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PREFACE

We are very grateful to God Almighty for his grace that the 7th Indonesian Finance Association (IFA) International Conference was held successfully on October 6-7, 2021. The 7th IFA International Conference was held virtually, supported by our generous host, the Indonesian Stock Exchange (IDX).

The theme of this conference is "Finance, Capital Market, and Corporate Governance in the Digital Transformation Era". The COVID-19 pandemic has pushed almost all industries sector to be digital for almost two years now. As the result, digitalization has grown even more massively, especially in the financial industry that, consequently, has also caused numerous changes in life beside the pandemic itself. How digitalization shape corporates and investors' behavior and how it affects financial stability are still the big questions. The conference was a great opportunity to share initial successes (and mishaps) that each of us can learn from.

We hope our conference can uncover some of the digital effects and challenges in the finance field. Nevertheless, most importantly, we will also foresee what the future holds for financial markets.

This event will not be a success without the close collaboration between the Indonesian Finance Association and the Self-Regulatory Organization of Indonesia's Capital Market as the main sponsor.

Finally, we would like to thank all participants and presenters who have been supporting the Indonesian Finance Association conference. We have a total of 43 submitted papers from 6 countries, Bangladesh, Greece, Indonesia, Macao, Mexico, and the United Kingdom. After a process of double-blind review, we hand-picked 39 high-quality articles to be presented at the conference. From these 39 articles, there were 15, from four countries, have agreed to include their full paper in the proceedings.

We sincerely hope that these proceedings will benefit all the participants and readers. We welcome any suggestions and constructive feedback to improve the next IFA conference and proceedings, and we look forward to seeing you again.

Yogyakarta, December 2021

Editors

SYSTEMATIC RISK ON STOCKS IN IDX30 AT PANDEMIC DISTRESS ERA

A An Arief Jusuf[a]*

ABSTRACT

This research aims to estimate systematic risk using Ordinary Least Square and Quantile Regression on IDX30 members. The equations from Ordinary Least Square and Quantile Regression are compared to be filtered with Hannan-Quinn Criteria. With 23 stocks as the sample in this research, with the observation from March 2020 till the end of July 2021, the results show that some estimated equations for stock return have constant parameters significantly. The results from this research describe the systematic risk of individual stock return and minor information about the sub-sector of industry classification, which ranked by the sample.

Keywords: Ordinary Least Square, Quantile Regression, Hannan-Quinn, Systematic Risk.

1. INTRODUCTION

IDX30 was composed on April 23rd, 2012, which consists of the 30 largest capitalized stocks in LQ45. Stocks selection is held every beginning of February and August. Selection criteria are transaction value, transaction frequency, the sum of transaction days, and market capitalization. Qualitative criteria are financial condition, growth prospect, and other criteria connected with company growth.

The pandemic, which began in February 2020 in Indonesia, has disruptive effects. Numerous sectors have been declined since 2020. These effects are still ongoing with fluctuating patterns in the stock market—a systematic risk commonly known as beta. Systematic risk is an external factor which uncontrollable by the firm. The firms whose stocks traded on the stock market would have an uncommon situation than before the pandemic era.

Indonesia Composite Index fell approximately 35% from 6013.699 to 3911.716 in March 2021. After sharply declining, the Indonesia Composite Index gradually has risen till now. Some stocks have not been recovered to the price before. The disruption of company value can be caused by the global economic condition.

The market model specifies a relationship between the returns for individual assets and a market factor. Blume (1970) stated the empirical results suggest that the choice of a particular method of assessing future performance or predictive distributions of future returns of portfolios using historical data is of consequential importance in obtaining accurate

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assessments. Black (1972) had concluded the traditional form of the Capital Asset Pricing Model (CAPM) states that the expected excess return on a security is equivalent to its level of systematic risk times the expected excess return on the market portfolio.

CAPM has limitations about the measurement and has difficulties implementing valid tests of the model (Fama and French, 2004). Fama and French (2004) conclude that most of the important models are built on unrealistic assumptions which must be practically tested. The CAPM risk-return relationship has been tested empirically, the empirical evidence is generally mixed (e.g., Lintner, 1965; Black, 1972; Levy, 1978).

Although the CAPM is criticized for the assumptions of the model, such as unrestricted risk-free borrowing and lending, the investors only care about the risk and return of one-period portfolio returns. Elbannan (2014) has concluded Market Beta explains the expected returns, in addition to the proxy of the market portfolio of all risky assets. Many industries depend on this model to determine its price in the market.

In this research, the risk-return relationship between stock returns and the market return is reexamined using the Ordinary Least Square method compared to Quantile Regression. The Quantile Regression is a statistical term describing a division of observations into certain defined intervals based upon the values of the data, and the return quantile of a specific stock could show the relative magnitude of its return in comparison with the entire set of stock observations.

2. LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT

Zero Beta Model

The index model was suggested by Sharpe (1963) and Gibbons (1982). The risk is usually measured by variability between the asset's return and an appropriately defined hedging portfolio.

$$E(\tilde{R}_{it}) = \gamma_0 + \sum_{j=1}^{K} \beta_{ij}\ \gamma_j \quad \text{..... (1)}$$

i = 1, 2, 3, …, N

Where:

$E(\tilde{R}_{it})$ = expected return on the i-th security in period t;

γ_0 = risk-free rate (if it exists) or the expected return on a zero-beta portfolio.

β_{ij} = a measure (As defined by a particular model) of association between the returns on security i and the returns on a portfolio designed to hedge risk j.

N = number of securities

K = number of risks.

The b_{ij} usually are not observable. This method relies on proxies or estimates that necessarily contain measurement error.

Gibbons (1982) had formulated statistical statement for his research:

$$\tilde{R}_{it} = \alpha_i + \beta_i\, \tilde{R}_{mt} + \tilde{\eta}_{it} \quad , \quad i = 1, 2, \dots, N \quad , \quad t = 1, 2, \dots, T \quad \text{..... (2)}$$

Where:

$\tilde{R}_{it}$ = return on asset i in period t

$\tilde{R}_{mt}$ = return on the market portfolio in period t

$\beta_i = \frac{cov(\tilde{R}_{it}, \tilde{R}_{mt})}{var(\tilde{R}_{mt})}$

$\tilde{\eta}_i$ = a random disturbance

Them we can transform equation (2) into equation (3) below.

$$E(\tilde{R}_{it}) = \alpha_i + \beta_i E(\tilde{R}_{mt}) \quad \ldots\ldots (3)$$

Systematic versus Firm-Specific Risk

Focused on risk by separating the actual rate of return on any security (i) into the sum of its previously expected value plus an unanticipated surprise (Bodie et al., 2018):

$R_i = E(R_i)$ + unanticipated surprise ..... (4)

The unanticipated component of the stock return can be due either to unexpected developments in issues that are particular to the firm or to unexpected changes in conditions that affect the broad economy. The market factor (m) measures unanticipated developments in the macroeconomy. e_i measures only the firm-specific surprise. As a surprise, it has zero expected value. m and e_i are assumed to be uncorrelated because e_i is firm-specific. It is independent of shocks to the common factor that affect the entire economy. The variance of r_i thus arises from two uncorrelated sources, systematic and firm-specific. The index model can be written as the regression equation:

$R_{it} = \alpha_i + \beta_i R_{mt} + e_{it}$ ..... (5)

The intercept of this equation (α) is the security's expected excess return when the market excess return is zero. Beta (β) is the amount by which the security return tends to increase or decrease for every 1% increase or decrease in the return on the index, and therefore measures the security's sensitivity to the market index. e_i is the zero-mean, firm-specific surprise in the security return in t (residual).

The model is merely a way to describe the typical relation between market returns and returns on particular firms. The beta of the market index is 1. Cyclical stocks have higher-than-average sensitivity to the broad economy and therefore have betas greater than 1. The betas of defensive stocks are less than 1.

Quantile Regression

Koenker and Bassett (1978) argued that the conventional least squares estimator might be seriously deficient in linear models with non-Gaussian errors. They introduce a new class of statistics for the linear model, which is named "regression quantiles" since it appears to have analogous properties to the ordinary sample quantiles of the location model. Natural

generalizations based on regression quantiles of linear combinations of sample quantiles and trimmed means which appear to have promising robustness properties, are then proposed for the general linear model.

The quantile regression technique is a very powerful tool in uncovering heteroskedasticity in a regression model (Atkins and Ng, 2014). Using quantile regression for the CAPM model with n observations, the individual return (R_{it}) and the market return (R_{mt}) for t = 1, 2, …, n, the t-th quantile regression coefficients, $\hat{\alpha}_\tau$ and $\hat{\beta}_\tau$ minimize the following objective function:

$$\sum_{t:\, R_{it}-\hat{\alpha}_\tau-\hat{\beta}_\tau R_{mt}\geq 0}\tau\left|R_{it}-\hat{\alpha}_\tau-\hat{\beta}_\tau\right| \; + \sum_{t:\, R_{it}-\hat{\alpha}_\tau-\hat{\beta}_\tau R_{mt}<0}(1-\tau)\left|R_{it}-\hat{\alpha}_\tau-\hat{\beta}_\tau\right| \quad \ldots\ldots\ldots (6)$$

where $0 < \tau < 1$ determines the desired conditional quantile of interest.

3. DATA AND METHODS

The weekly data are used to measure the return and the systematic risk (β). The data are processed using Ordinary Least Square (OLS) Regression and Quantile Regression (QR) using Gretl software.

The individual stock return is counted by:

$$R_t = \frac{P_t - P_{t-1} + D_t}{P_{t-1}} \quad \ldots\ldots\ldots (7)$$

Where:

R_t = the stock return at t period
P_t = the stock price at t period
D_t = the dividend at t period

The market return is counted by:

$$R\_IHSG_t = \frac{IHSG_t - IHSG_{t-1}}{IHSG_{t-1}} \quad \ldots\ldots\ldots (8)$$

Where:

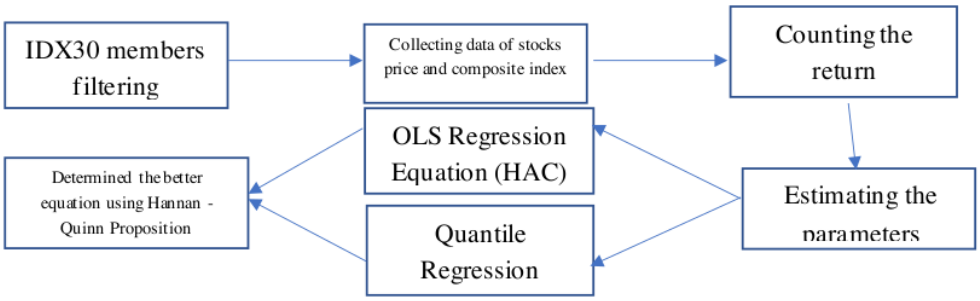
$IHSG_t$ = the composite index return at t period
$IHSG_t$ = the composite index value at t period

The equation model:

$$R_{\_stock\ code,t} = \alpha_{stock\ code,t} + \beta_{stock\ code,t} R_{\_IHSG,t} + e_{it} \quad \ldots\ldots\ldots (9)$$

The beta, the regressor parameters and error term are estimated using Gretl statistical software.

The research framework:



HAC covariance estimation provides a statistically valid way to use least squares when the data are also autocorrelated. Standard errors will be robust with respect to both heteroskedasticity and autocorrelation. This estimator abbreviation is HAC, which stands for heteroskedasticity autocorrelated consistent (Adkins, 2018). The significant level of p-value in this research are 0.05 and 0.01 for estimated parameters.

The Hannan-Quinn criteria are used to determine the best equation for each stock return equation. Suzuki (2012) proved that the Hannan-Quinn proposition is true for linear regression and autoregression, consistent with Hannan and Quinn (1979). The equations compared by Hannan-Quinn value, which has the smallest value, were chosen.

Table 1. Sample

Number	Stocks Code	Name
1	ADRO	Adaro Energy Tbk.
2	ANTM	Aneka Tambang Tbk.
3	ASII	Astra International Tbk.
4	BBCA	Bank Central Asia Tbk.
5	BBNI	Bank Negara Indonesia (Persero) Tbk.
6	BBRI	Bank Rakyat Indonesia (Persero) Tbk.
7	BBTN	Bank Tabungan Negara (Persero) Tbk.
8	BMRI	Bank Mandiri (Persero) Tbk.
9	CPIN	Charoen Pokphand Indonesia Tbk.
10	GGRM	Gudang Garam Tbk.
11	HMSP	H.M. Sampoerna Tbk.
12	ICBP	Indofood CBP Sukses Makmur Tbk.
13	INDF	Indofood Sukses Makmur Tbk.
14	INKP	Indah Kiat Pulp & Paper Tbk.
15	INTP	Indocement Tunggal Prakarsa Tbk.
16	KLBF	Kalbe Farma Tbk.
17	MNCN	Media Nusantara Citra Tbk.
18	PGAS	Perusahaan Gas Negara Tbk.
19	PTBA	Bukit Asam Tbk.
20	SMGR	Semen Indonesia (Persero) Tbk.
21	TLKM	Telekomunikasi Indonesia (Persero) Tbk.
22	UNTR	United Tractors Tbk.
23	UNVR	Unilever Indonesia Tbk.

Source: Author computation.

4. RESULTS

Data highlighted in yellow indicates the lowest value of Hannan-Queen criteria for each stock return equation.

Table 2. Ordinary Least Square and Quantile Regression Results

	R_IHSG										
	Ordinary Least Square (OLS) with HAC					Quantile Regression (QR) with HAC					
Stock Return Code	const	p-value	Beta	p-value	Hannan-Quinn	tau (τ)	const	p-value	Beta	p-value	Hannan-Quinn
R_ADRO	0.0031	0.5891	1.5386	<0.0001	-228.3164	0.05	-0.0787	<0.0001	1.914	<0.0001	-201.2328
						0.25	-0.0219	0.0104	1.321	<0.0001	-232.6358
						0.5	-0.0017	0.7653	1.048	<0.0001	-238.8773
						0.75	0.0271	0.0123	1.124	0.0005	-210.8686
						0.95	0.0886	0.0011	1.315	<0.0001	-139.6188

	R_IHSG										
	Ordinary Least Square (OLS) with HAC					Quantile Regression (QR) with HAC					
Stock Return Code	const	p-value	Beta	p-value	Hannan-Quinn	tau (τ)	const	p-value	Beta	p-value	Hannan-Quinn
R_ANTM	0.0202	0.0224	2.2618	<0.0001	-170.8386	0.05	-0.0749	0.0008	2.188	<0.0001	-147.0449
						0.25	-0.0274	0.0165	2.07	<0.0001	-181.794
						0.5	0.0058	0.4648	1.884	<0.0001	-183.0573
						0.75	0.0493	0.0181	2.162	<0.0001	-143.345
						0.95	0.1590	<0.0001	2.726	<0.0001	-85.0229
R_ASII	-0.0025	0.5753	1.3339	<0.0001	-279.9958	0.05	-0.0637	<0.0001	1.146	<0.0001	-251.3098
						0.25	-0.0250	0.0002	1.249	<0.0001	-283.492
						0.5	-0.0054	0.2121	1.313	<0.0001	-286.5111
						0.75	0.0154	0.0712	1.398	<0.0001	-262.5116
						0.95	0.0592	<0.0001	1.806	0.0014	-195.2404
R_BBCA	-0.0010	0.6960	1.0814	<0.0001	-338.6775	0.05	-0.0388	0.0004	1.252	<0.0001	-266.5675
						0.25	-0.0161	<0.0001	0.911	<0.0001	-335.8155
						0.5	-0.0004	0.8987	0.956	<0.0001	-339.3471
						0.75	0.0118	0.0162	1.071	<0.0001	-325.8557
						0.95	0.0481	<0.0001	1.332	<0.0001	-291.5594
R_BBNI	-0.0039	0.3514	1.7357	<0.0001	-281.3187	0.05	-0.057	0.0006	1.833	0.0009	-212.5336
						0.25	-0.0285	<0.0001	1.702	<0.0001	-276.5216
						0.5	-0.0073	0.1677	1.559	<0.0001	-280.7184
						0.75	0.0145	0.0547	1.844	<0.0001	-259.9036
						0.95	0.0588	<0.0001	1.583	<0.0001	-223.1379
R_BBRI	-0.0009	0.8260	1.4509	<0.0001	-271.842	0.05	-0.0589	0.0031	1.898	0.0135	-200.9607
						0.25	-0.0195	0.0004	1.55	<0.0001	-270.9243
						0.5	-0.0027	0.5581	1.584	<0.0001	-284.4970
						0.75	0.0183	0.0273	1.299	<0.0001	-264.7477
						0.95	0.0600	0.0003	1.231	<0.0001	-189.4551
R_BBTN	-0.0020	0.7765	1.7604	<0.0001	-202.6275	0.05	-0.0915	<0.0001	1.371	<0.0001	-169.3953
						0.25	-0.0328	0.0007	1.776	<0.0001	-223.0865
						0.5	-0.0096	0.1465	1.732	<0.0001	-225.2635
						0.75	0.0243	0.0375	2.048	<0.0001	-196.4400
						0.95	0.1024	0.0343	2.648	<0.0001	-120.7670
R_BMRI	-0.0021	0.5931	1.3952	<0.0001	-297.8855	0.05	-0.0573	<0.0001	1.655	<0.0001	-237.2002
						0.25	-0.0214	0.0006	1.4530	<0.0001	-288.2377
						0.5	0.0022	0.5969	1.262	<0.0001	-302.3740
						0.75	0.014	0.0065	1.23	<0.0001	-289.9447
						0.95	0.0500	0.0001	1.058	0.0094	-232.4493
R_CPIN	0.0008	0.8736	1.4286	<0.0001	-247.2233	0.05	-0.0573	<0.0001	1.297	<0.0001	-231.2286
						0.25	-0.0290	<0.0001	1.198	<0.0001	-257.7769
						0.5	-0.0039	0.5173	1.516	<0.0001	-250.2733
						0.75	0.0264	0.0039	1.674	<0.0001	-227.2446

	R_IHSG										
	Ordinary Least Square (OLS) with HAC					Quantile Regression (QR) with HAC					
Stock Return Code	const	p-value	Beta	p-value	Hannan-Quinn	tau (τ)	const	p-value	Beta	p-value	Hannan-Quinn
						0.95	0.0726	0.0104	1.801	0.0504	-149.8169
						0.05	-0.0883	0.0001	0.36	0.0777	-185.5474
						0.25	-0.0298	<0.0001	0.9040	<0.0001	-253.8087
R_GGRM	-0.005	0.4267	0.8795	<0.0001	-231.3622	0.5	-0.0136	0.0067	0.892	<0.0001	-256.9441
						0.75	0.0138	0.0879	1.207	<0.0001	-217.3999
						0.95	0.1025	0.0334	0.145	0.9391	-121.4278
						0.05	-0.0845	<0.0001	0.412	0.2499	-215.2878
						0.25	-0.0304	<0.0001	1.026	<0.0001	-249.8039
R_HMSP	-0.0064	0.1552	1.0001	<0.0001	-247.7344	0.5	-0.0103	0.0355	1.013	<0.0001	-255.0554
						0.75	0.0116	0.2773	0.99	0.0007	-230.0337
						0.95	0.0851	0.0001	1.497	0.0047	-161.2412
						0.05	-0.0482	0.1096	0.923	<0.0001	-205.6694
						0.25	-0.0233	<0.0001	0.487	0.0173	-280.7307
R_ICBP	-0.0037	0.3288	0.5939	0.0040	-281.4556	0.5	-0.0037	0.3645	0.509	<0.0001	-298.3583
						0.75	0.0126	0.0556	0.74	0.0015	-283.4656
						0.95	0.0539	0.0015	0.48	0.4000	-225.6672
						0.05	-0.0489	0.0086	0.661	0.0510	-224.5401
						0.25	-0.0298	<0.0001	0.823	<0.0001	-279.2667
R_INDF	-0.0023	0.5957	0.8017	<0.0001	-278.6546	0.5	-0.0012	0.8303	0.669	0.0004	-279.1109
						0.75	0.0176	0.0118	0.565	<0.0001	-262.8973
						0.95	0.0651	<0.0001	1.007	<0.0001	-216.8761
						0.05	-0.0874	<0.0001	2.123	<0.0001	-189.9449
						0.25	-0.0429	<0.0001	1.714	<0.0001	-203.9722
R_INKP	0.0026	0.7308	1.9585	<0.0001	-209.3920	0.5	-0.0091	0.3875	1.94	<0.0001	-201.8706
						0.75	0.0427	0.0003	2.103	<0.0001	-186.4326
						0.95	0.1168	<0.0001	1.765	0.0001	-135.1061
						0.05	-0.0858	0.0004	1.006	0.2028	-179.7697
						0.25	-0.0309	<0.0001	1.407	<0.0001	-265.3902
R_INTP	-0.0062	0.1334	1.3577	<0.0001	-258.6913	0.5	-0.0122	0.0132	1.43	<0.0001	-270.1446
						0.75	0.0100	0.2871	1.523	<0.0001	-238.9458
						0.95	0.0752	<0.0001	1.046	0.0147	-192.9738
						0.05	-0.0586	<0.0001	0.886	0.0361	-239.4645
						0.25	-0.0345	<0.0001	0.903	0.0005	-263.8976
R_KLBF	-0.0007	0.8770	0.8551	<0.0001	-249.2072	0.5	-0.0060	0.3311	0.438	0.0420	-261.4990
						0.75	0.0214	0.0132	0.6710	0.0036	-230.6418
						0.95	0.0794	0.0510	0.975	0.0007	-155.0059
						0.05	-0.0744	<0.0001	1.2300	<0.0001	-207.6212
R_MNCN	-0.0074	0.0974	1.4330	<0.0001	-221.4045	0.25	-0.0462	<0.0001	1.157	<0.0001	-234.7636
						0.5	-0.0186	0.0194	1.231	<0.0001	-223.4886

	R_IHSG										
	Ordinary Least Square (OLS) with HAC					Quantile Regression (QR) with HAC					
Stock Return Code	const	p-value	Beta	p-value	Hannan-Quinn	tau (τ)	const	p-value	Beta	p-value	Hannan-Quinn
						0.75	0.0196	0.1768	1.461	<0.0001	-193.8353
						0.95	0.0989	<0.0001	1.904	<0.0001	-136.1041
R_PGAS	-0.0031	0.5162	2.1196	<0.0001	-246.9444	0.05	-0.0750	<0.0001	1.827	<0.0001	-196.0542
						0.25	-0.0302	0.0009	2.244	<0.0001	-232.9481
						0.5	-0.0002	0.9751	2.001	<0.0001	-246.8816
						0.75	0.0275	0.0001	2.192	<0.0001	-236.7972
						0.95	0.0756	0.0005	2.523	<0.0001	-181.9845
R_PTBA	0.0024	0.6047	1.1399	<0.0001	-263.4683	0.05	-0.0591	<0.0001	1.041	0.0213	-218.1104
						0.25	-0.0275	<0.0001	1.06	<0.0001	-255.5568
						0.5	0.0013	0.8115	0.984	<0.0001	-268.5046
						0.75	0.023	0.0087	1.282	<0.0001	-245.8463
						0.95	0.0827	<0.0001	1.31	0.0166	-182.1851
R_SMGR	-0.0043	0.4125	1.4424	<0.0001	-227.5511	0.05	-0.0833	0.0357	1.615	0.1804	-159.2543
						0.25	-0.0343	<0.0001	1.322	<0.0001	-228.9389
						0.5	-0.0094	0.0807	1.582	<0.0001	-239.7506
						0.75	0.0181	0.1175	1.541	0.0002	-215.5318
						0.95	0.094	0.0003	1.484	0.0852	-153.5323
R_TLKM	-0.0004	0.9062	1.1076	<0.0001	-301.4990	0.05	-0.0512	<0.0001	0.914	<0.0001	-267.1574
						0.25	-0.0183	0.0010	0.964	<0.0001	-293.2977
						0.5	-0.0044	0.3683	1.051	<0.0001	-299.0931
						0.75	0.0262	0.0003	1.102	<0.0001	-276.5277
						0.95	0.0654	<0.0001	1.345	<0.0001	-238.4684
R_UNTR	0.0023	0.6939	0.7883	<0.0001	-250.4869	0.05	-0.0659	<0.0001	1.312	0.0004	-227.113
						0.25	-0.0303	<0.0001	0.847	<0.0001	-264.6729
						0.5	-0.0075	0.2381	0.779	0.0005	-255.2508
						0.75	0.0288	0.0046	0.855	0.0068	-225.5978
						0.95	0.0928	0.0002	0.798	0.3297	-152.09
R_UNVR	-0.0070	0.1049	0.6274	<0.0001	-276.1618	0.05	-0.0709	<0.0001	0.736	0.1880	-227.8876
						0.25	-0.0325	<0.0001	0.73	0.0005	-265.3998
						0.5	-0.0083	0.1349	0.565	0.0038	-278.8342
						0.75	0.0172	0.0099	0.529	0.0106	-260.5426
						0.95	0.0761	<0.0001	0.556	0.2381	-196.2854

Source: Author computation.

The chosen equation is summarized in table 3 below:

Table 3. Regression Equation Summary

	R_IHSG						
Stock Return Code	tau (τ)	const	p-value	Beta	p-value	Hannan-Quinn	Regression Type
R_ADRO	0.5	-0.0017	0.7653	1.0476	<0.0001	-238.8773	QR
R_ANTM	0.5	0.0058	0.4648	1.8841	<0.0001	-183.0573	QR
R_ASII	0.5	-0.0054	0.2121	1.3132	<0.0001	-286.5111	QR
R_BBCA	0.5	-0.0004	0.8987	0.9564	<0.0001	-339.3471	QR
R_BBNI		-0.0039	0.3514	1.7357	<0.0001	-281.3187	OLS
R_BBRI	0.5	-0.0027	0.5581	1.5844	<0.0001	-284.4970	QR
R_BBTN	0.5	-0.0096	0.1465	1.7321	<0.0001	-225.2635	QR
R_BMRI	0.5	0.0022	0.5969	1.2617	<0.0001	-302.3740	QR
R_CPIN	0.25	-0.0290	<0.0001	1.1984	<0.0001	-257.7769	QR
R_GGRM	0.5	-0.0136	0.0067	0.8924	<0.0001	-256.9441	QR
R_HMSP	0.5	-0.0103	0.0355	1.0127	<0.0001	-255.0554	QR
R_ICBP	0.5	-0.0037	0.3645	0.5086	<0.0001	-298.3583	QR
R_INDF	0.25	-0.0298	<0.0001	0.8229	<0.0001	-279.2667	QR
R_INKP		0.0026	0.7308	1.9585	<0.0001	-209.3920	OLS
R_INTP	0.5	-0.0122	0.0132	1.4299	<0.0001	-270.1446	QR
R_KLBF	0.25	-0.0345	<0.0001	0.9032	0.0005	-263.8976	QR
R_MNCN	0.25	-0.0462	<0.0001	1.1568	<0.0001	-234.7636	QR
R_PGAS		-0.0031	0.5162	2.1196	<0.0001	-246.9444	OLS
R_PTBA	0.5	0.0013	0.8115	0.9838	<0.0001	-268.5046	QR
R_SMGR	0.5	-0.0094	0.0807	1.5818	<0.0001	-239.7506	QR
R_TLKM		-0.0004	0.9062	1.1076	<0.0001	-301.4990	OLS
R_UNTR	0.25	-0.0303	<0.0001	0.8474	<0.0001	-264.6729	QR
R_UNVR	0.5	-0.0083	0.1349	0.5646	0.0038	-278.8342	QR

Source: Author computation.

All Beta parameters have positive values and are significant at level 0.01 using weekly return data. Some constant parameters (intercept of this equation (α)) have significant values at levels 0.01 and 0.05. These results indicated the security's expected excess return when the market excess return is zero. The equations which have significant constant parameters and all from Quantile Regression are:

$$R\_CPIN = -0.0290 + 1.1984\ R\_IHSG,\ \tau = 0.25 \quad \ldots\ldots (10)$$

$$R\_GGRM = -0.0136 + 0.8924\ R\_IHSG,\ \tau = 0.50 \quad \ldots\ldots (11)$$

$$R\_HMSP = -0.0103 + 1.0127\ R\_IHSG,\ \tau = 0.50 \quad \ldots\ldots (12)$$

$$R\_INDF = -0.0298 + 0.8229\ R\_IHSG,\ \tau = 0.25 \quad \ldots\ldots (13)$$

$$R\_INTP = -0.0122 + 1.4299\ R\_IHSG\ ,\ \tau = 0.50 \quad \ldots\ldots (14)$$

$$R\_KLBF = -0.0345 + 0.9032\ R\_IHSG\ ,\ \tau = 0.25 \quad \ldots\ldots (15)$$

$$R\_MNCN = -0.0462 + 1.1568\ R\_IHSG\ ,\ \tau = 0.25 \quad \ldots\ldots (16)$$

$$R\_UNTR = -0.0303 + 0.8474\ R\_IHSG\ ,\ \tau = 0.25 \quad \ldots\ldots (17)$$

The constant parameter has a negative value indicating the stock return under pressure, excluding market return volatility. The firm which has a significant constant parameter (α) has other unknown factors. The lowest constant parameter is held by R_MNCN; the highest is R_HMSP. From Table 4, the lowest β is held by R_ICBP with $\beta = 0.5086$, and the highest β is held by R_PGAS with $\beta = 2.1196$.

Table 4. Beta Summary from The Lowest

Stock Return Code	Beta	Sub Sector
R_ICBP	0.5086	Food and Beverages
R_UNVR	0.5646	Cosmetics and Household
R_INDF	0.8229	Food and Beverages
R_UNTR	0.8474	Wholesale
R_GGRM	0.8924	Tobacco Manufacturers
R_KLBF	0.9032	Pharmaceutical
R_BBCA	0.9564	Bank
R_PTBA	0.9838	Coal Mining
R_HMSP	1.0127	Tobacco Manufacturers
R_ADRO	1.0476	Coal Mining
R_TLKM	1.1076	Telecommunication
R_MNCN	1.1568	Advertising, Printing, and Media
R_CPIN	1.1984	Animal Feed
R_BMRI	1.2617	Bank
R_ASII	1.3132	Automotive and Components
R_INTP	1.4299	Cement
R_SMGR	1.5818	Cement
R_BBRI	1.5844	Bank
R_BBTN	1.7321	Bank
R_BBNI	1.7357	Bank
R_ANTM	1.8841	Metal and Mineral Mining
R_INKP	1.9585	Pulp and Paper
R_PGAS	2.1196	Energy

Source: Author computation.

5. CONCLUSION

This study estimates the recent condition of firm systematic risk, which is listed in IDX30 from March 2020 till the end of July 2021. The equations were estimated using Ordinary Least Square and Quantile Regression. Quantile Regression method outcome is used more than Ordinary Least Square, after filtering by Hannan-Quinn criteria. The single index model has practically benefited from its simplicity.

Some return of the stock equation has a significant constant parameter (α), and all have a negative value. The negative value indicates the stock's return is affected by an unsystematic risk, which is unique for each firm. In the pandemic era nowadays, the management decision is very important to make sustainable earnings. The controllable risk should be managed effectively.

Practically, this research can give a description of systematic risk from IDX30 stock members. Investors can be aware of the market volatility which affects the stock's return. The higher value of beta of a stock's return could lead to higher capital losses in the downward market.

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