Democracy, economic growth, and income inequality: Evidence from province level data

by Unmer JURNAL KEU

Cogent Economics & Finance

ISSN: (Print) (Online) Journal homepage: https://www.tandfonline.com/loi/oaef20

Democracy, economic growth, and income inequality: Evidence from province level data

Irwan Trinugroho, Aldy Fariz Achsanta, Putra Pamungkas, Nugroho Saputro & Sari Yuniarti

To cite this article: Irwan Trinugroho, Aldy Fariz Achsanta, Putra Pamungkas, Nugroho Saputro & Sari Yuniarti (2023) Democracy, economic growth, and income inequality: Evidence from province level data, Cogent Economics & Finance, 11:1, 2220244, DOI: 10.1080/23322039.2023.2220244

To link to this article: https://doi.org/10.1080/23322039.2023.2220244

Published online: 01 Jun 2023.

Trinugroho et al., *Cogent Economics & Finance* (2023), 11: 2220244
https://doi.org/10.1080/23322039.2023.2220244

Received: 14 August 2022
Accepted: 26 May 2023

*Corresponding author: Irwan Trinugroho, Faculty of Economics and Business, Universitas Sebelas Maret, Jl. Ir. Sutami 36A, Surakarta, Indonesia
E-mail: irwan_t@staff.uns.ac.id

Reviewing editor:
Aviral Tiwari, Finance and Economics, Rajagiri Business School, India

Additional information is available at the end of the article

DEVELOPMENT ECONOMICS | LETTER

Democracy, economic growth, and income inequality: Evidence from province level data

Irwan Trinugroho[1,2]*, Aldy Fariz Achsanta[1,2], Putra Pamungkas[1,2], Nugroho Saputro[1,2] and Sari Yuniarti[3]

Abstract: Democracy is an essential aspect in national-level governance to safeguard human rights and provide equal distribution of wealth among citizens that are also expected to bolster more rapid economic growth. However, the extant literatures show mixed result in providing evidence of how democracy will impact economic growth. In this paper, we, therefore, empirically examine the impact of democracy on economic growth and income inequality at the regional level by studying provinces in Indonesia. A panel data estimation is employed with 335 province-year observations to test our empirical model covering 34 provinces. We find that overall democracy is a detrimental factor to regional economic growth as higher level of democracy needs substantial cost to finance. However, our study reveals that democracy help reduce inequality across provinces as it may open up the possibilities to get more education for marginalized people which then implies for higher income for those people. Several policy implications are discussed.

Subjects: Development Studies; Economics and Development; Development Economics

Keywords: democracy; economic growth; income inequality; province; indonesia

1. Introduction

Democracy has been an important issue in governance mechanism, particularly to the government in ensuring accountability and reducing any potential misuse of power. A democratic government allows public scrutiny of government projects, reducing any potential misconduct. Although that democratic government is beneficial to the public, the impact of democracy on economic growth still varies across previous empirical studies. A strand of the literature finds the positive impact of democracy on growth (Benhabib et al., 2013; Knutsen, 2011; Narayan et al., 2011; Rock, 2009; Salahodjaev, 2015). Furthermore (Knutsen, 2013), finds that democracy is positively associated with economic growth when examining the presence of democracy in sub-Saharan Africa. Moreover, the effect of democracy on economic growth is stronger for countries with weak capacities. Democracy in a country with weak capacity helps the government to better manage government policy, including tax collection and public services.

On the other hand, previous empirical research also shows that democracy does not directly affect economic growth, but indirectly through several channels, such as human capital, inflation, political stability, and economic freedoms (Doucouliagos & Ulubaşoğlu, 2008). Another strand of the literature shows negative effect of democracy on economic growth (Alesina & Perotti, 1996; Benhabib et al., 2013; Tavares & Wacziarg, 2001). Democratic countries are more likely to be

https://doi.org/10.1080/23322039.2023.2220244

responsive to the demands of the poor. Hence, the government responded by providing more access to education. The democratic government also shapes the income distribution between capital and labor to be more favorable for the labor. By facilitating freedom of association, democracy has provided more voices to labor unions in order to promote labor interests. Thus, it allows labor wages to increase but at the cost of the return on capital. The reduced return on investment (ROI) ultimately gives lesser incentive for the capital to enter the democratic country. Therefore, the effect of democracy on economic growth and income inequality is still an important area to discuss.

To the best of our knowledge, this is the first study on the democracy-growth-inequality nexus conducted at provincial level in transitional economies. Indeed, previous studies have examined democracy's impact on growth and income inequality (e.g., Ahmad & Nayan, 2019; Ahmad, 2017; Balcázar, 2016; Papaioannou et al., 2008; Tarverdi et al., 2019; Zecca & Nicolli, 2021); however, the evidence is provided on country level. The development of democracy could vary across provinces in transitional economies leading to higher economic disparities between provinces. Hence we focus on Indonesia to conduct a thorough analysis examining the impact of democracy on economic growth and income inequality due to several reasons. First, Indonesia offers a unique setting regarding governance. During the reformation era or post-Soeharto regime, the government adopts a decentralization policy. This gives liberty for local government to allocate their budget independently. Therefore, the level of democracy could vary across provinces in Indonesia.

Secondly, using the provincial level, we are able to examine the impact of democracy on local government. This impact may be different with the central government, where scrutiny from the press and judiciary authorities is more common. Local government is less visible to press and judiciary authorities; therefore, they might have more opportunities to misuse the power compared to the central government (Cheung et al., 2010). Thirdly although the index on average shows a good level of democracy, there are still significant differences due to the development. Most likely, provinces in Java have higher democracy index compared to provinces outside Java due to the concentration of development before.

We use a combined dataset from Indonesia Statistics Office (BPS), Bank Indonesia, and the Indonesia Financial Services Authority (OJK). We obtain 335 province-year observations for the period 2010–2020. The democracy index is measured by several factors, such as freedom of association; police and military brutality; religious and domestic violence; freedom of religion; discrimination against minorities and disabilities; and the obstruction of voting right.

Our finding shows that democracy is negatively associated with economic growth and income inequality implying that democratic province is more responsive to the demands of the poor, providing education to the marginalized people at the cost of physical capital accumulation due to raising wages. Hence democracy narrows the income equality gap but at the same time reduces the capital income reducing the incentive for the private sector.

This paper, therefore, has several contributions to the literature. First, it contributes to the literature by providing evidence on democracy and economic growth nexus in the context of an emerging economy with higher reliant on labor-intensive industry after the decentralization policy was enacted (Alesina & Perotti, 1996; Bjørnskov, 2010; Tarverdi et al., 2019; Yang, 2008; Zecca & Nicolli, 2021). Secondly, it contributes to the literature on politics and democracy by examining the role of politics and democracy (Aisen & Veiga, 2013; Fidrmuc, 2003; Przeworski & Limongi, 1994). Our findings, therefore, are of interest to policymakers in countries that exert to bolster their economies with the presence of democracy.

The rest of the paper is structured as follows. Section 2 presents the literature review. Section 3 describes our sample and defines our variable of interest, including employed methodology.

Section 4 presents empirical results. Section 5 presents the robustness check. Section 6 concludes the paper.

2. Literature review

There are three mechanisms by which democracy could reshape the distribution of income: (1) Median voter theory, which explains that higher taxation for the rich people is more likely to be chosen by the median voters based on their rational choice of redistribution if the median income is under the mean income. (2) Political participation mechanism, which argues that the presence of democracy will lower the cost of political participation, providing broader opportunity and strengthen the influence of labor unions, and later political parties and interest group who represent the low and middle-income groups. (3) Political competition mechanism, which argues that politicians are competing for citizen support by adopting more populist and redistributive policies, such as welfare spending, improving access to education, healthcare, and many other similar policies to meet the needs of low and middle-income which normally represent the larger segments of voters (Acemoglu et al., 2015; Ahmad & Nayan, 2019; Ahmad, 2017; Balcázar, 2016; Reuveny & Li, 2003).

However, studies on how a country with democracy process in their government can influence a country's economic growth and manage income inequality have contrasting views in the literature. Some argue that democracy increases the transparency in economic activities that can attract investment and finally boost economic growth and reduce income inequality by expecting a more egalitarian distribution of wealth

Papaioannou et al. (2008) find that democracy has a stable positive impact on growth in the mid and long run instead of the short run in transitional economics. Although the growth seems to drop substantially during the transition periods, the trend changes after the transition period ends and stabilizes at higher level. Moreover, Rock (2009) concludes by rejecting the hypothesis that democracy slows growth and shows that democracy causes growth and investment to rise. Knutsen (2011) finds that democracy is positively associated with economic growth when examining the presence of democracy in sub-Saharan Africa. Furthermore, the effect of democracy on economic growth is stronger for countries with weak capacities. Democracy in a country with weak capacity helps the government to better manage government policy, including tax collection and public services. In line with previous study, Ghardallou (2022) findings confirm the fact that the relationship between democracy and financial development is indeed non-linear. Furthermore, results demonstrate that the level of democracy and financial system development are correlated in a U-shaped manner. Some previous empirical research shows that democracy does not directly affect economic growth, but indirectly through several channels, such as human capital, inflation, political stability, and economic freedoms (Doucouliagos & Ulubaşoğlu, 2008).

The conflicting literature shows the negative effect of democracy on economic growth. Ghardallou (2016) finds that the transition to a democratic system raises the development of the financial sector. Particularly, these positive effects occurred in the long run. However, in the short run, the author finds that the move to democracy does not impact financial outcomes. Aisen and Veiga (2013) find that higher degrees of political instability is associated with lower growth rates of GDP per capita. They also find that political instability adversely affects growth by lowering the rates of productivity growth and, to a smaller degree, physical and human capital accumulation.

Tarverdi et al. (2019), based on their results, confirm that political freedom and civil rights influence the level of governance, but this effect is found to be nonlinear. Governance is typically higher in dictatorships than in countries that are partially democratized (electoral democracies). Another strand of literature shows negative effect of democracy on economic growth (Alesina & Perotti, 1996; Benhabib et al., 2013; Tavares & Wacziarg, 2001).

3. Data and methodology

We use combined data sets from Indonesia Statistics Office (BPS), Bank Indonesia, and the Indonesia Financial Services Authority (OJK). We end up with 335 province-year observations for the period 2010–2020 to test our empirical model covering 34 provinces.

3.1. Economic growth

After the decentralization post-Soeharto regime in Indonesia, local governments obtain independence to manage their own province or city without having significant intervention from the central government, along with a reduction of support from the national budget. Hence it leads to greater reliance on locally generated revenue to sustain their local budget. The decentralization also creates an incentive for local government to reallocate resources and land for more profitable industrial sectors (e.g., manufacture, mining, and property), reducing the available land for agricultural purposes except for palm oil industries. Thus, local economic growth varies across provinces in Indonesia. We use a set of economic growth measurements, such as regional GDP, regional GDP growth, and regional GDP per capita.

3.2. Income inequality

We employ the Gini index for urban and rural to take into account income inequality variation across provinces from rural and urban areas. On average, the growth of regional GDP is 4.9%. Regarding income inequality, on average, the Gini index for urban areas is 0.373, implicating that, on average, income inequality is considered low to medium. The Gini index for rural areas is 0.316, implicating that income inequality is considerably lower in the rural area compared to urban areas. These economic growth data were taken from Indonesia Statistics Office (BPS).

3.3. Democracy index

We follow (Trinugroho et al., 2015) to employ Democracy Index (*IDI*) as our proxy of democracy as it consists of several important aspects of democracy implementations at provincial level. We obtain the index from Indonesia Statistics Office (BPS). The index consisting several measurements on democracy, including the presence of police and military brutality that hinder the freedom of association; regulations that restrict freedom of religion; discriminative regulation on disabilities; the use of violence related to religion, and obstruction of voting right. The index, on average, shows a reasonably good level of democracy, with the lowest in Sulawesi Tenggara in 2013, with the highest in DKI Jakarta in 2019.

3.4. Econometric specification

To investigate the impact of democracy on economic growth, we first test, several regression methods using both Chow test and Hausman test, in which both tests suggest fixed effect estimator. Thus, we employ panel data using fixed effect technique to estimate our empirical model as it allows us to control time-invariant omitted variables. As shown by Table 2 , we do not observe any collinearity between employed explanatory variables. Our econometric models are shown below:

$$EconomicGrowth_{it} = \beta_0 + \beta_1 IDI_{it} + \sum_m \theta_m Control_{it} + \varepsilon_{it} \quad (1)$$

$$IncomeInequality_{it} = \beta_0 + \beta_1 IDI_{it} + \sum_m \theta_m Control_{it} + \varepsilon_{it} \quad (2)$$

Where *IDI* is the Indonesian democracy index per province compiled by the Indonesian Statistics Office (BPS), we expect negative effect of democracy on the economic growth and Gini index. The democratic province will be more likely to be responsive to the demands of the poor, thus providing more resource allocation to education to promote income equality. Hence, democracy encourages

Table 1. Descriptive statistics

Variable	Definition	Obs	Mean	Std. dev.	Min	Max
RGDP	Regional GDP	371	268561.8	381245.1	14983.9	1836198.0
growth	Regional GDP growth	337	4.9	3.4	−15.8	21.8
RGDPcapita	Regional GDP per capita	303	3659205.0	2879111.0	931679.0	16600000.0
giniurban	Gini index in urban area	369	0.373	0.040	0.276	0.458
ginirural	Gini index in rural area	358	0.316	0.040	0.220	0.469
gini	province gini index	368	0.364	0.038	0.262	0.443
IDI	Indonesia democracy index	335	70.3	7.1	52.6	88.3
FDI	Foreign direct investment	374	786263.8	1220065.0	228.5	7124881.0
HDI	Human development index	371	68.6	4.5	54.5	80.8
regionsize	Province's size	371	56736.8	61495.3	664.0	319036.0
population	total population in a province	374	928745.2	2686549.0	7653.0	14700000.0

income allocation between capital and labor to be more favorable to labor by giving the union voices to promote labor interests. Therefore, in more democratic province income inequality and growth should be lower compared to their less democratic counterpart.

We also employ a set of control variables in Equation (1-2). All variables are defined in Table 1 with corresponding descriptive statistics. We include Foreign Direct Investment (*FDI*) to account for foreign capital influx contribution to the local economy and expect positive signs in affecting the local economic growth and positive sign in affecting the Gini index. Although the influx of foreign capital to the province could boost the local economy, it is more likely that this capital to be concentrated in Industries rather than SMEs and widen the income gap. We also employ the human development index (*HDI*) to take into account the quality of human resources and expect positive signs of economic growth and negative sign of the Gini index. The more developed the human resources in a province will increase the job qualification and the ability to have a better job, thus reducing the income gap. We also include the region size to account for the availability of the resources and land (*regionsize*) to facilitate the growth and expect positive signs to economic growth and negative sign to the Gini index. Lastly, we include the total population (*population*) and expect positive signs to economic growth and the Gini index.

4. Empirical result

Our results, as shown in Table 3 indicates that democracy is instead detrimental to economic growth. On the other hand, it is negatively associated with income inequality. Furthermore, a high level of democracy in a province allows the freedom of association, which could strengthen the labor union that facilitates labor to pursue their worker's right better (Ahmad & Nayan, 2019; Ahmad, 2017). Hence, the distribution of the income between capital and labor in democracy will favor more on labor instead of capital, resulting in the price of labor in provinces with a high level of democracy being more likely to be higher compared to their less democratic counterpart. Our

Table 2. Correlation matrix

	RGDP	growth	RGDPcapita	giniurban	ginirural	gini	IDI	FDI	HDI	regionsize	population
RGDP	1										
growth	−.0725	1									
RGDPcapita	.159	−0.2218	1								
giniurban	.1908	0.1834	−.2608	1							
ginirural	−.1116	0.0602	−.0792	0.3865	1						
gini	.1326	0.1018	−.1096	0.7354	0.7695	1					
IDI	−.0946	−0.0261	.1176	0.0201	−0.1336	−0.0911	1				
FDI	.7278	−0.018	.1373	0.1978	−0.1223	0.2167	−0.0414	1			
HDI	.2217	−0.0229	.3409	0.136	−0.2823	−0.069	0.4598	0.1259	1		
regionsize	−.001	−0.2252	.3387	−0.2513	0.168	0.0302	−0.1559	0.1159	−0.4224	1	
population	.1406	−0.1236	.0437	0.1744	−0.2428	−0.2842	−0.1757	0.005	0.1378	0.044	1

Table 3. Baseline regression

	(1)	(2)	(3)	(4)	(5)	(6)
	RGDP	**growth**	**RGDPcapita**	**gini**	**ginirural**	**giniurban**
IDI	-.0112*	−0.0686**	-.00882**	−0.000818**	−0.000760**	−0.000292
	(−1.85)	(−2.40)	(−2.23)	(−2.57)	(−2.25)	(−0.80)
lnFDI	.351***	0.189*	.0579***	0.00444***	−0.00237*	0.00499***
	(15.38)	(1.75)	(3.83)	(3.33)	(−1.85)	(3.81)
HDI	.0663***	−0.155***	.0953***	0.000429	−0.000779	−0.000138
	(6.37)	(−2.60)	(1.01)	(0.59)	(−1.27)	(−0.20)
regionsize	.000000648	−0.0000154***	.00000458***	−4.09e-08	9.79e-08***	−0.000000225***
	(1.16)	(−2.69)	(12.11)	(−1.02)	(2.76)	(−5.98)
lnpopulation	.219***	−0.253***	-.0376***	−0.00539***	−0.00548***	−0.00190*
	(11.03)	(−3.17)	(−2.73)	(−5.66)	(−5.44)	(−1.71)
_cons	1.164*	21.73***	8.497***	0.402***	0.508***	0.377***
	(1.83)	(6.19)	(15.39)	(10.53)	(12.96)	(10.02)
N	335	335	301	334	325	335
N_g	34	34	34	34	34	34
r2	.710	0.113	.541	0.0922	0.173	0.120

Note: *t* statistics in parentheses
*$p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table 4. Excluding capital Jakarta

	(1)	(2)	(3)	(4)	(5)	(6)
	RGDP	**growth**	**RGDPcapita**	**gini**	**ginirural**	**giniurban**
IDI	−.0125**	−0.0675**	−.00992**	−0.000879***	−0.000760**	−0.000312
	(−2.06)	(−2.31)	(−2.50)	(−2.75)	(−2.25)	(−0.84)
lnFDI	.331***	0.152	.0398***	0.00360***	−0.00237*	0.00471***
	(14.16)	(1.38)	(3.09)	(2.65)	(−1.85)	(3.56)
HDI	.0534***	−0.175***	.0836***	−0.0000867	−0.000779	−0.000337
	(5.12)	(−2.81)	(8.67)	(−0.11)	(−1.27)	(−0.45)
regionsize	.000000809	−0.0000150***	.00000472***	−3.39e-08	9.79e-08***	−0.000000223***
	(1.40)	(−2.60)	(12.09)	(−0.89)	(2.76)	(−5.92)
lnpopulation	.229***	−0.235***	−.0287**	−0.00501***	−0.00548***	−0.00175
	(11.66)	(−2.94)	(−2.03)	(−5.23)	(−5.44)	(−1.56)
_cons	2.238***	23.20***	9.458***	0.446***	0.508***	0.393***
	(3.56)	(6.10)	(17.38)	(10.75)	(12.96)	(9.43)
N	325	325	292	324	325	325
N_g	34	34	34	34	34	34
r2	.688	0.117	.487	0.0870	0.173	0.105

Note: t statistics in parentheses
*$p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table 5. Excluding provinces in java Island

	(1)	(2)	(3)	(4)	(5)	(6)
	RGDP	**growth**	**RGDPcapita**	**gini**	**ginirural**	**giniurban**
IDI	−.00621	−0.0663**	−.0117***	−0.000905***	−0.000935**	−0.000379
	(−1.22)	(−2.01)	(−2.82)	(−2.78)	(−2.58)	(−0.94)
lnFDI	.180***	0.308	.0153	0.00423***	−0.0000695	0.00615***
	(8.33)	(1.57)	(.96)	(2.69)	(−0.04)	(3.39)
HDI	.0805***	−0.222**	.109***	−0.00230***	−0.00229***	−0.00220***
	(7.63)	(−2.57)	(13.00)	(−4.19)	(−3.80)	(−3.01)
regionsize	.00000397***	−0.0000176**	.00000511***	−3.48e-08	5.64e-08	−0.000000243***
	(7.02)	(−2.50)	(13.08)	(−1.05)	(1.45)	(−5.69)
lnpopulation	.181***	−0.196**	−.0386***	−0.00436***	−0.00519***	−0.00128
	(12.56)	(−2.41)	(−2.81)	(−5.16)	(−5.36)	(−1.22)
_cons	1.994***	24.14***	8.301***	0.577***	0.592***	0.498***
	(3.50)	(5.03)	(15.56)	(17.66)	(14.92)	(12.18)
N	275	275	247	274	275	275
r2	.694	0.120	.562	0.180	0.222	0.101

Note: *t* statistics in parentheses
*$p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

results are in line with (Alesina & Perotti, 1996; Benhabib et al., 2013; Tavares & Wacziarg, 2001), which find that democracy instead has a negative impact on economic growth.

Moreover, this negative growth effect of democracy is also driven by the strong connection between the regional government and labor-intensive industry. In the post-reformation period, the enactment of the decentralization policy provides more liberty and self-determination to the regional government to develop and manage its own budget. However, the decentralization policy also reduces regional dependency on the state government, including budget allocation from the state forcing them to generate their own profit from regional taxes. Hence, many regions are forced to reduce their agriculture area to be able to provide and invite more labor-intensive industries that pay more taxes. This indeed shifts these regions to be more reliant on labor-intensive industries. Hence, going hand in hand with the development of democracy in the regional context, labor-intensive industries start facing challenges in dealing with labor unions regarding minimum wages, workers' rights, and working hours.

We find the strong result on FDI to economic growth and the Gini index implicating that the foreign capital influx into local economy could promote the local economic growth but at the same time widen the gap of income amongst local citizens. A plausible explanation for this is that FDIs allocation in Indonesia is concentrated in industry that exploits natural resources or industry that require more advance education, thus the job market is limited to local citizens and contributes less to the growth of the economy in hosting province and increases income inequality. We find consistent results with HDI on economic growth, we do not observe any significant effect of HDI on income inequality. Province with high HDI will be able to provide more labor with better competencies and qualifications.

We also find that the size of region is inconsistent in affecting the economic growth where it hinders the growth of GDP but increases the GDP per capita. We also observe mix result on the impact of region size on income inequality, where it has positive effect on inequality only for rural areas and negative effect on inequality in urban areas, indicating that there is a lack of efficiency in resource allocation in rural areas. Lastly, we find that the total population is reducing the growth and GDP per capita while also promoting income equality at the same time.

5. Robustness check

We run robustness checks to ensure that our result is robust and are not driven only by specific province. First, we exclude Jakarta from our sample and re-run our econometric models. As Jakarta is the capital city, the development is more advanced there compared to any other province in Indonesia. After excluding Jakarta, we still find similar results shown in Table 4 with our baseline regression. We also exclude provinces in Java as most provinces in Java are more developed compared to the rest of provinces in Indonesia. Also, Java is the most populous island in Indonesia, incentivizing the central government to provide more development there. Again, we observe similar results to our baseline regression. The results are shown in Table 5. These findings imply that our results are robust and are not driven by a specific sample.

6. Conclusion

Democratic governments are less likely to be corrupt and tend to promote equal improvement for the society leading to lower income inequality and are deemed to be able to promote economic growth. However, even in democratic governments, politicians tend to be more sensitive toward people needs and embrace populism to maintain voters to be able to remain in power. With the guaranteed freedom of speech and expression, labor union can easily gain influence over policies as long as the political cost of losing union voters outweighs the political and social cost of populism. This led to stronger union voices on raising wages and minimizing working hours, which is detrimental to firms' profitability and, in turn, hinders regional economic growth

Using the Indonesian dataset on the provincial level for the period 2010–2020, we examine the impact of democracy on economic growth and income inequality. The country experienced governance transformation after decentralization in the post-reformation era when many regions in Indonesia were forced to be less reliance on state budget allocation giving the incentives for them to sustain and increase their budget by maximizing tax via shifting from agriculture reliance to industry reliance that is more likely to be labor intensive. With this shifting trend, the regional government can pursue several different goals at the same time, where the regional government pursues to maximize their tax income while providing more job opportunities. These goals, thus, further strengthen regional government and labor-intensive industries. Hence, any policies related to raising minimum wages and fewer working hours from labor unions, which is facilitated by democracy will lead to growth reduction.

Our findings show democracy is instead detrimental to regional growth while, on the other hand, promoting income equality. A province with a high level of democracy is more likely to be responsive to the needs of the poor by expanding access to education that promotes equality among people and better wealth distribution. While in the other hand, democracy also fosters the voice of labor interest which, in turn, the increasing wages will lower the return on capital, thus, ultimately lowering the incentives for private investment to enter. Our findings, therefore, have important policy implications by arguing that the improvement of democracy at the regional level is important to promote equal distribution of wealth. Moreover, to be able to exert positive effect of democracy on bolstering economic growth, the development of democracy in regions that are more reliant on the labor-intensive industry has to be followed with a gradual transformation plan on industry diversification to reduce regional dependency on the labor-intensive industry.

Funding
The work was supported by the Universitas Sebelas Maret under the research grant 2021 with the contract number 260/UN27.22/HK.07.00/2021.

Author details
Irwan Trinugroho[1,2]
E-mail: irwan_t@staff.uns.ac.id
ORCID ID: http://orcid.org/0000-0003-4911-7982
Aldy Fariz Achsanta[1,2]
Putra Pamungkas[1,2]
Nugroho Saputro[1,2]
Sari Yuniarti[3]
[1] Faculty of Economics and Business, Universitas Sebelas Maret, Surakarta, Indonesia.
[2] Center for Fintech and Banking, Universitas Sebelas Maret, Surakarta, Indonesia.
[3] Faculty of Economics and Business, Universitas Merdeka, Malang, Indonesia.

Disclosure statement
No potential conflict of interest was reported by the authors.

Citation information
Cite this article as: Democracy, economic growth, and income inequality: Evidence from province level data, Irwan Trinugroho, Aldy Fariz Achsanta, Putra Pamungkas, Nugroho Saputro & Sari Yuniarti, *Cogent Economics & Finance* (2023), 11: 2220244.

References

Acemoglu, D., Naidu, S., Restrepo, P., & Robinson, J. A. (2015). Democracy, redistribution, and inequality. In *Handbook of Income Distribution* (Vol. 2, pp. 1885–1966). Elsevier B.V. https://doi.org/10.1016/B978-0-444-59429-7.00022-4

Ahmad, M. (2017). Economic freedom and income inequality: Does political regime matter? *Economies*, 5(2), 18. https://doi.org/10.3390/economies5020018

Ahmad, M., & Nayan, S. (2019). Income inequality and middle-income trap: A panel data analysis on the effects of economic freedom and democracy. *International Journal of Business and Society*, *20*(2).

Aisen, A., & Veiga, F. J. (2013). How does political instability affect economic growth? *European Journal of Political Economy*, *29*, 151–167. https://doi.org/10.1016/j.ejpoleco.2012.11.001

Alesina, A., & Perotti, R. (1996). Income distribution, political instability, and investment. *European Economic Review*, *40*(6), 1203–1228. https://doi.org/10.1016/0014-2921(95)00030-5

Balcázar, C. F. (2016). Long-run effects of democracy on income inequality in Latin America. *Journal of Economic Inequality*, *14*(3), 289–307. https://doi.org/10.1007/s10888-016-9329-3

Benhabib, J., Corvalan, A., & Spiegel, M. M. (2013). Income and democracy: Evidence from nonlinear estimations. *Economics Letters*, *118*(3), 489–492. https://doi.org/10.1016/j.econlet.2012.12.015

Bjørnskov, C. (2010). Do elites benefit from democracy and foreign aid in developing countries? *Journal of Development Economics*, *92*(2), 115–124. https://doi.org/10.1016/j.jdeveco.2009.03.001

Cheung, Y.-L., Jiang, P., Limpaphayom, P., & Lu, T. (2010). Corporate governance in China: A step forward. *European Financial Management*, *16*(1), 94–123. https://doi.org/10.1111/j.1468-036X.2008.00446.x

Doucouliagos, H., & Ulubaşoğlu, M. A. (2008). Democracy and economic growth: A meta-analysis. *American Journal of Political Science*, *52*(1), 61–83. https://doi.org/10.1111/J.1540-5907.2007.00299.X

Fidrmuc, J. (2003). Economic reform, democracy and growth during post-communist transition. *European Journal of Political Economy*, *19*(3), 583–604. https://doi.org/10.1016/S0176-2680(03)00010-7

Ghardallou, W. (2016). Does democratic transition spur financial development?". *Journal of Financial*

Economic Policy, *8*(4), 499–513. https://doi.org/10.1108/JFEP-10-2015-0063

Ghardallou, W. (2022). Financial System Development and Democracy: A Panel Smooth Transition Regression Approach for Developing Countries. *J Knowl Econ*, *13*, 1714–1735. https://doi.org/10.1007/s13132-022-00988-x

Knutsen, C. H. (2011). Which democracies prosper? Electoral rules, form of government and economic growth. *Electoral Studies*, *30*(1), 83–90. https://doi.org/10.1016/j.electstud.2010.09.006

Knutsen, C. H. (2013). Democracy, state capacity, and economic growth. *World Development*, *43*, 1–18. https://doi.org/10.1016/J.WORLDDEV.2012.10.014

Narayan, P. K., Narayan, S., & Smyth, R. (2011). Does democracy facilitate economic growth or does economic growth facilitate democracy? An empirical study of Sub-Saharan Africa. *Economic Modelling*, *28*(3), 900–910. https://doi.org/10.1016/J.ECONMOD.2010.11.004

Papaioannou, E., Siourounis, G., Caselli, F., Commander, S., Fidrmuc, J., Gromb, D., Genakos, C., Perotti, E., Persson, T., Scott, A., & Tatsiramos, K. (2008). *DEMOCRATISATION AND GROWTH*.

Przeworski, A., & Limongi, F. (1994). Political regimes and economic growth. *Desarrollo Económico*, *134*(134), 163–179. https://doi.org/10.1257/JEP.7.3.51

Reuveny, R., & Li, Q. (2003). Economic openness, democracy, and income inequality: An empirical analysis. *Comparative Political Studies*, *36*(5), 575–601. https://doi.org/10.1177/0010414003036005004

Rock, M. T. (2009). Has democracy slowed growth in Asia? *World Development*, *37*(5), 941–952. https://doi.org/10.1016/j.worlddev.2008.09.002

Salahodjaev, R. (2015). Democracy and economic growth: The role of intelligence in cross-country regressions. *Intelligence*, *50*, 228–234. https://doi.org/10.1016/J.INTELL.2015.04.013

Tarverdi, Y., Saha, S., & Campbell, N. (2019). Governance, democracy and development. *Economic Analysis & Policy*, *63*, 220–233. https://doi.org/10.1016/j.eap.2019.06.005

Tavares, J., & Wacziarg, R. (2001). How democracy affects growth. *European Economic Review*, *45*(8), 1341–1378. https://doi.org/10.1016/S0014-2921(00)00093-3

Trinugroho, I., Agusman, A., Ariefianto, M. D., Darsono, D., & Tarazi, A. (2015). Determinants of cross regional disparity in financial deepening: Evidence from Indonesian provinces. *Economics Bulletin*, *35*(2), 896–910.

Yang, B. (2008). Does democracy lower growth volatility? A dynamic panel analysis. *Journal of Macroeconomics*, *30*(1), 562–574. https://doi.org/10.1016/j.jmacro.2007.02.005

Zecca, E., & Nicolli, F. (2021). Inequality, democracy and green technological change. *Journal of Cleaner Production*, *306*, 127061. https://doi.org/10.1016/j.jclepro.2021.127061

Democracy, economic growth, and income inequality: Evidence from province level data

ORIGINALITY REPORT

18%	16%	15%	10%
SIMILARITY INDEX	INTERNET SOURCES	PUBLICATIONS	STUDENT PAPERS

PRIMARY SOURCES

1	Submitted to University of Nebraska at Omaha Student Paper	2%
2	rucforsk.ruc.dk Internet Source	2%
3	Submitted to Universitas Brawijaya Student Paper	2%
4	www.deepdyve.com Internet Source	1%
5	Submitted to University of Western Australia Student Paper	1%
6	global.oup.com Internet Source	1%
7	pure.bond.edu.au Internet Source	1%
8	www.ijem.upm.edu.my Internet Source	1%
	www.ijbs.unimas.my	

9	Internet Source	1%
10	goodwoodpub.com Internet Source	1%
11	www.emerald.com Internet Source	1%
12	Renske Doorenspleet. "Rethinking the Value of Democracy", Springer Science and Business Media LLC, 2019 Publication	1%
13	info.trilogi.ac.id Internet Source	<1%
14	Carl Henrik Knutsen. "Democracy and economic growth: A survey of arguments and results", International Area Studies Review, 2012 Publication	<1%
15	journalarticle.ukm.my Internet Source	<1%
16	uu.diva-portal.org Internet Source	<1%
17	Sisay Demissew Beyene, Mohammed Seid Ali, Belayneh Taye, Yihenew Wubu Endalew. "Questioning the democracy–growth debate in countries of the East African region: a	<1%

political economy perspective", Journal of Social and Economic Development, 2023
Publication

18	repository.unair.ac.id Internet Source	<1 %
19	so06.tci-thaijo.org Internet Source	<1 %
20	Taufiq Arifin, Aldy Fariz Achsanta, Irwan Trinugroho. "Do academics in the boardroom create value for firms?", Entrepreneurial Business and Economics Review, 2023 Publication	<1 %
21	Alamanda Alamanda. "THE EFFECT OF GOVERNMENT EXPENDITURE ON INCOME INEQUALITY AND POVERTY IN INDONESIA", INFO ARTHA, 2020 Publication	<1 %
22	Submitted to University of Wales central institutions Student Paper	<1 %
23	www.ijisae.org Internet Source	<1 %
24	"VI National and Area Studies/Etudes Nationales et Regionales", International Political Science Abstracts, 12/01/2009 Publication	<1 %

Submitted to Leiden University

25	Student Paper		<1%
26	Submitted to University of Nottingham	Student Paper	<1%
27	giapjournals.com	Internet Source	<1%
28	rgu-repository.worktribe.com	Internet Source	<1%
29	Irwan Trinugroho, Tastaftiyan Risfandy, Mochammad Doddy Ariefianto. "Competition, Diversification, and Bank Margins: Evidence from Indonesian Islamic Rural Banks", Borsa Istanbul Review, 2018	Publication	<1%
30	Luke Forau, Satish Chand. "Measuring peace using household-level data from post-conflict Solomon Islands", Conflict, Security & Development, 2016	Publication	<1%
31	panoeconomicus.org	Internet Source	<1%
32	repositorium.sdum.uminho.pt	Internet Source	<1%
33	vdoc.pub	Internet Source	<1%

34	www.eia.feaa.ugal.ro Internet Source	<1 %
35	Ali Pirannejad, Marijn Janssen, Jafar Rezaei. "Towards a balanced E-Participation Index: Integrating government and society perspectives", Government Information Quarterly, 2019 Publication	<1 %
36	Fabro, Gema, and José Aixalá. "Direct and Indirect Effects of Economic and Political Freedom on Economic Growth", Journal of Economic Issues, 2012. Publication	<1 %
37	Ragnhild Johanne Rensaa. "Assessment considerations during lockdown in Norway: An exploratory case study with focus on misconducts in university mathematics", Cogent Education, 2023 Publication	<1 %
38	ideas.repec.org Internet Source	<1 %
39	Eugene Kouassi, Sandotin Coulibaly, Oluyele Akinkugbe, Mbodja Mougoué. "The democracy income-growth nexus in the southern African development community revisited", International Journal of Finance & Economics, 2020 Publication	<1 %

Exclude quotes	Off	Exclude matches	Off
Exclude bibliography	On		

Democracy, economic growth, and income inequality: Evidence from province level data

GRADEMARK REPORT

FINAL GRADE	GENERAL COMMENTS
/0	

PAGE 1

PAGE 2

PAGE 3

PAGE 4

PAGE 5

PAGE 6

PAGE 7

PAGE 8

PAGE 9

PAGE 10

PAGE 11

PAGE 12

PAGE 13