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Does Recomposed Institutions Quality Alleviate Extreme Income Inequality?

(Adakah Kualiti Institusi yang Dikomposisi Semula Mengurangkan Ketaksamaan Pendapatan Melampau?)

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ABSTRACT

This paper aims to study the effect of recomposed institution quality to extreme income inequality. Findings reveal aggregated institutional quality of World Governance Indicators (WGI) have anomalies, distorted by its individual components' incongruent relationships with income inequality. The study covers period from 2010 to 2017 and applies quantile regression method due to rejection of normality of residuals and present of data clustering. Total of 43 countries are selected based on availability of data. WGIs do not always have negative relationship with income inequality. The recomposed WGI-plus and WGI-minus are all significant at correct sign, except insignificant for one case. These findings contribute six implications. Firstly, the WGI has subconsciously set democracy and free market as "good quality" institution, yet findings of positive relationship reveal this is not completely true. Secondly, the positive findings in control of corruption signal possible serious structural flaws regarding policies, perception, and its conceptualization. Thirdly, middle-income countries have relatively more anomalies. Fourthly, relatively more insignificant results of certain WGI components in middle-income countries cast doubt on their system of separation of power, prompting critical review of political will and governance effectiveness towards inclusiveness. Fifth, the significant results of the recomposed WGI enhance call for not aggregating all components of institution quality in future research and policy making decision. Sixth, the classic school that propagated free market is not effective to reduce inequality. Keynesian economies, especially targeted fiscal expenditure helps in middle-income but not high-income counties.

Keywords: Institutional quality; WGI; income inequality; quantile regression; anomalies
JEL: D630, I320, O170

ABSTRAK

Kajian ini mengkaji impak kualiti institusi dikomposisi semula terhadap ketaksamaan pendapatan melampau. Hasil dapatan kajian menunjukkan kualiti institusi aggregat World Governance Indicators (WGI) mempunyai anomali, disebabkan komponen-komponennya mempunyai hubungan yang berlainan dengan ketidaksamaan pendapatan. Kajian ini merangkumi tempoh dari tahun 2010 hingga 2017 dan menerapkan kaedah regresi kuantil kerana penolakan kenormalan ralat dan kehadiran pengelompokan data. Sebanyak 43 negara dipilih berdasarkan ketersediaan data. WGI tidak selalu mempunyai hubungan negatif dengan ketidaksamaan pendapatan. WGI-plus dan WGI-minus yang dikomposisi semula kesemuanya signifikan pada tanda betul, kecuali tidak signifikan untuk satu kes. Penemuan kajian ini menyumbang enam implikasi. Pertama, WGI secara tidak sedar telah menetapkan demokrasi dan pasaran bebas sebagai institusi "berkualiti baik" tetapi penemuan hubungan positif menunjukkan ini tidak sepenuhnya benar. Kedua, penemuan positif dalam pengendalian rasuah menunjukkan kelemahan struktur yang serius mengenai dasar, persepsi, dan konsepnya. Ketiga, negara berpendapatan sederhana mempunyai lebih banyak anomali. Keempat, hasil dapatan yang tidak signifikan bagi komponen WGI tertentu di negara berpendapatan sederhana menimbulkan keraguan terhadap sistem pemisahan kuasa mereka. Ini mendorong tinjauan kritikal terhadap keazaman politik dan keberkesanan pemerintahan ke arah keterangkuman. Kelima, hasil dapatan signifikan bagi WGI dikomposisi semula memperkuatkan seruan untuk tidak mengagregatkan semua komponen kualiti institusi untuk kajian masa depan dan penggubalan polisi. Keenam, sekolah klasik yang mengutamakan pasaran bebas adalah tidak berkesan untuk mengurangkan ketaksamaan. Ekonomi Keynesian, terutama perbelanjaan fiskal yang disasarkan berkesan di negara berpendapatan sederhana tetapi tidak di negara berpendapatan tinggi.

Kata kunci: Kualiti institusi; WGI; ketaksamaan pendapatan; regresi kuantil; anomaly
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INTRODUCTION

Everyone is equal before the law and equal in the eye of God but not in term of wealth. Sustainable development calls for inclusiveness, but the wealth gap remains. A reality example is in Togo, a poor nation in West Africa renowned for their cocoa production and export but its population live in poverty. Consumers of chocolate may have billions of assets and never see a real cocoa. Cocoa growers there are carrying enormous amount of debt, they will never be able to clear nor afford chocolate (Al-Jazeera 2019a & 2019b). This issue or similar situation shows huge income gap persists between the rich and the poor, both between nations and within a nation. Despite so many research and efforts to try to understand and reduce income gap, inequality is still a serious problem and reducing it is an important agenda for international institutions and local policy makers. Eradicate poverty and reduce inequality are the first Millennium Development Goals (MDG-1), World Bank's mission, and the United Nation's Sustainable Development Goals (SDG-2 and SDG-10). There are two outstanding issues. Firstly, current conceptualization and measurement of inequality are based on overall income distribution, usually proxy by Gini coefficient. These may not reflect actual situation nor the extreme inequality. Krozer (2015) questioned the extremes of the distribution where Gini value failed to capture. Aggregate values of inequality indicators do not tell the condition between the poorest and richest, and therefore shed little information for policy makers to correct extreme income inequality. Inequality indicator like Gini coefficient also may show a moderate reading which seems acceptable but actual extreme inequality is much more harmful. A good example is the Indonesia's social riot in 1997. Gini coefficient showed relatively low level of inequality but did not reflect the actual and extreme inequality there that caused the riot (Ritonga 2005). In addition, Food and Agriculture Organization of United Nation (FAO) targeting national policies to end extreme poverty in rural areas, not just aggregate poverty (De La O Campos et al. 2018). Global extreme poverty also highlighted in World Bank's Global Monitoring Report 2015/2016 (World Bank 2015). These imply a worthy research gap for researcher and policy to study on determinants of extreme income inequality, not just the aggregate, with the view to eradicate or minimize it.

Secondly, institution quality is an important determinant to income inequality but often overly generalized. Endeavor to reduce inequality need institutional efforts but institutional quality composes from various components while empirical evidence is inconclusive. Asamoah (2021: 124) listed ample literatures that blamed bad institutions for deteriorating income equality. Good institution facilitates income equality through market efficiency, social and political stability, judicial protection for the poor, and reduced political meddling and corrupt practices (Asamoah 2021 & Madni & Anwar 2020). However, Chong and Calderon (2000) found positive relationship between institution quality and inequality in developing economies while negative in developed economies. In addition, research on income inequality often use aggregated indicators and subconsciously set democracy and free market as "good" institution benchmark. Take World Bank's World Governance Indicators (WGI) as example. It has six components and expected to have negative relationship with income inequality as an aggregated index. Indeed, Asongu et al. (2020) regroup the six components into three different types of governance, namely political governance, economic governance, and institutional governance in their study of education inclusiveness. Hence, different component of institutional quality may not share same relationship with income inequality. In addition, higher "voice and accountability" and "regulatory quality" represent more democracy, which is considered good. In contrast, respected philosophies from both the West and East, such as socialism, Plato (in his book, *the Republic*) and Legalism do see the goodness in having a not so democratic institution system. Hence, institutional quality needs to be recomposed based on characteristic of its each sub-component instead of the aggregate value. These two issues inspire this paper to study the effect of recomposed institution quality to extreme income inequality. In addition, this paper also aims to investigate the anomalies of individual components of the WGI having incongruent relationship with extreme income inequality. The paper is structured as follows. Section 2 reviews related literatures, Section 3 explains the methodology, Section 4 interprets results, and Section 5 is discussion and conclusion.

LITERATURE REVIEW

Decades ago, Simon Kuznets (1955) hypothesized the inverted-U-shaped relationship that describes the relation between income growth and level of income inequality. His hypothesis received considerable attention with replication works such as Ahluwalia (1976), Oshima (1962), Robinson (1971) and Thornton (2001). There are contrasting results in different studies (see Abdallah 2010; Adams 2003; Das & Barua 1996; Deininger & Squire 1998; Shahabadi et al. 2018). Some even found inequality has positive relationship with growth or development (Elbers & Lanjouw 2001; Ogus Binatli 2012). Relationship between growth an inequality also reportedly varies according to different income level (Barro 2000; Chambers 2010; Chen 2018; Palma 2011; Stiglitz 1996). Besides growth, institutional quality is an important determinant of income inequality, especially in developing countries (Doan 2019). Common proxy for institutional quality is the Worldwide Governance Indicators (WGI) as used in Kaufmann et al. (2011).

Countries with higher institutions quality are expected to have lower inequality (Chong & Gradstein 2007; Naplava 2020) but results so far has been mixed. For instance, Chong and Calderon (2000) discovered positive relationship between institution quality and income inequality in developing countries while negative in developed countries. Law et al. (2014) found that different levels of institutional quality will affect the relationship between financial development and income inequality. Besides growth, few popular determinants of income inequality, which are also used in this research are capital formation (Akita & Lukman 1995; Armiento 2018), government debt (Luo 2019; Salotti & Trecroci 2018) and consumption (Gunasinghe et al. 2019; Kourtellos et al. 2019).

There are practical issues not reflected in official average poverty indicator but are important to achieved various United Nation's Sustainable Development Goals (SDG) (Bernard 2019; Keane & Thakur 2018; Navameul et al. 2018; Padilla-Frausto & Wallace 2015). Covid-19 pandemic is making matter worst, perhaps much more negative impact to the poorest group than the richest. A recent World Bank's (2020) research found the Covid-19 hit greatly on "the already-poor and vulnerable" groups through loss of employments and various deprivation, and worsening (extreme) income inequality. These prompt for immediate change of focus point in research and policy targeting from merely using aggregate or average indicator to focus on the extreme side of income inequality. Besides, academic research tends to be selective in choosing components to represent governance or institution quality. The WGI comprises of six components of institutional quality. Besides the aggregated WGI index, democracy, corruption, and regulatory quality are the popular choices. Ongo Nkoq and Song (2021) found each of them has negative relationship with income inequality. Li et al. (1998), Gradstein et al. (2001) and Reuveny and Li (2003) found that increases in democracy reduce the income inequality. By looking at the role of democracy in trade-inequality relation, Lin and Fu (2016) found that trade expansion decreases the income inequality in autocracies but increases income inequality in democracies. Bollen and Jackman (1985) noticed no relationship between democracy and inequality. Li et al. (2000) claimed corruption affects income inequality in an inverted-U shape but Gupta et al. (2002) and Gyimah-Brempong (2002) found positive relationship. Corruption in African countries has more deleterious effect on the income inequality compares to Asia countries (Perera & Lee 2013). Lower the level of corruption may lead to higher income inequality, for example Andres and Ramlogan-Dobson (2011) found in Latin America countries but inequality also inversely affects the corruption, legitimacy of rules and institutions (Jong-Sung & Khagram 2005). Asongu et al. (2020) found anomalies of better governance deteriorating education inclusiveness for regulatory quality and government effectiveness.

METHODOLOGY

This paper examines the effects of institutional quality on inequality over a period of eight years from 2010 to 2017. A shorter period is preferred to minimize major structural breaks like Asian financial crisis (1997/98), dotcom-bubble era (1995 – 1999), the 9-11 terrorism attack in 2001, United States' subprime crisis (2007/08), and Greek's sovereign debt crisis (2009). The World Bank's Worldwide Governance Indicator (WGI) is proxy for institutional quality. WGI is an index of equally weighted average of the six dimensions of governance, which are "Voice and Accountability (VA)", "Political Stability and Absence of Violence/Terrorism (PS)", "Government Effectiveness (GE)", "Regulatory Quality (RQ)", "Rule of Law (ROL)" and "Control of Corruption (COC)". Roles of institution quality are analysed based on its aggregate proxy (WGI) and its recomposed component. Each of the six WGI components is regressed to inequality and their respective relationship (positive and negative) is grouped and recomposed as "WGI-plus" (for positive relationship) and "WGI-minus" (for negative relationship). This paper believes not all the six components of WGI will move in tandem to relationship with inequality.

"Extreme income" refers to both higher-end and lower-end of income groups. This study uses the highest and lowest 20% of income groups respectively to form the extreme income ratio (EIR20). The ratio is derived from share of income of Top 20% divided by Bottom 20%. EIR20 of 1.00 (or 100%) indicates perfect equality between both groups, which is practically impossible. A value of higher than 1.00 is expected. Like Gini coefficient, the higher the EIR20 indicates the bigger income inequality. Conceptually, the different is that Gini coefficient measures aggregate dispersion of income gaps while EIR20 focuses on the gaps between the extreme rich and poor. The two indicators also have different philosophy implication. Policy in lowering the inequality based on reducing the aggregate dispersion (lower Gini value) is based on the philosophy of utilitarian. Policy to help least well-off group (like the B20) is the focus of EIR20 and based on Rawlsian equality approach, which indirectly may also fulfil the utilitarian equality by reducing the dispersion. Gross Domestic Product (GDP) growth, gross fixed capital formation (GFCF), central government debt (G_Debt, as percentage of GDP) and government's expenditure share (G_Share) are chosen as control determinants. All data are sourced from World Bank's World Development Indicators database except central government debt sourced from International Monetary Fund (IMF) database.

Growth and GFCF represent important component of the classic school. Classic school of thought with their classic growth theories like Solow model and Harrod-Domar model advocates the importance of fixed capital and growth, which is assumed automatically trickles down to every stakeholder. Government expenditure share implies direct involvement of government in the economy and the government-led growth hypothesis under Keynesian school perspective. Central government debt reflects constraint on fiscal policy. Total of 43 countries are selected based on availability of data (see Appendix). Those countries are further divided into "middle income countries" (19 countries) and "high-income countries" (24 countries) based on World Bank's classification. This paper applies quantile regression due to possibility of having residuals not normally distributed and present of data clustering in different quantile. Scatter plot and Shapiro-Wilk W test are used to observe data clustering and test the normality of residual respectively. Three different quantiles (0.25, 0.50 and 0.75) are tested in quantile regression with bootstrap replications. The equations for quantile regression are as follow.

$$IE_{i,t}(\tau|X_{i,t}) = \alpha_i + \alpha_{1,\tau} IQ_{i,t} + \alpha_{2,\tau} Growth_{i,t} + \alpha_{3,\tau} GFCF_{i,t} + \alpha_{4,\tau} G\_Debt_{i,t} + \alpha_{5,\tau} G\_Share_{i,t} + \beta_i \quad (1)$$

In panel quantile regression, the $\alpha(\tau)$ represents coefficient at respective quantile τ level and β_i is the unobserved individual effects. IE represents inequality and proxies by both EIR20 and Gini coefficient, while IQ represents institutional quality and proxies by WGI. GFCF and G_Debt variables are in natural logarithm form, and other variables are maintained in their original form. EIR20 and G_Share are ratio, Gini coefficient is in index form, and growth is in percentage. This paper decomposes the WGI, regresses each of its components against inequality (EIR20 and Gini), determines the coefficient of each component (positive, negative or not significant), and then re-composes the WGI into "wgiminus" and "wgiplus" of negative and positive coefficients, respectively. Any component that has combination of positive and insignificant coefficient in any of the three quantiles (25%, 50% and 75%) are taken as positive and recomposes as "wgiplus" while those with negative and insignificant are recomposes as "wgiminus". Any component that is not significant in all quantiles are excluded. Any component that has inconsistent (mixed) coefficient signs is regressed separately. This paper believes the six WGI components may be incongruent with each other in relation with inequality, hence warrants an alternative approach to decompose the aggregate and recompose them accordingly to their statistical relationship with income inequality.

RESULTS

Scatter plots of Extreme Income Ratio (EIR20) (in Y-axis) against independent variable (X-axis), including every component of WGI, are shown in Figure 1. The independent variables are not uniformly distributed along the trend line, instead, forming clustering pattern. In the lower quantile of dependent variables, the data scatter flatter across horizontal axis of all dependent variables. Shapiro-Wilk W test results as in Table 1 show normality is rejected for all variables. This further justify the use of quantile regression to analyse their relationship.

TABLE 1. Shapiro-Wilk W test for Normality

Variable	All countries	High income	Middle income
Eir20	0.8154	0.9460	0.9169
(z-value)	(8.963)***	(4.710)***	(5.173)***
Gini	0.9362	0.9732	0.9425
	(6.454)***	(3.103)***	(4.338)***
wgi_all	0.9334	0.9416	0.9241
	(6.554)***	(4.891)***	(4.969)***
growth	0.9631	0.9434	0.9534
	(5.158)***	(4.816)***	(3.863)***
lgfcf	0.9450	0.9660	0.9390
	(6.101)***	(3.647)***	(4.472)***
lgdebt	0.9855	0.9591	0.9690
	(2.953)***	(4.070)***	(2.939)***
g_share	0.9170	0.7808	0.9457
	(7.074)***	(7.926)***	(4.210)***
Observation	344	192	152

Note: *, ** and *** indicate significant at 10%, 5% and 1% level respectively. wgi_all is aggregated WGI index from all its six components, wgiminus is the negative component of WGI, wgiplus is the positive component to WGI, lgfcf is Gross Fixed Capital Formation in natural logarithm form, lgdebt is government's debt in natural logarithm form and g_share is government's expenditure share.

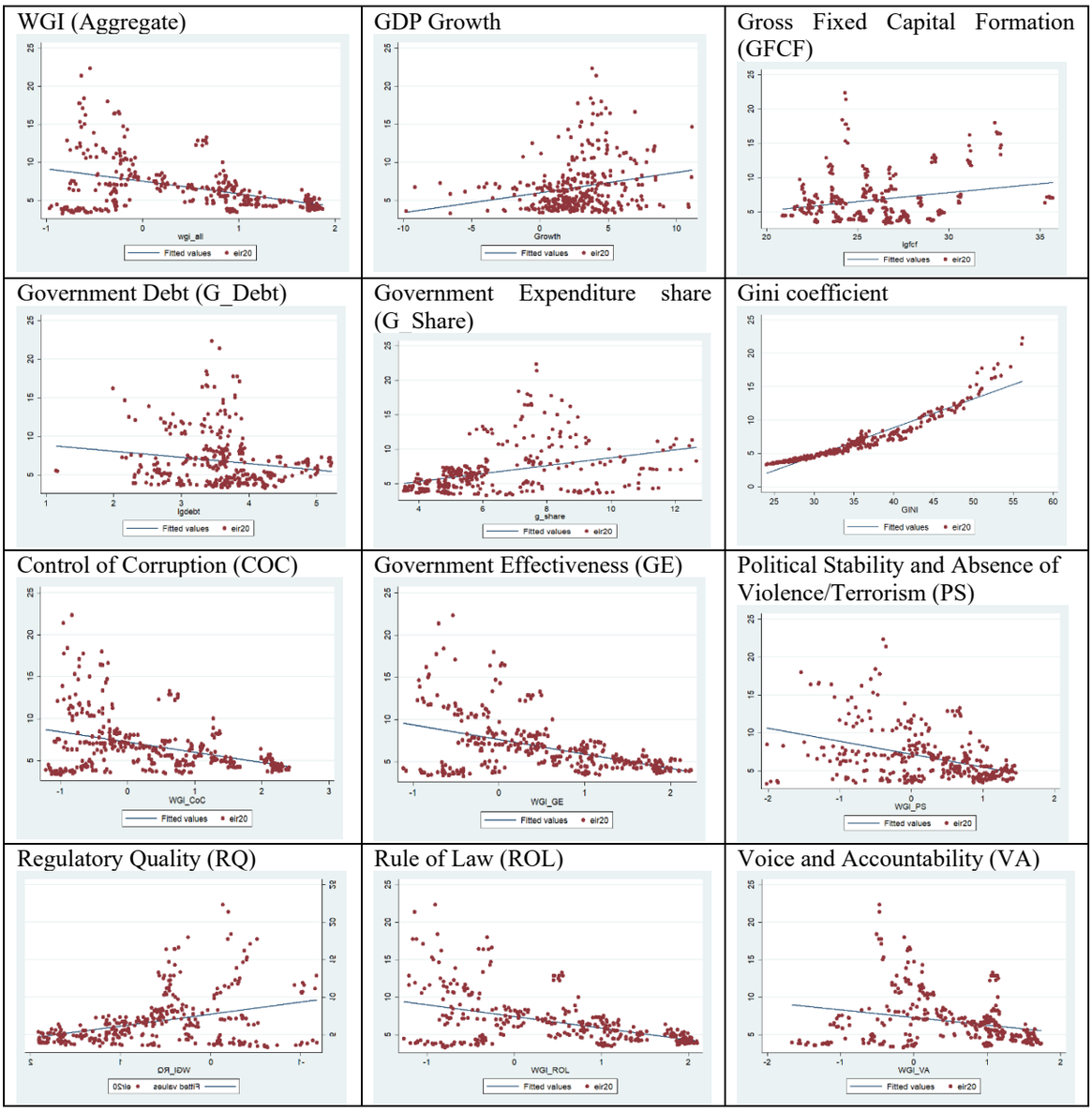

FIGURE 1. Scatter plot of EIR20 and its determinants

Table 2 to Table 5 report results on the relationship between aggregate institution quality (WGI) and inequality (EIR20 and Gini). Table 2 reports results for all 43 selected countries. Table 4 and Table 5 report results for 24 high income countries and 19 middle income countries, respectively. Aggregate WGI is negative and significant for 50% quantile (q50) and 75% quantiles (q75) for both EIR20 and Gini for all countries and high-income countries. This is consistent with common expectation that higher institutional quality (WGI) is associated with lower inequality. However, their relationships are significant positive for q25 and q50 quantiles, not significant for q75 quantile for middle income countries. Table 3 shows the results for individual (decomposed) component of WGI. The PS, ROL and GE have either negative or not significant relationship with EIR20 for all countries and high-income countries. In middle-income countries, PS and ROL also either negative or not significant but GE is not significant. COC, RQ and VA is positive, but RQ has mixed results in high-income and not significant with EIR20 in middle-income countries. Similar results are found for models using GINI except RQ and VA have mixed results in high income countries. The respective combination of WGI components for all models are stated in the note below each results table. The recomposed WGI indexes managed to change the positive relationship between WGI and inequality in

TABLE 2. All countries

DV	Model 1A	Model 1B	Model 2A	Model 2B	Model 3A	Model 3B
	EIR20	Gini	EIR20	Gini	EIR20	Gini
Q25						
wgi_all (S.E.)			0.3655 (0.2180)*	1.5455 (0.9032)*		
wgiminus					-4.1977 (1.0857)***	-14.2787 (2.3996)***
wgiplus					3.6703 (0.7462)***	12.3981 (1.2099)***
Growth	0.0656 (0.0378)*	0.2812 (0.1345)**	0.0525 (0.0401)	0.3039 (0.1306)**	-0.0171 (0.0400)	0.0172 (0.1305)
lgfcf	0.0790 (0.0378)**	0.2947 (0.1251)**	0.0797 (0.0520)	0.2884 (0.1512)*	-0.0222 (0.0463)	0.0288 (0.1372)
lgdebt	0.2524 (0.1457)*	0.7061 (0.7946)	0.3121 (0.1989)	1.1301 (1.1039)	-0.0091 (0.1796)	0.4270 (0.4064)
g_share	0.1597 (0.0893)*	0.8386 (0.3559)**	0.3036 (0.1145)***	1.3290 (0.3865)***	0.2316 (0.1391)*	0.8281 (0.5225)
constant	0.3839 (1.3377)	13.5544 (4.9088)***	-0.9462 (2.1314)	7.8080 (8.2135)	4.2635 (2.1881)*	23.2389 (4.7986)***
Q50						
wgi_all (S.E.)			-1.1320 (0.1559)***	-3.5645 (0.4355)***		
wgiminus					-5.8849 (0.6243)***	-14.3704 (2.9085)***
wgiplus					4.5318 (0.5795)***	10.6809 (3.1169)***
Growth	-0.0129 (0.0600)	-0.0141 (0.2514)	0.0257 (0.0244)	0.0419 (0.01105)	-0.0386 (0.0307)	-0.0768 (0.1083)
lgfcf	0.0011 (0.0729)	-0.1762 (0.2207)	-0.1111 (0.0549)**	-0.2396 (0.0806)***	-0.0473 (0.0377)	-0.0789 (0.1185)
lgdebt	-0.2217 (0.2522)	-0.1558 (0.7535)	-0.0053 (0.1158)	-0.1346 (0.3879)	0.0041 (0.1626)	-0.1467 (0.3868)
g_share	0.6468 (0.0859)***	1.7721 (0.2530)***	0.3235 (0.1057)***	1.1378 (0.1515)***	0.2401 (0.0986)**	0.8016 (0.2636)***
constant	2.9720 (1.5247)*	28.5115 (4.1521)***	7.7697 (1.8815)***	36.8538 (2.9441)***	6.3398 (1.6215)***	33.1394 (3.3698)***
Q75						
wgi_all (S.E.)			-2.3196 (0.2810)***	-5.4445 (0.4598)***		
wgiminus					-7.4804 (1.6567)***	-13.7886 (3.5177)***
wgiplus					5.6598 (1.7881)***	9.2347 (3.3900)***
Growth	-0.0712 (0.0497)	-0.0849 (0.0888)	-0.0092 (0.0385)	-0.0439 (0.1098)	0.0497 (.0736)	0.0308 (0.1562)
lgfcf	0.1833 (0.0731)**	0.4544 (0.1898)**	0.1222 (0.0864)	0.0617 (0.1698)	-0.0154 (0.1274)	0.0284 (0.2005)
lgdebt	-0.3087 (0.1510)**	-0.7462 (0.2518)***	-0.4818 (0.1616)***	-0.6087 (0.4872)	-0.0359 (0.2655)	-0.3310 (0.5961)
g_share	1.0741 (0.1613)***	2.3396 (0.3937)***	0.2949 (0.1002)***	0.9309 (0.1179)***	0.3322 (0.1193)***	0.9181 (0.1613)***
constant	-2.1633 (1.6607)	15.3586 (4.2031)***	5.8820 (1.6643)***	35.9584 (4.3686)***	6.2198 (2.4648)**	33.7407 (6.2683)***

cont.

cont.

Number of obs	344	344	344	344	344	344
0.25 Pseudo R2	0.0228	0.0444	0.0297	0.0568	0.1025	0.1614
0.50 Pseudo R2	0.1150	0.1304	0.1673	0.2154	0.2625	0.2887
0.75 Pseudo R2	0.1946	0.2452	0.2851	0.3301	0.3227	0.3687

Note: wgiplus is average of wgi_coc, wgi_rq and wgi_va; Wgiminus is average of wgi_ps, wgi_rol and wgi_ge. *, ** and *** indicate significant at 10%, 5% and 1% level respectively. S.E. is standard error. wgi_all is aggregated WGI index from all its six components, wgiminus is the negative component of WGI, wgiplus is the positive component to WGI, lgfcf is Gross Fixed Capital Formation in natural logarithm form, lgdebt is government's debt in natural logarithm form and g_share is government's expenditure share.

TABLE 3. Individual components of WGI

	Model 4A	Model 4B	Model 8A	Model 8B	Model 12A	Model 12B
DV	EIR20	Gini	EIR20	Gini	EIR20	Gini
	All countries	All countries	High income	High income	Middle income	Middle income
Q25						
wgi_coc	1.0432	2.6629	1.0264	2.3773	5.2111	14.9199
(S.E.)	(0.3946)***	(1.1502)**	(0.3961)***	(1.900)	(1.1051)***	(1.8982)***
wgi_ge	-0.1877	0.7632	-2.1329	-3.8408	1.2970	2.4630
	(0.7598)	(1.9131)	(0.6262)***	(1.5627)**	(1.0733)	(3.8493)
wgi_ps	-1.1263	-5.1400	-1.3871	-5.4957	-0.2962	-2.8722
	(0.3080)***	(1.3578)***	(0.3115)***	(0.6843)***	(0.5323)	(1.2706)**
wgi_rq	1.2852	5.3901	1.1351	5.0808	0.5048	4.1619
	(0.2839)***	(1.0460)***	(0.6522)*	(2.0239)**	(0.8689)	(3.4163)
wgi_rol	-3.6702	-11.7628	-1.5764	-6.7959	-4.2314	-11.2704
	(0.8285)***	(1.4715)***	(0.6465)**	(2.2607)***	(0.9872)***	(2.6565)***
wgi_va	2.0200	5.7124	1.5367	4.7374	2.1040	4.3096
	(0.3095)***	(0.8939)***	(0.9005)*	(1.9122)**	(0.5900)***	(1.6732)**
constant	5.1561	30.6044	5.9384	32.2299	7.3507	36.8049
	(0.2587)***	(0.7413)***	(0.7200)***	(1.5309)***	(0.3404)***	(0.8677)***
Q50						
wgi_coc	1.4192	4.6662	1.4051	3.9772	3.3324	6.9363
(S.E.)	(0.2767)***	(1.2811)***	(0.4480)***	(1.8719)**	(2.0127)*	(3.3078)**
wgi_ge	-0.4701	-0.5186	-1.1240	-0.9761	1.4770	4.7237
	(0.4795)	(0.9722)	(0.3741)***	(1.9675)	(2.8627)	(5.7776)
wgi_ps	-1.7477	-4.9448	-0.6712	-1.6685	-1.1575	-3.1368
	(0.1894)***	(0.7614)***	(0.4339)	(1.1945)	(0.8513)	(0.8596)***
wgi_rq	0.6853	0.3658	-0.4995	-3.6931	-0.7133	-2.3180
	(0.7318)	(1.0865)	(0.8505)	(2.9764)	(1.1949)	(2.0850)
wgi_rol	-4.6453	-11.8320	-1.9336	-5.8049	-5.2094	-10.4028
	(0.6391)***	(1.2959)***	(0.6580)***	(2.5392)**	(2.7287)*	(4.5027)**
wgi_va	3.4771	8.4452	0.7042	1.9736	4.2669	9.3902
	(0.5438)***	(0.7223)***	(0.5721)	(2.8121)	(1.1036)***	(2.0440)***
constant	6.4697	35.2099	7.7594	39.0822	8.3662	39.2321
	(0.3445)***	(0.9508)***	(0.6481)***	(2.4227)***	(0.5865)***	(12057)***
Q75						
wgi_coc	0.9674	2.9747	1.2935	4.4295	4.5902	1.2610
(S.E.)	(0.4189)**	(0.9003)***	(0.3646)***	(0.7857)***	(2.9361)	(4.0921)
wgi_ge	-1.5994	-3.8231	-0.7950	0.4333	-2.5020	-3.8565
	(0.7613)**	(1.9288)**	(0.6317)	(0.9990)	(2.6762)	(3.7525)
wgi_ps	-1.4926	-3.6480	-0.1269	0.6752	-1.5137	-6.8785
	(0.4900)***	(1.5641)**	(0.3423)	(1.2333)	(0.8584)*	(2.1362)**

cont.

cont.

wgi_rq	-0.2454 (0.8849)	-0.7288 (1.1259)	-0.8204 (0.4858)*	-2.9040 (1.3183)**	2.3340 (3.4267)	-0.4141 (4.0650)
wgi_rol	-3.4690 (1.5647)**	-8.4113 (3.4799)**	-1.3206 (0.5693)**	-4.9435 (1.3496)***	-6.7454 (6.8656)	-4.6246 (7.4235)
wgi_va	4.101 (0.5200)***	8.7740 (2.1680)***	-1.0919 (0.8542)	-5.7785 (2.5105)**	3.9401 (1.2826)***	12.3646 (2.3065)***
constant	8.0575 (0.3035)***	39.8734 (0.9476)***	9.4908 (0.6393)***	44.3773 (1.6554)***	9.3260 (0.8856)***	42.1882 (1.5635)***
Number of obs	344	344	192	192	152	152
0.25 Pseudo R2	0.1328	0.1875	0.2764	0.2897	0.2893	0.3465
0.50 Pseudo R2	0.2857	0.3194	0.3301	0.2738	0.2427	0.2681
0.75 Pseudo R2	0.3760	0.3999	0.3918	0.2713	0.2659	0.2589

Note: *, ** and *** indicate significant at 10%, 5% and 1% level respectively. S.E. is standard error. wgi_all is aggregated WGI index from all its six components, wgiminus is the negative component of WGI, wgiplus is the positive component to WGI, lgfcf is Gross Fixed Capital Formation in natural logarithm form, lgdebt is government's debt in natural logarithm form and g_share is government's expenditure share.

TABLE 4. High income countries

DV	Model 5A	Model 5B	Model 6A	Model 6B	Model 7A	Model 7B
	EIR20	Gini	EIR20	Gini	EIR20	Gini
Q25						
wgi_all (S.E.)			-0.9610 (0.4269)**	-2.1406 (1.0883)*		
wgiminus					-3.4251 (0.6088)***	-12.5768 (2.3330)***
wgiplus					1.6171 (0.2666)***	
wgi_rq					0.8907 (0.4074)**	5.7166 (2.3657)**
wgi_va						8.7435 (2.9110)***
wgi_coc						0.8254 (1.5737)
Growth	-0.0500 (0.0434)	-0.2740 (0.1211)**	-0.0688 (0.0445)	-0.2627 (0.1566)*	-0.0470 (0.0262)*	-0.1682 (0.1135)
lgfcf	0.0542 (0.0297)*	-0.0603 (0.0934)	-0.0351 (0.0379)	-0.1320 (0.2842)	-0.0221 (0.0366)	-0.0928 (0.1982)
lgdebt	0.4859 (0.1874)***	1.4871 (0.5741)***	-0.1055 (0.2980)	0.3472 (1.1415)	0.0921 (0.1438)	1.5986 (0.7860)**
g_share	0.6644 (0.0695)***	1.9920 (0.1194)***	0.4071 (0.1088)***	1.4506 (0.3772)***	0.4308 (0.0542)***	1.6618 (0.2533)***
constant	-1.9011 (1.3177)	15.6008 (4.2332)***	5.2357 (2.9541)*	27.2614 (13.8305)**	3.6340 (1.7507)**	13.0496 (10.4016)
Q50						
wgi_all (S.E.)			-1.2828 (0.2228)***	-2.8500 (0.5780)***		
wgiminus					-3.0754 (0.7488)***	-5.8330 (3.0359)*
wgiplus					1.1001 (0.4207)***	

cont.

cont.

wgi_rq					0.5312 (0.7450)	-0.8441 (3.4508)
wgi_va						3.6904 (2.6473)
wgi_coc						0.6888 (1.4756)
Growth	-0.0543 (0.0421)	-0.1899 (0.1393)	-0.1085 (0.0352)***	-0.1892 (0.1364)	-0.0763 (0.0424)*	-0.1635 (0.1326)
lgfcf	-0.0901 (0.0758)	-0.4748 (0.1662)***	-0.0216 (0.0543)	-0.3486 (0.1456)**	-.04944 (0.0467)	-0.3522 (0.1223)***
lgdebt	0.4098 (0.1396)***	1.4682 (0.5839)**	-0.1640 (0.1450)	0.0816 (0.4784)	-0.0757 (0.1550)	0.1345 (0.5178)
g_share	0.5959 (0.0433)***	1.6270 (0.0969)***	0.4425 (0.0654)***	1.3618 (0.1660)***	0.4131 (0.0692)***	1.0981 (0.3068)***
constant	3.0944 (2.2730)	30.4816 (5.5317)***	5.9014 (1.1659)***	36.9824 (4.5294)***	6.2481 (1.5389)***	37.3039 (6.7084)***
Q75						
wgi_all (S.E.)			-1.2404 (0.2824)***	-2.4430 (0.6875)***		
wgiminus					-2.7735 (0.4681)***	-6.3810 (1.9802)***
wgiplus					1.2621 (0.2954)***	
wgi_rq					0.3655 (0.6540)	-1.3107 (2.0295)
wgi_va						1.6777 (1.4798)
wgi_coc						1.9907 (1.3542)
Growth	-0.0627 (0.0457)	-0.0739 (0.0831)	-0.0336 (0.0393)	-0.1065 (0.1669)	-0.0135 (0.0345)	-0.0584 (0.0983)
lgfcf	-0.1869 (0.0424)***	-0.6159 (0.0987)***	-0.0801 (0.0447)*	-0.5233 (0.1430)***	-0.1797 (0.0302)***	-0.6268 (0.1407)***
lgdebt	0.4350 (0.1877)**	1.1870 (0.3535)***	-0.0007 (0.1737)	0.5935 (0.5886)	0.2424 (0.1800)	0.1891 (0.5390)
g_share	0.6209 (0.0762)***	1.366 (0.0978)***	0.4060 (0.0443)***	1.2577 (0.0953)***	0.3540 (0.0866)***	0.8681 (0.2856)***
constant	5.9502 (1.1386)***	37.8310 (2.5282)***	7.2889 (0.8359)***	40.7963 (3.5685)***	8.7251 (1.3456)***	48.2445 (3.8318)***
Number of obs	192	192	192	192	192	192
0.25 Pseudo R2	0.2399	0.2737	0.2875	0.2801	0.3916	0.3795
0.50 Pseudo R2	0.2948	0.3065	0.4046	0.3666	0.4516	0.4060
0.75 Pseudo R2	0.3759	0.3216	0.4589	0.3648	0.5143	0.4153

Note: wgiplus is average of wgi_coc and wgi_va; Wgiminus is average of wgi_ps, wgi_rol and wgi_ge; wgi_rq is positive at q25 but negative at q75 for both EIR20 and Gini; wgi_coc is positive for Gini; wgi_va is positive at q25 but negative at q75 for Gini. *, ** and *** indicate significant at 10%, 5% and 1% level respectively. S.E. is standard error. S.E. is standard error. wgi_all is aggregated WGI index from all its six components, wgiminus is the negative component of WGI, wgiplus is the positive component to WGI, lgfcf is Gross Fixed Capital Formation in natural logarithm form, lgdebt is government's debt in natural logarithm form and g_share is government's expenditure share.

TABLE 5. Middle income countries

DV	Model 9A	Model 9B	Model 10A	Model 10B	Model 11A	Model 11B
	EIR20	Gini	EIR20	Gini	EIR20	Gini
Q25						
wgi_all (S.E.)			4.0597 (0.8139)***	10.0920 (0.9316)***		
wgiminus					-1.0861 (1.2110)	-2.9651 (3.1392)
wgiplus					4.7203 (1.3086)***	11.7231 (3.7877)***
Growth	0.1103 (0.0749)	0.6772 (0.2652)**	0.1277 (0.0501)**	0.4470 (0.0818)***	0.1190 (0.0658)*	0.4750 (0.1767)***
lgfcf	0.3047 (0.0650)***	1.3380 (0.2076)***	0.2843 (0.0661)***	1.0187 (0.1528)***	0.1146 (0.1586)	0.6349 (0.4768)
lgdebt	-0.3836 (0.5006)	0.4349 (1.9561)	0.5456 (0.6495)	0.2658 (1.6564)	-0.8547 (1.2203)	-2.7157 (3.0280)
g_share	-0.2298 (0.1321)*	-1.1775 (0.4583)**	-0.4194 (0.1575)***	-1.2319 (0.2671)***	-0.2912 (0.2743)	-0.6083 (0.8618)
constant	-0.5239 (2.3633)	1.0674 (9.5848)	0.2110 (2.6226)	16.6322 (6.4134)***	9.2160 (6.6351)	32.6143 (17.6901)*
Q50						
wgi_all (S.E.)			5.2818 (0.6393)***	12.2676 (1.5465)***		
wgiminus					-3.9479 (1.1486)***	-6.5551 (3.3056)**
wgiplus					7.4073 (1.1970)***	14.9308 (3.1860)***
Growth	0.2117 (01715)	0.6364 (0.4026)	-0.02852 (0.1376)	0.1863 (0.2764)	0.0938 (0.0770)	0.2919 (0.2902)
lgfcf	-0.2287 (0.1953)	-0.1605 (0.3979)	-0.0777 (0.1759)	0.0994 (0.2872)	-0.0502 (0.2786)	0.0718 (0.4558)
lgdebt	-2.0907 (1.6314)	-4.3888 (3.0128)	-2.0574 (0.9791)**	-6.2620 (1.2793)***	-3.2940 (1.2110)***	-7.4037 (2.3405)***
g_share	0.2621 (0.3590)	0.4565 (0.8656)	0.1231 (0.2543)	0.3798 (0.3517)	0.0968 (0.2022)	-0.2656 (0.5475)
constant	18.0146 (8.5990)*	52.7423 (13.839)***	17.5347 (6.9611)**	57.0100 (11.579)***	20.8695 (10.6111)*	65.9846 (16.9161)***
Q75						
wgi_all (S.E.)			0.4467 (2.1070)	-0.8739 (3.8420)		
wgiminus					-5.3057 (1.3087)***	-9.8542 (1.7019)***
wgiplus					9.1249 (1.9851)***	14.3531 (4.0032)***
Growth	0.2752 (0.1895)	0.5178 (0.3894)	0.2765 (0.2274)	0.5476 (0.4765)	0.0937 (0.1212)	0.1156 (0.2152)
lgfcf	0.3870 (0.2080)*	0.7582 (0.2141)***	0.3494 (0.2340)	0.6579 (0.3830)*	0.5095 (0.2464)**	0.8649 (0.1902)***
lgdebt	-0.2044 (1.4560)	1.4190 (1.8717)	-0.2862 (2.4648)	1.5181 (3.9667)	-0.3505 (0.9957)	0.5118 (1.4737)
g_share	-0.2531 (0.3344)	-0.1797 (0.4994)	-0.1993 (0.2378)	-0.5401 (0.5799)	0.0587 (0.1824)	0.2513 (0.5618)

cont.

cont.

constant	2.5709 (9.4256)	20.1700 (11.8985)*	3.3688 (13.2818)	25.4261 (23.5866)	-1.5036 (8.0639)	19.2631 (8.4930)**
Number of obs	152	152	152	152	152	152
0.25 Pseudo R2	0.0917	0.1441	0.2059	0.2922	0.2872	0.3490
0.50 Pseudo R2	0.0484	0.0584	0.1404	0.1652	0.3029	0.2780
0.75 Pseudo R2	0.0738	0.0753	0.0742	0.0755	0.2489	0.2355

Note: wgiplus is average of wgi_coc and wgi_va; Wgiminus is average of wgi_ps and wgi_rol; wgi_ge and wgi_rq are not significant, thus omitted. *, ** and *** indicate significant at 10%, 5% and 1% level respectively. S.E. is standard error. wgi_all is aggregated WGI index from all its six components, wgiminus is the negative component of WGI, wgiplus is the positive component to WGI, lgfcf is Gross Fixed Capital Formation in natural logarithm form, lgdebt is government's debt in natural logarithm form and g_share is government's expenditure share.

middle income counties (Model 10A and Model 10B) and q25 of all countries into two group of components of positive (WGIplus) and negative (WGIminus) WGI, and thus give different implications. All recomposed WGIplus and WGIminus show expected and significant relationship with inequality for all models. Minor exception is WGIminus is not significant for q25 in middle income countries.

Growth is generally not significant in most of the models, especially in the q50 and q75. Few exceptions where there are negative relationships are found in high income countries, namely Model 5B (q25) Model 6A (q25 and q50) and Model 7A (q25 and q50). In middle income countries, there are five cases of positive relationship between growth and inequality, all are in q25. GFCF shows mixed results depending on quantiles and inclusion of aggregate and recomposed WGI. Generally, GFCF are mostly either not significant or positive in all countries and middle-income countries. Negative relationship between GFCF and inequality are mostly in higher quantiles in high-income countries. Majority of findings reveal government's debt has no relationship with income inequality. Almost all but one positive relationship results are in models without institution quality. Interestingly, negative results found in q50 of middle-income countries. Almost all findings on relationship between government's share of expenditure and inequality in both all countries and high-income datasets are positive. In contrast, negative relationships are found in q25 in middle-income countries, all are in models without or with aggregate WGI.

DISCUSSION OF FINDINGS

Institutional quality has been lauded as catalyst to many economics' goodness, including reducing income inequality. Expected relationship is negative, which higher institutional quality, lower income inequality. The findings reveal that is not always true. Only ten results out of 18 in total are negative relationship between income inequality and aggregated WGI. These findings highlight two important points. Firstly, institutional quality in the middle-income countries have different impact as compared to high income countries and this different is not captured in the models consisting of all countries. Secondly, findings of positive relationship in middle income countries in q25 and q50 cause alarm. When income inequality further worsens at q75, institutional quality has no effect, perhaps indicating worst damages have been done to the economies at the highest level of extreme income inequality. Statistical implications require these countries to lower their institutional quality. As WGI generally reflects free market and democratic system, a more autocratic government and protectionism economy (lower WGI) seem better ways towards achieving income equality. If this is not the case, the findings imply a pseudo quality where institutional factors aims are not to reduce inequality but other things such as ruthless growth and consolidation of political power.

Incongruence between six individual components of WGI may distort the aggregate index and its relationship with inequality. The results clearly reveal three groups of behaviour between individual component of WGI and inequality, if we ignore the not significant coefficient and few exceptions. Firstly, control of corruption (COC) and voice and accountability (VA) have positive relationship with inequality. Secondly, Political Stability and Absence of Violence/Terrorism (PS) and Rule of Law (ROL) have negative relationship with inequality. Thirdly, Government Effectiveness (GE) and Regulatory Quality (RQ) have inconsistent relationship with inequality. However, GE is consistently negative in all countries and high-income countries but not significant in middle income countries. Positive relationship between income inequality and institution quality, be it in aggregate WGI or decomposed individual form, is not consistent to the norm, thus worth further discussion. Corruption is a deviation from moral and legal norms, thus causes many negative impacts including increase inequality. This generalization of corruption has two flaws, which play their part in explaining the positive relationship. First, corruption also has its "good" or beneficial (Nas et al. 1986: 111). Findings implies corruption as a redistribution of income from the rich. Nonetheless, Nas

et al. (1986) emphasised that this "beneficial corruption" should not be the reason to legitimate illegal practices. Instead, this positive relationship between COC and inequality serves as a signal of serious structural flaws that need to be corrected. Second, corruption is hard to determine. It is measured through public perceptions, as in WGI and other indexes, to represent the level of corruption or control of corruption. These perceptions are shaped by knowledge/power play as theorized by Michel Foucault (2019). The empirical results did not question the construct of data collection but cast doubt on the construct of perceptions, which through structuralism or post-structuralism philosophy, are determined by the structures or system plays in social, politics and economics. This knowledge/power play can distort the perception and unable to be filtered out from the measuring index. For example, a corrupted government may dismiss wrongdoing, which also holds the knowledge and influential power to falsely give a positive perception on the control of corruption.

Voice and accountability (VA) are a measurement of democracy and its freedom of speech, association and media. Common believes that higher ability of citizen, especially the poor and minority groups, to voice out and their opinions to be counted in policy making are important to improve fairness and reduce inequality. However, the weightage of the voices is different, with the rich far outpowered the poor. Sharma (2008: 22) noticed that a general platform for all to voice out is less effective unless accompanied with empowerment program to the marginalized groups. There are influential Western and Eastern philosophies that propagate restrictive laws to control the people (in favour of the ruler or government) to ensure smooth ruling for stability, prosperity and equality. Examples are thoughts of Machiavelli, Hobbes, Plato and Friedrich Nietzsche of the West and the Legalism and Confucianism of the East. Socialism also calls for strong government for better egalitarian equality. Therefore, the positive result between VA and inequality prompt for review of the effectiveness of democracy and free market capitalism as well as abstracting some aspects from other philosophies that propagate less VA for better equality. Government effectiveness (GE) measures the quality and independence and efficiency of public service, policy formulation, commitment, and implementation. Political Stability and Absence of Violence/Terrorism (PS) reflects perceptions of the probability of political instability and violent. Rule of Law (ROL) reflects the credibility of laws and its enforcement agencies such as juridical and police. These include citizens abiding rules and regulations, reduced crime rate and respect to intellectual property rights.

The empirical findings for GE, PS and ROL are consistent with normal expectation of negative relationship, except in middle-income countries. Thus, in term of policy and governance system, separation of power doctrine fit the findings well. This doctrine propagates power separation through three independent branches of governance, namely legislature, executive, and judiciary but is doubtful in middle-income countries. Electoral system may not be fair and intervention of executive branch into juridical is not uncommon observed especially if there is dominant of majority representation in legislature body as indicates by insignificant results of GE, PS and ROL in middle-income countries (see Table 3, Model 12A & 12B). Regulatory quality (RQ) indicates the competence of the government's policies and regulations that stimulate private sector development through fair competition, as well as easiness and freedom of doing business. RQ has mixed results. Private sector development is a common mantra for economic growth in free market, but results imply that private sector development incline towards either worsen inequality or no impact. These findings are important. They reflect two things, namely certain extent of failure of trickling down effects under classic free market philosophy, and the inability of government's effort to correct the income inequality through regulations. The significant findings on all models using decomposed WGI, except for *WGIminus* at q25 in middle income countries, statistically prove that aggregate WGI does have anomalies. Not every component of WGI has negative relationship with income inequality as commonly assumed. Coefficients of *WGIplus* and *WGIminus* in absolute term are bigger than absolute value of the aggregated WGI. This implies that the positive and negative relationship within components of WGI have cancel out each other, giving distorted findings if aggregated WGI is used.

Findings on growth and capital formation cast doubt on the automatic trickling down propagated by the classic school. The United Nation Human Development's (UNDP) Human Development Report 1996 highlighted five types of growth to be avoided. One of them is the "ruthless growth" in which the fruits of economics growth mostly benefit the rich, which empirically implies by a positive relationship between growth, CFCF and income inequality, particularly in middle-income countries. Overall findings also imply middle income countries may have pseudo democracy and/or inefficient free market. Thus, economics and political evolution are not enough to change things towards reducing inequality. Drastic political revolution (for example, change of government through mass protest) and pressured by international institutions such as United Nation, World Bank, World Trade Organization, and International Monetary Funds are needed. Government fiscal policy (Keynesian economies) is more important and useful tools to bridge inequality gaps in middle-income countries than high income countries. Generally, there is not many differences between two proxies of inequality (EIR20 & Gini). The most glaring different is Gini failed to capture

the effect of COC and VA. It is possible that extreme inequality accountable of sizeable amount of overall inequality. This is possible if the income gaps between the Top 20% (T20) and Bottom 20% (B20) is too big relative to the deviation within the remaining 60% of the middle-income group. Therefore, the findings for EIR20 mirrored the findings in overall income inequality as in Gini coefficient. Efforts to elevating income of the poorest (Rawlsian equality) helps to reduce overall (utilitarian) inequality too.

CONCLUSION

Income inequality is richly debated but two ongoing issues worth further examination. First, the common proxy of inequality, the Gini coefficient may not reflect reality. Secondly, aggregated institutional quality of WGI may have anomalies, distorted by its individual components' incongruent relationship with income inequality. Findings reveal that WGI not always have the negative relationship with income inequality. The recomposed WGI-plus and WGI-minus are all significant at correct sign in all models, except for one case. Individually, control of corruption (COC) and voice and accountability (VA) components have positive relationship with extreme income inequality, which do not follow the norm. Government Effectiveness (GE), Political Stability and Absence of Violence/Terrorism (PS) and Rule of Law (ROL) components have negative relationship with extreme income inequality. Regulatory Quality (RQ) has mixed relationship. There are few exceptions, mainly in middle-income countries where GE and RQ are not significant. Two proxies for income inequality, namely EIR20 and Gini coefficient share similar findings except the COC, and VA. Growth and GFCF generally do not have relationship with income inequality except positive relationship in middle income countries. Government debt mostly not significant when institutional factor is included in the model. Relationship between government's expenditure share and income inequality are positive in high income countries but mostly either negative or not significant in middle-income countries.

These findings give six implications. Firstly, the WGI has subconsciously set democracy and free market as "good quality" institution, yet findings reveal it is not completely good in reducing income inequality. A mixture with autocratic government and protectionism economy as propagated in various Western and oriental philosophies thoughts, offers credential alternative. These views are backed by WGI and VA having positive relationship with income inequality. Secondly, the positive findings in COC signal possible serious structural flaws regarding policies, perception and conceptualization on control of corruption. Corruption is not supposed to be a wealth redistribution tools to reduce income inequality. Anti-corruption policies from five successful countries, namely New Zealand, Singapore, Hong Kong, Botswana and Rwanda can be emulated (Quah 2017). Thirdly, there is no one-size-fit-all policy as findings reveal different results between countries' income level, different quantile and different proxy of income inequality. Generally, middle-income countries have relatively more anomalies. Fourthly, relatively more insignificant results of GE, PS and ROL in middle-income countries cast doubt on the system of separation of power in middle-income countries. Reduce income inequality is policy goals of every country. Insignificant of those three institutional quality components and inconsistency of RQ relationship with income inequality prompt critical review of political will and governance effectiveness in middle-income countries on towards inclusiveness. These are hardly achievable unless there are policies that empowered civil society, which can take up welfare issues to relevant authorities and deeper engagement in policymaking. Fifth, the significant results of the recomposed WGI enhance call for not aggregating all components of institution quality in future research and policy making decision. Sixth and lastly, generally either insignificant or positive relationship between income inequality and economic growth and gross fixed capital formation imply the classic school that propagated free market is not effective to reduce inequality. Keynesian economies, especially targeted fiscal expenditure may help in middle-income but not high-income counties.

REFERENCE

Abdallah, A.A. 2010. Economic growth and income inequality in sudan: An empirical investigation. *Jurnal Ekonomi Malaysia* 44: 109 – 114.

Adams, R.H. 2003. *Economic growth, inequality and poverty: Findings from a new data set*. Washington: World Bank Publications.

Ahluwalia, M.S. 1976. Inequality, poverty and development. *Journal of Development Economics* 3(4): 307-342.

Akita, T & Lukman, R.A. 1995. Interregional inequalities in Indonesia: A sectoral decomposition analysis for 1975–92, *Bulletin of Indonesian Economic Studies* 31(2): 61-81.

Al Jazeera. 2019a. Chocolate: A Taste of Independence in Togo. https://www.aljazeera.com/programmes/peopleandpower/ 2019/09/chocolate-taste-independence-togo-190918085430984.html. (accessed 27 September 2019)

Al Jazeera. 2019b. The chocolate-making activist fighting against foreign exploitation in Togo. https://www.youtube.com/watch?v=sZGiwCnM5L8&feature=youtu.be. (accessed 27 September 2019)

Andres, A.R. & Ramlogan-Dobson, C. 2011. Is corruption really bad for inequality? Evidence from Latin America. *Journal of Development Studies* 47(7): 959-976.

Armiento, M. 2018. The sustainable welfare index: towards a threshold effect for Italy. *Ecological Economics* 152: 269 - 309.

Asamoah, L.A. 2021. Institutional quality and income inequality in developing countries: A dynamic panel threshold analysis. *Progress in Development Studies* 21(2): 123–143.

Asongu, S.A., Diop, S. & Addis, A.K. 2020. Governance, inequality and inclusive education in Sub-Saharan Africa. *Forum for Social Economics*.

Barro, R.J. 2000. Inequality and growth in a panel of countries. *Journal of Economic Growth* 5(1): 5-32.

Bernard, J. 2019. Where have all the rural poor gone? Explaining the rural–urban poverty gap in European countries. *Sociologia Ruralis* 59(3): 1 – 24.

Bollen, K.A. & Jackman, R.W. 1985. Political democracy and the size distribution of income. *American Sociological Review* 50(4): 438 – 457.

Chambers, D. 2010. Does a rising tide raise all ships? The impact of growth on inequality. *Applied Economics Letters* 17(6): 581-586.

Chen, W. 2018. The effects of income inequality on economic growth: Evidence from China. Unpublished PhD Diss., University of Bath.

Chong, A. & Calderon, C. 2000. Institutional quality and income distribution. *Economic Development and Cultural Change* 48(4): 761-786.

Chong, A. & Gradstein, M. 2007. Inequality and institutions. *The Review of Economics and Statistics* 89(3): 454-465.

Das, S.K. & Barua, A. 1996. Regional inequalities, economic growth and liberalisation: A study of the Indian economy. *The Journal of Development Studies* 32(3): 364-390.

De La O Campos, A.P., Villani, C., Davis, B., Takagi, M. 2018. Ending extreme poverty in rural areas: Sustaining livelihoods to leave no one behind. Rome: FAO.

Deininger, K. & Squire, L. 1998. New ways of looking at old issues: Inequality and growth. *Journal of Development Economics* 57(2): 259–287.

Doan, H.Q. 2019. Trade, institutional quality and income: empirical evidence for Sub-Saharan Africa. *Economies* 48: 1 – 23.

Elbers, C. & Lanjouw, P. 2001. Intersectoral transfer, growth, and inequality in rural Ecuador. *World Development* 29(3): 481-496.

Foucault, M. 2019. *Discipline and Punish: The Birth of the Prison*. (Sheridan, S., Trans.). London: Penguin Books. (Original work published 1975).

Gradstein, M., Milanovic, B. & Ying, Y. 2001. Democracy and Income In-Equality: An Empirical Analysis, CESifo Working Paper No. 411.

Gunasinghe, C., Selvanathan, E.A., Naranpanawa, A. & Forster, J. 2019. The impact of fiscal shocks on real GDP and income inequality: what does Australian data say?, *Journal of Policy Modeling*.

Gupta, S., Davoodi, H. & Alonso-Terme, R. 2002. Does corruption affect income inequality and poverty? *Economics of Governance* 3(1): 23-45.

Gyimah-Brempong, K. 2002. Corruption, economic growth, and income inequality in Africa. *Economics of Governance* 3(3): 183-209.

Jong-Sung, Y. & Khagram, S. 2005. A comparative study of inequality and corruption. *American Sociological Review* 70(1): 136-157.

Kaufmann, D., Kraay, A. & Mastruzzi, M. 2011. The worldwide governance indicators: Methodology and analytical issues. *Hague Journal on the Rule of Law* 3(2): 220-246.

Keane, M. & Thakur, R. (2018). Health care spending and hidden poverty in India. *Research in Economics* 72: 435–451.

Kourtellos, A., Lenkoski, A. & Petrou, K. 2019. Measuring the strength of the theories of government size. *Empirical Economics*.

Krozer, A. 2015. The inequality we want: how much is too much?. *Journal of International Commerce, Economics and Policy* 6(3): 1550016.

Kuznets, S. 1955. Economic growth and income inequality. *The American Economic Review* 45(1): 1–28.

Law, S.H., Tan, H.B. & Azman-Saini, W.N.W. 2014. Financial development and income inequality at different levels of institutional quality, *Emerging Markets Finance and Trade* 50(1): 21 – 33.

Li, H., Xu, L.C. & Zou, H. 2000. Corruption, income distribution, and growth. *Economics and Politics* 12(2): 155–182.

Lin, F. & Fu, D. 2016. Trade, institution quality and income inequality. *World Development* 77: 129-142.

Luo, W. 2019. Inequality and government debt: Evidence from OECD panel data. *Economics Letters* 186: 108869.

Madni, G.R. & Anwar, A. 2020. Meditation for level of institutional quality to combat income inequality through financial development. *International Journal of Finance & Economics* 26(2): 2766 – 2775.

Naplava, R. 2020. Institutional quality and income inequality: evidence from post-soviet countries. *European Journal of Business Science and Technology* 6(2): 100–112.

Nas, T.F, Price, A.C. & Weber, C.T. 1986. A policy-oriented theory of corruption. *American Political Science Review* 80(1): 107 – 119.

Navameul, E.L., Morollon, F.R. & Vazquez, E.F. 2018. Does the urban population pay more for food? Implications in terms of poverty. *Applied Spatial Analysis and Policy* 12: 547–566.

Ogus Binatli, A. 2012. Growth and income inequality: a comparative analysis. *Economics Research International*

Ongo Nkoq, B.E. & Song, J.S. 2021. Does institutional quality increase inequalities in Africa. *Journal of the Knowledge Economy*.

Oshima, H.T. 1962. The international comparison of size distribution of family incomes with special reference to Asia. *The Review of Economics and Statistics* 44(4): 439-445.

Padilla-Frausto, I. & Wallace, S.P. 2015. *The Hidden Poor: Over Three-Quarters of a Million Older Californians Overlooked by Official Poverty Line*. Policy Brief UCLA Center for Health Policy Resources.

Palma, J.G. 2011. Homogeneous middles vs. heterogeneous tails, and the end of the "Inverted-U": It's all about the share of the rich. *Development and Change* 42(1): 87–153.

Perera, L.D.H. & Lee, G.H. 2013. Have economic growth and institutional quality contributed to poverty and inequality reduction in Asia?. *Journal of Asian Economics* 27**:** 71-86.

Quah, J.S.T. 2017. Five success stories in combating corruption: lessons for policy makers. *Asian Education and Development Studies* 6(3): 275-289.

Reuveny, R. & Li, Q. 2003. Economic openness, democracy, and income inequality: an empirical analysis. *Comparative Political Studies* 36(5): 575-601.

Ritonga, J.T. 2005. Economic growth and income distribution: The experience of Indonesia. *Jurnal Ekonomi Malaysia* 39: 89 – 105.

Robinson, S. 1971. Sources of growth in less developed countries: A cross-section study. *The Quarterly Journal of Economics* 85(3): 391-408.

Salotti, S. & Trecroci, C. 2018. Cross-country evidence on the distributional impact of fiscal policy, *Applied Economics* 51: 5521-5542.

Shahabadi, A., Nemati, M. & Hosseinidoust. S.E. 2018. The effect of education on income inequality in selected Islamic countries, *International Journal of Asia Pacific Studies* 14(2): 61–78.

Sharma, B. 2008. *Voice, Accountability and Civic Engagement: A Conceptual Overview*. UNDP Oslo Governance Centre.

Stiglitz, J.E. 1996. Some lessons from the East Asian miracle. The World Bank Research Observer 11(2): 151–177.

Thornton, J. 2001. The Kuznets inverted-U hypothesis: panel data evidence from 96 countries. *Applied Economics Letters* 8(1): 15-16.

United Nation Human Development (UNDP). 1996. *Human Development Report 1996: Economic Growth and Human Development*. New York: Oxford University Press.

World Bank. 2015. *Global Monitoring Report 2015/2016*. Washington: World Bank.

World Bank. 2020. *Poverty and Shared Prosperity 2020: Reversals of Fortune*. Washington: World Bank Group.

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APPENDIX

List of countries and their respective development status based on World Bank's classification

No	Country	Status	No	Country	Status
1	Armenia	Middle income	23	Kyrgyz Republic	Middle income
2	Austria	High income	24	Latvia	High income
3	Belarus	Middle income	25	Lithuania	High income
4	Belgium	High income	26	Luxembourg	High income
5	Bulgaria	Middle income	27	Malta	High income
6	Colombia	Middle income	28	Moldova	Middle income
7	Costa Rica	Middle income	29	Norway	High income
8	Cyprus	High income	30	Paraguay	Middle income
9	Czech Republic	High income	31	Peru	Middle income
10	Denmark	High income	32	Poland	High income
11	Dominican Republic	Middle income	33	Portugal	High income
12	Ecuador	Middle income	34	Romania	High income
13	El Salvador	Middle income	35	Russian Federation	Middle income
14	Estonia	High income	36	Slovenia	High income
15	Finland	High income	37	Spain	High income
16	France	High income	38	Sweden	High income
17	Greece	High income	39	Switzerland	High income
18	Honduras	Middle income	40	Thailand	Middle income
19	Hungary	High income	41	Turkey	Middle income
20	Indonesia	Middle income	42	Ukraine	Middle income
21	Italy	High income	43	Uruguay	High income
22	Kazakhstan	Middle income			