The Effect of Total Asset Turnover Ratio, Return on Asset, and Dividend Policy on The Investment Opportunity Set (IOS)

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Abstract

This study aims to determine the simultaneous and partial effect of the total asset turnover ratio, return on asset, and dividend policy on the Investment Opportunity Set (IOS). Investment Opportunity Set (IOS) is a concept used to assess a company in the form of a combination of assets and investment options in the future. The population in this study are companies listed in the LQ45 index on the Indonesia Stock Exchange for the 2017-2020 period. The method used in this research is the quantitative method and the sample selection method uses the purposive sampling technique. This study has 104 observational data obtained from 26 samples of companies. The data analysis used in this research is panel data regression analysis using EViews 12. The result shows that the total asset turnover ratio, return on assets, and dividend policy have a simultaneous effect on the Investment Opportunity Set (IOS). Partially, the total asset turnover ratio has no effect on the Investment Opportunity Set (IOS), return on asset and dividend policy have a positive effect on the Investment Opportunity Set (IOS).

Keywords
Total Asset Turnover Ratio, Return on Asset, Dividend Policy, Investment Opportunity Set (IOS)

1. Introduction
The growth and development of the company is something that is expected and pursued by every company following the vision and mission that has been set by the company. A company expects its growth to have a positive impact so that it can increase investment opportunities in the company and can maximize the value of the company by increasing the welfare of investors. Currently, the valuation of a company cannot be seen only from the financial statements but can be seen from the value of the investment that will be issued in the future. The Investment Opportunity Set (IOS) is a component of company value that results in the choice to invest in the future (Afriadi, 2016).

Investment Opportunity Set shows the investment options owned by a company. Therefore, IOS is very important in determining the growth of a company in the future. Investment Opportunity Set provides an overview of various investment opportunities for a company. Companies will experience higher expenditures compared to the loss of value of investment opportunities if a company does not take advantage of investment opportunities. In addition, in a certain period the presence of IOS in a company shows the ability of a company to maximize profits. Companies that develop are more in demand by investors to invest their capital than companies that are stable or experiencing setbacks because developing companies will get the returns expected by investors (Novianti & Simu, 2016).

Capitalization value can describe the growth of a company. During 2017 – 2020, companies with the LQ45 index experienced fluctuations in the development of market capitalization. In the period 2017 and 2019 market capitalization experienced a high increase of 23.5% and 6.7%, respectively. Meanwhile, in 2018 and 2020 market capitalization decreased by 4.9% and 21.4%, respectively (Otoritas Jasa Keuangan, 2020).

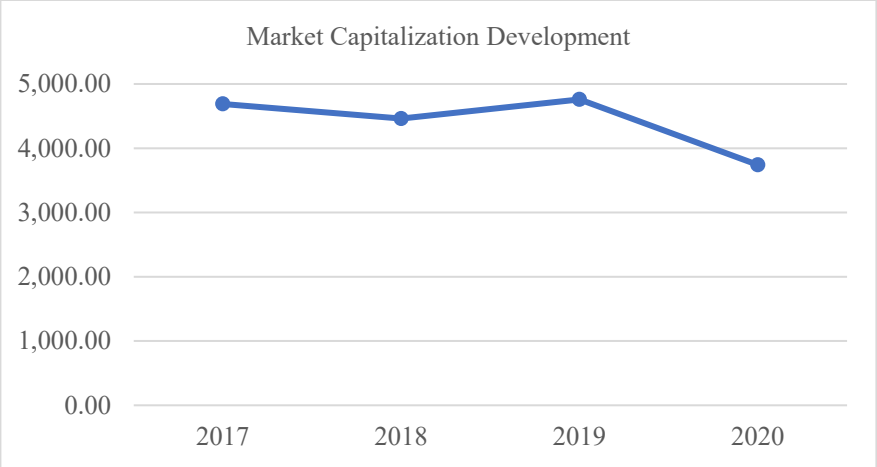

Figure 1. Company Market Capitalization Development Chart in LQ45 Index
Source: Capital Market Statistics (Financial Services Authority, 2020)

From the graphic data Figure 1 above, the companies listed in the LQ45 index which have the largest market capitalization in 2019 amounted to 4,759.64 trillion, while those with the smallest market capitalization in 2020 amounted to 3,741.04 trillion. In addition to considering the fundamental conditions and business prospects, investors who invest in the IDX also consider the market capitalization value because it describes the development of a stock market and describes the market value of both individual stocks and the stock exchange in a country. Companies that have a small market capitalization value indicate that the size of the company is small in terms of assets and capital so that in the future it has the potential for higher return growth. However, despite having a higher return, companies that have a small capitalization value cause higher business risk and uncertainty when investing in this stock (Oke Finance, 2017).

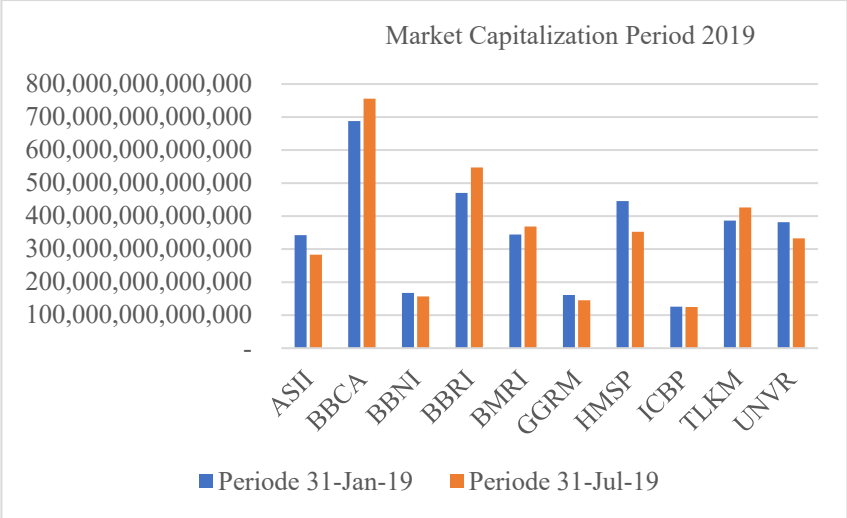

Figure 2. Market Capitalization Development Chart For The 2019 Period
Source: LQ45 Company Performance Summary (Indonesia Stock Exchange, 2019)

The company's growth can be described by its capitalization value. (Figure 2). According to Kallapur, Sanjay, and Trombley (2001) (Mahbub, 2021), the most appropriate proxy used to measure IOS is a price-based proxy. In 2019, there were 10 companies with market capitalizations above 100 trillion. Of the 10 companies, there are 4 companies whose capitalization has increased. The 4 companies are BBCA (Bank Central Asia Tbk) up 9.85%, BBRI (Bank Rakyat Indonesia Tbk) growing 16.36%, BMRI (Bank Mandiri Tbk) increasing 7.05%, and TLKM (Telekomunikasi Indonesia Tbk) rising 10.26%. From the graphic data above, Bank Central Asia Tbk (BBCA) has the largest

capitalization of 755.44 trillion at the end of July 2019. BBCA in July 2019 experienced an increase in capitalization of 67.73 trillion from the end of January 2019 which was 687.71 trillion. Meanwhile, the highest increase in capitalization was at Bank Rakyat Indonesia Tbk (BBRI) with a capitalization increase of 76.93 trillion. The increase in BBRI's capitalization was due to the increase in BBRI's share price from the end of January 2019 to the end of July 2019. The company that experienced the largest decrease in capitalization was HM Sampoerna Tbk (HMSP) which amounted to 93.05 trillion. This was due to the decline in HMSP's share price from the end of January 2019 to the end of July 2019.

Some factors affect the Investment Opportunity Set (IOS). This study focuses on three independent variables including Total Asset Turnover Ratio, Return on Assets, and dividend policy.

1.1 Objectives

Investment Opportunity Set (IOS) can be influenced by several factors. This study aims to examine the effect of the total asset turnover ratio, return on asset, and dividend policy on the Investment Opportunity Set in companies listed on the LQ45 index on the Indonesian Stock Exchange for the 2017-2020 period. Investors can assess the Investment Opportunity Set (IOS) by considering the total asset turnover ratio, return on asset, and dividend policy for making decisions in investing their capital.

2. Literature Review

2.1 Agency Theory

According to Jensen and Meckling (1976) in (Hariyanto & Lestari, 2015), agency theory is a situation that occurs on two sides between a company where the management as the agent and the owner of the capital (owner) as the principal establish a cooperation contract called the "nexus of contract", this cooperation contract contains an agreement that explains that the management of the company must work optimally to provide maximum decisions such as high profits to the owners of capital (owners).

2.2 Investment Opportunity Set (IOS)

Investment Opportunity Set (IOS) is an investment decision in the form of a combination of real assets and investment options in the future. Investment options are an opportunity to grow, but all investment opportunities in the future are sometimes not implemented by a company. Companies that do not implement these investment opportunities will experience a higher expenditure compared to the loss of opportunity value (Azhary, 2019). Investment Opportunity Set (IOS) is measured by the market to book value of assets. Market to book value of assets ratio is a ratio that is often used in IOS measurements. This proxy is used to measure the growth prospects of a company and be taken into consideration by investors in the company. The greater the MBVA value of a company, the better the IOS that supports the company to grow.

$$\mathbf{MBVA} = \frac{\mathbf{T.\,Assets} - \mathbf{T.\,Equity} + (\mathbf{Outstanding\ Shares\ x\ Closing\ Price})}{\mathbf{Total\ Assets}}$$

Companies that have high IOS tend to be rated positively by investors because they have more profit prospects in the future so the value of the company will increase because more investors will be interested in investing and expect greater returns in the future (Warianto & Rusiti, 2014).

2.3 Total Asset Turnover Ratio

The total asset turnover ratio is one of the activity ratios used to measure how effective the company is in utilizing its resources in the form of assets. The total asset turnover ratio is the percentage ratio between sales to total assets which measures the efficiency of using all assets (Afriyanti, 2011). Total asset turnover ratio is a measure of total asset turnover capability in a period. The greater the value of this ratio, the better because it indicates that the company can use all assets to generate sales so that it can make a profit (Anggrahini, 2018).

$$\mathbf{TATR} = \frac{\mathbf{Sales}}{\mathbf{Total\ Assets}}$$

A high level of effectiveness indicates the opportunity to grow a high company in the future so that it allows a company to have investment opportunities (Azhary, 2019).

Hypothesis 2: Total Asset Turnover Ratio has a positive effect on the Investment Opportunity Set (IOS).

2.4 Return On Assets

Return on Assets (ROA) is a measure of the company's ability to earn profits by using total assets. The growth of Return On Assets shows the company's prospects are getting better because of the potential profit generated by the company (Syardiana et al., 2015). Return on Assets is measured by dividing net income by all total assets.

$$\textbf{ROA} = \frac{\textbf{Net Profit After Tax}}{\textbf{Total Assets}}$$

Companies that have a high level of ROA reflect the ability of a company is high in providing financial remuneration for all providers of company funds so that they are willing to reinvest ROA in a company and increase investment opportunities for the company (Atmawati, 2010).

Hypothesis 3: Return on Assets has a positive effect on the Investment Opportunity Set (IOS).

2.5 Dividend Policy

Dividend policy is the company's decision in distributing dividends to shareholders for the profits earned (Muchibbin & Nurhidayati, 2016). Managers must consider when profits will be retained in the company or profits distributed to shareholders. The dividend policy used in this study is the Dividend Payout Ratio (DPR) which shows the percentage comparison between the dividends paid and the company's net income. DPR is measured by dividing the cash dividend per share by the profit earned per share.

$$\textbf{DPR} = \frac{\textbf{Dividend Per Share (DPS)}}{\textbf{Earning Per Share}}$$

Companies that have a high Dividend Payout Ratio level reflect that the development of a company will be hampered due to reduced sources of income from retained earnings which is not good for investment opportunities.

Hypothesis 4: Dividend policy has a negative effect on the Investment Opportunity Set (IOS).

3. Methods

Panel data regression analysis was used in the testing of this study. The population used in this study are companies listed in the LQ45 index on the Indonesia Stock Exchange (IDX) in 2017-2020 with a sampling technique using purposive sampling. The analysis of this research panel data model has the following equations:

$$IOS = 0{,}657432 - 0{,}158934TATR + 1{,}966558ROA + 0{,}269432DPR + E$$

4. Data Collection

Secondary data is used in this study. Secondary data sources include government publications, information published from inside or outside the company, case studies, library documents, data from previous research, websites, and the internet. Sources of data for this study are annual reports and financial reports on companies listed in the LQ45 index on the Indonesia Stock Exchange for the 2017-2020 period, company stock prices, theses, previous journals, articles, news, and books related to research variables. This study uses the following data collection methods:

1) Documentation

Documentation is a data collection technique by collecting data and documents needed from various sources and related to research variables. Researchers obtained secondary data in the form of financial statements and annual reports of companies listed in the LQ45 index for the 2017-2020 period from the Indonesia Stock Exchange and the official websites of each company.

2) Literature Study

A literature study is a data collection technique by collecting data obtained from reference books, scientific articles, and previous research journals.

5. Results and Discussion

5.1 Numerical Results

Table 1. Descriptive Statistics Test Results

	Y	X1	X2	X3
Mean	2.583507	0.690224	0.089543	0.512206
Maximum	23.28575	2.296918	0.466601	2.683629
Minimum	0.773378	0.060808	0.000671	0.000000
Std. Dev.	3.633274	0.550227	0.088491	0.490988
Observations	104	104	104	104

The results of Table 1, show that the average value of the Investment Opportunity Set (IOS) is 2,583507 which is smaller than the standard deviation of 3,633274. This shows that the Investment Opportunity Set (IOS) data group is varied or ungrouped. While the total asset turnover ratio, return on assets, and dividend policy have an average value greater than the standard deviation. This shows that the three variables have data groups that are not varied or in groups.

5.2 Graphical Results

Based on the results of the sample criteria determined by the researcher, there were 26 companies during the 2017-2020 period with a total of 104 observations, but when the normality test was carried out the data were not normally distributed so data transformations and outliers were carried out. The data detected outliers include ANTM, BBTN, BSDE, HMSP, ICBP, INTP, KLBF, MNCN, PTBA, SCMA, UNVR, and WIKA so these companies are discarded in the data processing. The total sample which was originally 26 companies became 14 companies during the 2017-2020 period, so the total observations were 56.

1. Normality Test

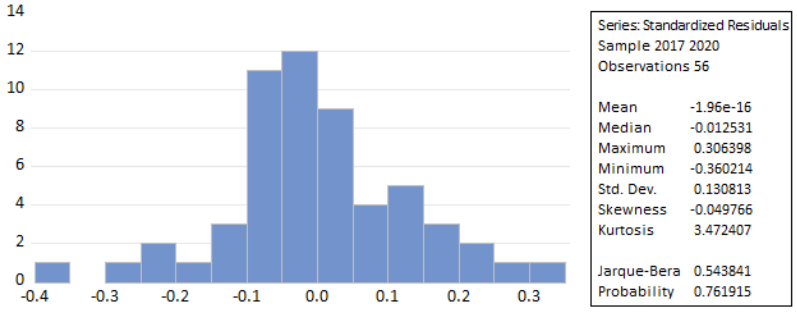

Figure 3. Normality Test Results

Source: Output Eviews 12, data that has been processed by researchers (2022)

Based on the results of the normality test, the Jarque-Bera value is 0.543841 and the probability value is 0.761915 > 0.05, so it can be concluded that the data used in this study is normally distributed. (Figure 3)

2. Multicollinearity Test

Table 2. Multicollinearity Test Results

Variance Inflation Factors
Date: 06/28/22 Time: 09:40
Sample: 1 56
Included observations: 56

Variable	Coefficient Variance	Uncentered VIF	Centered VIF
X1	0.009031	15.11841	2.361256
X2	0.122601	21.70987	2.354689
X3	0.007962	9.841874	1.064371
C	0.007290	22.65995	NA

Source: Output Eviews 12, data that has been processed by researchers (2022)

Based on the results of the multicollinearity test, the VIF value of each independent variable includes the total asset turnover ratio, return on assets, and dividend policy 10 so it can be concluded that the data in this study does not occur multicollinearity. (Table 2)

3. Autocorrelation Test

Table 3. Autocorrelation Test Results

Breusch-Godfrey Serial Correlation LM Test:
Null hypothesis: No serial correlation at up to 2 lags

F-statistic	1.690521	Prob. F (2,49)	0.1950
Obs*R-squared	3.550088	Prob. Chi-Square (2)	0.1695

Source: Output Eviews 12, data that has been processed by researchers (2022)

Based on the results of the autocorrelation test showed the value of Prob. Chi Square (Obs*R-Squared) is 0.1695 > 0.05, so it can be concluded that the research data does not have autocorrelation problems. (Table 3)

4. Heteroscedasticity Test

Table 4. Heteroscedasticity Test Results

Heteroskedasticity Test: White
Null hypothesis: Homoskedasticity

F-statistic	1.833407	Prob. F (9,46)	0.0875
Obs*R-squared	14.78443	Prob. Chi-Square (9)	0.0970
Scaled explained SS	16.33911	Prob. Chi-Square (9)	0.0601

Source: Output Eviews 12, data that has been processed by researchers (2022)

Based on the results of the heteroscedasticity test with the white test, the Prob chi-square value is 0.0970 > 0.05, so the regression model does not contain heteroscedasticity or there is no heteroscedasticity. (Table 4)

5.3 Validation

Based on the results of the panel data regression estimation model selection that has been carried out, it can be concluded that the most appropriate model to be used in this study is the random effects model which was carried out with EViews 12.

Table 5. Random Effect Model Test Results

Dependent Variable: Y
Method: Panel EGLS (Cross-section random effects)
Date: 06/28/22 Time: 08:26
Sample: 2017 2020
Periods included: 4
Cross-sections included: 14
Total panel (balanced) observations: 56
Swamy and Arora estimator of component variances

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.657432	0.109995	5.976915	0.0000
X1	-0.158934	0.142972	-1.111638	0.2714
X2	1.966558	0.439135	4.478250	0.0000
X3	0.269432	0.077757	3.465069	0.0011

Effects Specification		
	S.D.	Rho
Cross-section random	0.111401	0.5822
Idiosyncratic random	0.094372	0.4178

Weighted Statistics			
Root MSE	0.088484	R-squared	0.366720
Mean dependent var	0.450061	Adjusted R-squared	0.330184
S.D. dependent var	0.112196	S.E. of regression	0.091824
Sum squared resid	0.438446	F-statistic	10.03738
Durbin-Watson stat	1.487360	Prob(F-statistic)	0.000025

Unweighted Statistics			
R-squared	0.510709	Mean dependent var	1.153929
Sum squared resid	0.941169	Durbin-Watson stat	0.692890

Based on Table 5, shows that the results of the random effects model test formulate an equation for the regression model in this study which explains the effect of total asset turnover ratio, return on assets, and dividend policy on the Investment Opportunity Set (IOS) in companies listed on the LQ45 index on the Indonesian Stock Exchange for the 2017-2020 period.

Based on the results of the coefficient of determination, the adjusted r-squared value is 0.330184 or 33.02%. This shows that the variable total asset turnover ratio, return on assets, and dividend policy can explain the Investment Opportunity Set (IOS) variable of 33.02% in companies listed in the LQ45 index on the Indonesia Stock Exchange for the 2017-2020 period, while the remaining amount is 66.98% is explained by other factors outside the variables of this study.

Based on the results of the simultaneous test, the probability value (f-statistic) is 0.000025 or <0.05, so it can be concluded that the total asset turnover ratio, return on assets, and dividend policy simultaneously affect the Investment

Opportunity Set (IOS) in the company. listed in the LQ45 index on the Indonesia Stock Exchange for the 2017-2020 period.

Based on the results of the partial test using panel data regression analysis, the probability value for the total asset turnover ratio variable is 0.2714, which is greater than the 0.05 significance level. In addition, the total asset turnover ratio variable also obtained a negative coefficient value of -0.158934, indicating that the total asset turnover ratio variable has a negative relationship with the Investment Opportunity Set (IOS). This shows that the total asset turnover ratio variable has no negative effect on the Investment Opportunity Set (IOS) as measured by the market to book value of assets in companies listed in the LQ45 index on the Indonesia Stock Exchange for 2017-2020 period. The higher or lower total asset turnover ratio of a company may not necessarily affect the Investment Opportunity Set (IOS) in a company. The total asset turnover ratio in the form of sales does not affect increasing the company's return because many competitors have entered a large market share so that investors do not do the Investment Opportunity Set

The probability value on the return on asset variable is 0.0000 which is smaller than the 0.05 significance level. In addition, the return on assets variable also obtained a positive coefficient value of 1.966558, indicating that the return on assets variable has a positive relationship with the Investment Opportunity Set (IOS). This shows that the return on assets variable has a positive effect on the Investment Opportunity Set (IOS) as measured by the market to book value of assets in companies listed in the LQ45 index on the Indonesia Stock Exchange for the 2017-2020 period. High profitability gives a signal about the company's growth in the future, where part of the profitability will be invested again in the form of investment to increase company value.

The probability value on the dividend policy variable is 0.0011 which is smaller than the 0.05 significance level. In addition, the dividend policy variable also obtained a positive coefficient value of 0.269432, indicating that the dividend policy variable has a positive relationship with the Investment Opportunity Set (IOS). This shows that the dividend policy variable has a positive effect on the Investment Opportunity Set (IOS) as measured by the market to book value of assets in companies listed in the LQ45 index on the Indonesia Stock Exchange for the 2017-2020 period. It can be concluded that if the dividend policy given by the company is high, to investors, the investment opportunity in a banking company also gets bigger. This means that it is following the theory of dividend irrelevance. Where according to this theory, companies can distribute dividends, large or small, as long as it is possible to cover the lack of funds from external sources. So what is important is whether the available investment is expected to provide a positive net present value, no matter whether the funds used to finance come from within the company (retaining profits) or from outside the company (issuing new shares). The impact of the choice of decision is the same for the wealth of investors, or the dividend decision is irrelevant (Afriadi, 2016) .

6. Conclusion

Simultaneously, the total asset turnover ratio, return on assets, and dividend policy has a significant effect of 0.000025 on the Investment Opportunity Set (IOS) in companies listed on the LQ45 index on the Indonesia Stock Exchange for 2017-2020 period. Based on the results of the partial test, the following conclusions were obtained:

1. The total asset turnover ratio has no significant effect on the Investment Opportunity Set (IOS) in companies listed in the LQ45 index on the Indonesia Stock Exchange for the 2017-2020 period.
2. Return on assets has a significant positive effect on the Investment Opportunity Set (IOS) in companies listed in the LQ45 index on the Indonesia Stock Exchange for the 2017-2020 period.
3. Dividend policy has a significant positive effect on the Investment Opportunity Set (IOS) in companies listed on the LQ45 index on the Indonesia Stock Exchange for the 2017-2020 period.

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Biographies

Rahayu Puji Utami, I am an undergraduate accounting student from Telkom University. I was born and raised in Bandung, on 09 October 2000. I am the second child of two siblings. My father's name is Dedi Rohaedi and my mother's name is Ai Yuyu. My family used to call me Tami, and so did my friends. I started elementary school when I was 6 years old. I go to school at Linggar 4 Elementary School which is not far from my house. Then after graduating from elementary school, I continued my education at SMPN 1 Cicalengka in 2012. Since middle school, I've always tried to study hard because I wanted to get into my favorite high school in my area. It turned out that my efforts were not in vain, after graduating from junior high school I was accepted at SMAN 1 Cicalengka. One of my dream high schools. After graduating from high school, I continued my studies at one of the best private universities in Indonesia, namely Telkom University.

Muhamad Muslih. I am usually called Kang Moez. I was born and grew up in Bandung, November 13th, 1978, from a root of an educator. Started from my grandfathers and their brother, my elder sisters, and so many. I am the fifth of seven children, three sisters and three brothers. Because they always support me, I love them so much. Sport is my hobby. Playing tennis table is so excited. Sport is also perfect media to get socialized. My favorite player is European world short pips player Mattias Falck. My mother's way of thinking in education for the next generation influenced me so much. Since graduated from magister of management of Telkom University in 2011, Inshallah this year I start my journey for Ph.D Program. My professional career started on 2002. From marketing officer in 2002, until accounting lecturer now, handling Costing & Managerial Accounting subject seems to be my destiny. On 2012, After finished my magister, there were offer and opportunity to become a lecturer of Accounting program at Telkom University. Since there, I hold several subjects. Lecturing Cost & managerial Accounting off course the starting point. The rests are Budgeting, Governance, and Risk Management. On its way I pay more attention on governance subject. Now on I enjoy governance as my core competency. My main research, teaching is there.