researchers have made researches regarding the correlation of risk with fintech ecosystem, which means that there were empirical studies about them.

RESULTS

Data quality test (validity and reliability), validity test was conducted at the early stage for all construct either exogenous or endogenous and based on the result from Amos 23.00. The result of validity test for C.R. (critical ratio) and P (probability) on regression weights: (group number 1 – default model) it can be shown that dimensions and indicators from exogenous and endogenous construct in the earlier model were all significant (because they have value of C.R. ≥ 1,96 or probability (P) ≤ 0.05 or there were mark ***) hence there were no dropped indicators. The calculation result of standardized regression weights: (group number 1 – default model) can be known that dimensions and indicators from exogenous and endogenous construct in the earlier model were all valid because they have factor value of loading standard > 0,5 (Igbaria et al. in Wijanto, 2008 and Ghozali, 2008), so that they can be used for the next analysis.

For the risk, construct reliability was 0.9440 and the calculation result of variance extracted was 0.7083, while in fintech ecosystem, the construct reliability was 0.9607 and variance extracted was in estimation of 0.7779.

Cut off value from composite (construct) reliability and variance extracted were in minimum of 0.70 (Ghozali, 2008), and variance extracted was in minimum of 0.5 (Ghozali, 2008). Based on the calculation result of construct reliability for exogenous construct, then all the result from exogenous and endogenous construct were reliable and the calculation result of variance extracted for all exogenous and endogenous construct were reliable and valid.

Discriminant validity measures about how far a cosntruct is completely different from the others. The high discriminant validity gives proof that a construct is unique and capable in capturing measured phenomenon. They way to test it is by comparing the value of square root from average variance extracted (AVE) or by the value of correlation between the constructs. Based on the value of variance extracted (VE) from every construct, then the value of square root from construct AVE in this research can be calculated, Risk = $\sqrt{}$ 0.7083 = 0.8416 and fintech ecosystem = $\sqrt{}$ 0.7779= 0.8820.

Multicolinearity and Singularity are inside of variables combination. The matrix determinant value can know the indication of Multicolinearity and Singularity of sample covariance which are really small or almost zero. Determinant of sample covariance matrix = .000, Sample Correlations (Group number 1), from the output of calculation result from matrix determinant of sample covariance are as follows:

Condition number = 68.522

Eigenvalues

7.064 .665 .491 .467 .437 .300 .293 .260 .222 .204 .176 .143 .131 .103

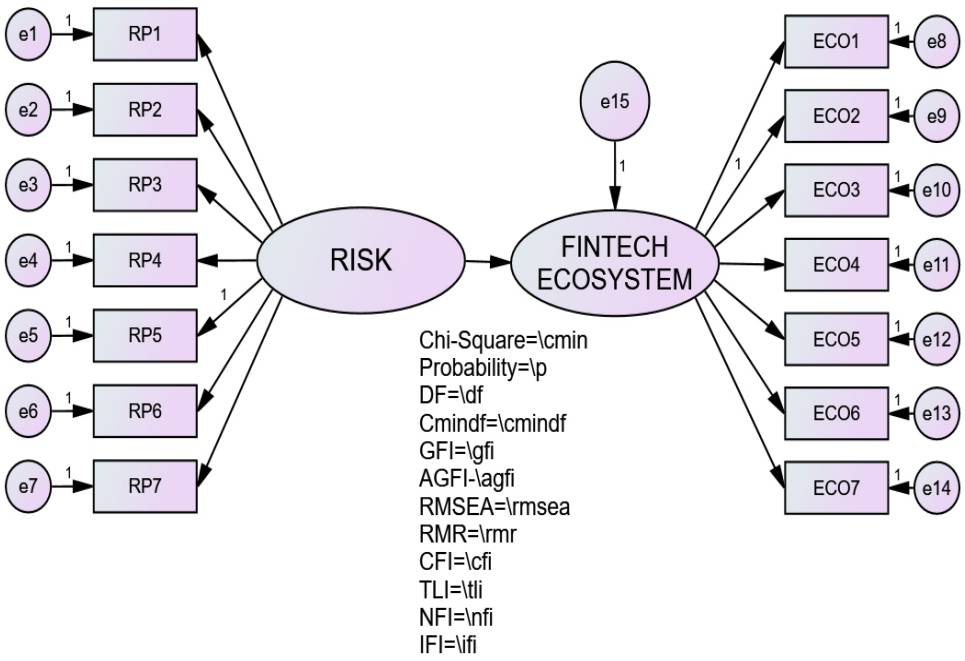

Figure 1. Research model hyphotesis

Table 3. Research hyphotesis

H0	Risk (X) does not have significant effect and correlation toward fintech ecosystem (Y)
H1	Risk (X) has significant effect and correlation towards fintech ecosystem (Y)

Table 4. Correlation between variables

Variable 1	Variable 2	S (Empirical Study)
Risk	Fintech Ecosystem	Chari, Krishnan (2020); Imerman & Fabozzi (2020), dan Nurul Widyaningsih (2018).

Determinant of sample covariance matrix = .000, almost zero. Therefore, it can be concluded that there were no multicolinierity and singularity.

The next analysis is structural equation modelling (SEM) in full model, and the test is based on the criteria of model fit which available in the table of Goodness of Fit Index. The result of processed data for former full model analysis, prior fit model can be shown in Figure 2. Full model (prior fit model) would be conducted for modification indices many times, and as the result, there has been final full model (fit model). The calculation by using SEM-Amos 23:00 would give some results such as squared multiple correlations (Table 5), correlations (Table 6), standardized direct effects (Table 7), and Goodness of Fit Index (Table 8).

Based on the output of Amos 23.00 on regression weights, the test was continued by conducting the appropriateness of full model (fit model). Based on the output of SEM Amos 23.00 again, the path chart could be seen as full model (fit model) that had proper Goodness of Fit, with the value of chi-square in the amount of 55.274 with probability (P) $\geq$ 0,05 in the amount of 0,099, however the values of DF, CMIN/DF, RMR, RMSEA, GFI, TLI, NFI, RFI, IFI, CFI has fulfilled the recommended values, and the test result of full model (fit model) in more details can be seen in Table 9 (Goodness of Fit Index).

Based on Tabel 9**.** it can be concluded that in overall, the final full model was an acceptable fit model. According to Ghozali (2012), Wijanto (2008), Wijaya (2009) and Widarjono (2010), Goodness of Fit (GOF) in overall can be assessed in minimum of 5 (five) criteria. In empirical studies, a researcher does not need to fulfil all criteria of Goodness of Fit. However, it depends on the decision or judgement made by each researcher. While Latan (2012) quotes the statement from Hair et al. (2010) who write that the usage of 4 or 5 criteria of Goodness of Fit can be considered to be enough to assess appropriateness of a model, providing that each

criteria of Goodness of Fit such as Absolute Fit Indices, Incremental Fit Indices and Parsimony Fit Indices are represented.

As for the structural equation resulted by full model (fit model) can be made from the output of AMOS 23.00 on Standardized Regression Weights: (Group number 1 – Default model), as follows:

Structural Equation : Fintech Ecosystem =
0,999* Risk + 0.001

Note : error or residual on structural equation was 0.001 obtained from 1 – 0.999 taken in the teble of squared multiple correlations: (group number 1 - default model)

Diagram of regression coefficient of full model (fit model) obtained from structural equation, can be seen in Figure 3.

The Hypothesis Test would be conducted later to get the research hyphotesis. The test made by using path analysis, and as the result, the estimation result was 0.999, which means that H_0 was rejected and H_1 was accepted, so that it can be concluded that the risk has significant effect and correlation towards fintech ecosystem. Based on the result from Amos 23:00, it could be made the matrix of correlations between the risks and the elements of fintech ecosystem, as can be seen in the Table 10.

Tabel 6. Correlations

				Estimate
e4	↔	e3	(Liquidity Risk ↔ Market Risk)	.249
e4	↔	e1	(Liquidity Risk ↔ Credit Risk)	.268
e10	↔	e11	(IT Developers ↔ Fintech Customers)	.377
e11	↔	e12	(Fintech Customers ↔ Traditional Financial Institution)	.255
e1	↔	e12	(Credit Risk ↔ Traditional Financial Institution)	-.247
e1	↔	e8	(Credit Risk ↔ Start-Up Fintech)	-.186

Tabel 7. Standardized direct effects

	Risk	Fintech Ecosystem
Fintech Ecosystem	.999	.000

Tabel 8. Standardized total effects (group number 1 - default model)

	RISK	Fintech Ecosystem
Fintech Ecosystem	.999	.000

Table. 9. Test Result of Full Model (Fit Model)

Goodness of Fit Index	Cut Off Value	Result	Criteria
DF	> 0	43	Over Identified
X2 -Chi-Square	< 214.477	55.274	Good Git
Probability	> 0.05	0.099	Good Git
CMIN/DF	< 2	1.285	Good Fit
RMR	< 0.05	0.022	Good Fit
RMSEA	< 0.08	0.044	Good Fit
GFI	> 0.90	0.946	Good Fit
AGFI	> 0.90	0.902	Good Fit
TLI or NNFI	> 0.90	0.987	Good Fit
NFI	> 0.90	0.963	Good Fit
RFI	> 0.90	0.943	Good Fit
IFI	> 0.90	0.992	Good Fit
CFI	> 0.90	0.991	Good Fit

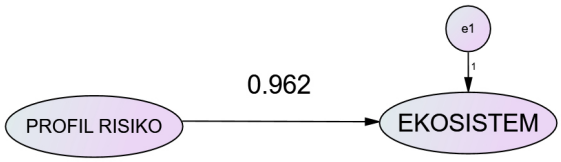

Figure 3. Regression coefficient of full model (fit model)

Table 10. Correlations

	ECO6	ECO5	ECO4	ECO3	ECO2	ECO1	RP1	RP2	RP3	RP4	RP6	RP7
ECO6	1.000											
ECO5	.695	1.000										
ECO4	.556	.711	1.000									
ECO3	.610	.706	.753	1.000								
ECO2	.732	.681	.650	.744	1.000							
ECO1	.692	.709	.615	.703	.747	1.000						
RP1	.552	.664	.491	.561	.520	.488	1.000					
RP2	.587	.602	.522	.597	.633	.599	.478	1.000				
RP3	.519	.532	.462	.528	.560	.530	.423	.450	1.000			
RP4	.656	.672	.583	.667	.708	.670	.655	.569	.620	1.000		
RP6	.685	.702	.609	.696	.739	.699	.559	.594	.526	.664	1.000	
RP7	.665	.681	.591	.676	.717	.679	.542	.576	.510	.644	.673	1.000

Based on the result of Amos 23:00 and the interviews with the stakeholders of fintech P2P lending industry in Indonesia, it can be stated some important summary as follows:

- The risk has significant effect and correlation towards fintech ecosystem, which showed every risk increase in this industry will be very impactful in the stability of the fintech ecosystem since it had rise of NPL (non-performing loan) during the period of 2020, meanwhile the NPL is the cause of credit risk, that the rise of the credit risk will disturb the stability of the fintech ecosystem as well. The correlation between variables was based on the empirical studies. It practically could be seen from cases of economical crisis in 1998, it started from the changes in foreign exchange rate of USD against Rupiah which increased sharply and this changes was the market risk which had significant effect towards ecosystem of banking industry at that time. The disturbance of the unstability in the ecosystem of bank industry during this time could be reflected from liquaidations of many bank institution and the large number of disbursement from Indonesian Bank Liquidity Assistance (BLBI – *Bantuan Likuiditas Bank Indonesia*).
- Strengthen the elements of fintech ecosystem is one of the effort in keeping the stability of fintech ecosystem, by conducting cooperation, coordination and collaboration between the available elements, so that the fintech ecosystem will be strong and stable in facing and anticipating every risk occured from the outside.
- High risk will cause disturbance in the stability of fintech ecosystem or instability, but if the risk is low, the ecosystem will be relatively stable.
- Every available risks will have correlation with all elements of the fintech ecosystem.
- Risk mitigation is one way to anticipate the disturbance of fintech ecosystem stability.
- Major elements in the fintech ecosystem is the fintech start-up and the traditional financial instititution, because both elements are business performer or organizer of industry and Indonesia's banking and financial industry.
- The credit risk has correlation towards all elements of fintech ecosystem, especially the elements of fintech start-up and traditional financial institution. In order that the correlation does not have effect, the risk mitigation will need to be done through customer segmentation. The handling unbanked and underserver customers should be conducted well to avoid fraud.

- The operation risk correlates with all elements in the fintech ecosystem, especially the elements of fintech start-ups and traditional financial institutions. In order that the correlation does not have effect, operation risk mitigation will need to be done. One of the ways in conducting this mitigation is by the utilization of mobile application and each business process must be supported by the utilization of qualified information technology.
- The market risk correlates to all elements in the fintech ecosystem, especially the elements of fintech start-ups and traditional financial institutions. In order that the correlation does not have effect, the market risk will need to be done. One of the ways in conducting this mitigation by arrangement of fixed rate and does not use foreign exchange in loan disbursement because of exchange rate risk.
- The liquidity risk correlates with all elements in the fintech ecosystem, especially the elements of fintech start-ups and traditional financial institutions. In order that the correlation does not have effect, the liquidity risk mitigation needs to be done. One of the ways in conducting mitigation is by making cooperation with investors or lenders permanently as stand-by investors or lenders and reserve business operational fund in a planned and thorough.
- The strategic risk correlates to all elements in the fintech ecosystem, especially the elements of start-up fintech and traditional financial institutions. If the correlation does not have effect, the strategic risk mitigation needs to be done. One way to conduct mitigation is by making business plan adaptation in anticipating every changes of external environment, considering the condition of VUCA (volatility, uncertainty, complexity and ambiguity) that hits the business world.
- Covid-19 pandemic risk is the risk added in this research, which correlates with all elements in fintech ecosystem, especially the elements of fintech start-up and traditional financial institution. In order that the correlation does not have effect, the mitigation of this pandemic risk needs to be done. One of the ways in conducting this mitigation is by utilization of mobile application, because the transaction can be made without meeting face to face and as supports for government program in social distancing.
- Managing the risks well by controlling the mitigations and the risk controlling will assist in creating business stability, especially the ecosystem of this business – fintech P2P lending industry – in Indonesia.

Managerial Implication

The managerial implication of research result, there are three things, as follows; (i) fintech ecosystem reconstruction concept (Lee & Yong, 2018) from 5 elements to 7 elements; (ii) The risk implication, the fintech industry have to mitigate the fundamental risks of fintech P2P lending, so they didn't affect the systemic risk on fintech ecosystem; (iii) the regulation implication for improving the existence regulation and issuing the new regulation as well as the industrial needs.

CONCLUSIONS AND RECOMMENDATIONS

Conclusions

The risks have significant effects and correlation toward the fintech ecosystem. In this case, the fintech P2P lending industry has to be able to manage the risks well, through controlling and mitigating the available risks, so that it can create stability in the fintech ecosystem. The high or low risks will impact on the level of fintech ecosystem stability, the more stable of the fintech ecosystem, it can accelerate the development and the growth of this industry in the future. In anticipating on external disturbance such as risks, all elements of fintech ecosystem can making cooperation, coordination and collaboration to strengthen its stability. Other conclusions are as follows; (i) Managing the risks well by controlling and mitigating them; (ii) Controlling and mitigating risks can be conducted on the risks which have significant effect towards fintech ecosystem, especially the credit risk, by conducting customer segmentation so that the candidates of unbanked and underserved customers can be handled well and carefully and it cannot cause the potential of credit risk; (iii) Strengthen the cooperation, coordination and collaboration among all elements of fintech ecosystem to maintain ecosystem stability.

Recommendations

Fintech P2P lending industry focuses on loan distribution such as NPL, unfortunately, the NPL can cause the credit risk. In order that the cause of credit risk can be mitigated, every fintech P2P lending hosting company has to run this business carefully and prudent as well as be able to apply customer segmentation well so that the customer candidates from the unbanked

and underserved categories can be filtered and handled properly including the problem of fraud that also can be controlled. It also needs to be added 2 (two) other elements of ecosystem i.e. credit insurance institution and customer protection institution to anticipate the business needs in the future.

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