A multi-dimensional free market and income inequality in developing Asia: How does the quality of governance matter?

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Abstract

This paper empirically examines how a free market, a governance quality, and their interaction simultaneously affect income inequality in 23 Asian developing countries over the period 2000-2019. Especially, different dimensions of a free market proxied by various components of economic freedom are analysed. Results show that the overall economic freedom and three of its components including labour freedom, trade freedom, and investment freedom reduce income inequality; but other components including business freedom, monetary freedom, and financial freedom widen income inequality. Meanwhile, the governance quality not only decreases income inequality, but also intensifies the beneficial impacts of the overall economic freedom and those respective components of economic freedom on income equality. Notably, at certain thresholds of governance quality, the detrimental impacts of business freedom, monetary freedom, and financial freedom on income equality turn into the advantageous ones. The findings consolidate the appropriate combination of free market with specific dimensions

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and the governance quality in boosting the equality of income distribution in Asian developing countries.

Keywords: Economic freedom; Free market; Governance quality; Income inequality

JEL classifications: D31; E02; F14

1. Introduction

In the literature of liberalization, a free market has an ambiguous impact on income inequality. On the one hand, a free market can widen income inequality because a free market – usually measured by economic freedom – is accompanied with less redistribution to the poor via transfer payment and taxes (Carter, 2006), and a freer market decreases income shares of the poor and the middle classes but increases the richest income shares (Saccone, 2021). On the other hand, a free market may reduce income inequality by opening more economic opportunities to less privileged and lower income individuals (De Soto, 2000; Clark and Lawson, 2008). Such ambiguous effects of a free market on income inequality in previous studies imply that the effects can depend on different dimensions of economic freedom.

Moreover, this ambiguous impact can be affected by other variables, such as the quality of governance or institutional quality. In the literature of institutional economics, the quality of governance is considered a solution to reduce income gap since the poor can be protected by an independent judicial system (Chong and Gradstein, 2007; Carmignani, 2009). However, there are no studies investigating the simultaneous impact of a free market and quality of governance on income inequality, as well as the role of quality of governance in moderating this impact, especially using multi-dimensions of a free market. This research problem is relevant in the context of Asian developing countries as it displays wide variation in terms of free market, quality of governance, and income inequality.

In this paper, we examine the impact of a free market – proxied by economic freedom – with various dimensions on income distribution, and take the moderating effect of governance quality into consideration in 23 Asian developing countries over the period 2000-2019. This paper advances the literature in two ways. First, we explore the simultaneous impacts of a free market with various dimensions and the governance quality on income inequality. Second, we investigate the role of the governance quality

in attenuating or exacerbating the impacts of overall economic freedom and its different dimensions on income inequality in Asian developing world.

2. Literature review

2.1. The impact of a free market on income inequality

A free market is run by the laws of supply and demand with little or without government regulations. A free market optimizes total surplus in society since it is led by an invisible hand to efficiently allocate scarce resources. However, there is no pure free markets in reality when governments intervene into the market to solve its failure. Therefore, economists can measure the free level of a market by using the government's intervention in various dimensions such as labour freedom, trade freedom, investment freedom, business freedom, monetary freedom, and financial freedom (Huynh and Hoang, 2021). The Heritage Foundation and Wall Street Journal (2008) defines economic freedom as the highest form to provide "an absolute right of property ownership, fully realized freedoms of movement for labour, capital, and goods, and an absolute absence of coercion or constraint of economic liberty beyond the extent necessary for citizens to protect and maintain liberty itself". Recent report by the Heritage Foundation & Wall Street Journal (2020) also states that the ideals of economic freedom are strongly associated with "healthier societies, cleaner environments, greater per capita wealth, human development, democracy, and poverty elimination". Especially, the impact of economic freedom on income inequality – the extent to which income is unevenly distributed in a group of people – has attracted a great deal of attention from scholars and policy makers. However, previous studies on this impact are inconclusive with mixed results.

On the one hand, economic freedom reduces inequalities as it provides more opportunities to those at the lower end of the income distribution. This strand has been supported by various researchers. For example, Berggren (1999) shows that economic freedom lessens inequality in 66 countries in the period 1975–1985 by increasing the income share of held by the lowest quintile, and reducing that by the highest one. Likewise, Scully (2002) finds a beneficial effect of economic freedom on income equality and economic growth, and there is a small trade-off between growth and income inequality for a sample of 26 developed countries over the period 1975–1990. Similarly, a reducing effect of economic freedom on income inequality for a sample of 66 countries in the period 1990–2000 is illustrated by Clark and Lawson (2008).

On the other hand, economic freedom increases inequalities as it is typically associated with lower taxes and less redistributive policies via low transfer payment which generally benefit those at the lower end of the income distribution. Carter (2006) finds that the positive impact of economic freedom on income inequality is statistically significant, but relatively inelastic in 39 high- and middle-income countries over the period 1980–2000, due to a trade-off between economic freedom and income equality. Bergh and Nilsson (2010) also show a positive impact of economic freedom on income inequality in 78 mostly middle- and high-income countries during 1970–2005, and this impact is stronger in more developed countries. Recently, Saccone (2021) finds that higher economic freedom decreases income shares of the poor and the middle classes but increases the richest income shares in 76 developed and developing countries for period 1980–2014.

Other researchers decompose the economic freedom and study how each component of economic freedom affect income inequality. For example, Pérez-Moreno and Angulo-Guerrero (2016) conclude that different components of economic freedom affect income distribution differently for an unbalanced panel of 28 EU member countries over the period 2000–2010. Greater economic freedom from lower government size increases inequality. Higher economic freedom from deregulation in credit, labour, and product markets also exacerbates inequality. However, economic freedom from legal system and access to sound money exerts no impact on inequality. By investigating a sample of 21 OECD countries, Graafland and Lous (2018) discover that fiscal freedom, free trade and freedom from government regulation increase income inequality; whereas sound money decreases it. However, previous studies do not use a wider range of economic freedom by six constituents (including business freedom, financial freedom, investment freedom, labour freedom, monetary freedom, and trade freedom). Moreover, this research issue has not been addressed in Asian countries.

In developing Asian context, we argue that overall economic freedom may reduce income inequality since the widespread of economic freedom boosts economic growth, opens more economic opportunities to less privileged and lower income individuals to improve their income, as well as promotes poverty elimination. However, the effects may depend on different dimensions of economic freedom due to the following arguments. *First*, free trade reduces income inequality since it encourages exporting labour-intensive goods and services provided by low-skilled workforce in developing countries. *Second*,

labour freedom allows the poor enter more easily in the labour market for improving their income, shortening the income gap as a result. *Third*, investment freedom also creates more jobs and opportunities for people at the lower end of the income distribution. *Fourth*, other dimensions of economic freedom such as business freedom, monetary freedom, and financial freedom widen income inequality since they benefit the rich more than the poor. For example, policies on financial repression are designed to be pro-poor in India and some other developing countries, and therefore financial freedom exacerbates income inequality (Ang, 2010). Moreover, financial liberalization can aggravate income inequality due to the vulnerability of the poor to financial shocks caused by financial freedom. Meanwhile, monetary freedom can worsen income inequality because inflation is more costly for low income households. Business freedom is also detrimental to income equality when it is pro-rich more than pro-poor.

Hypothesis 1: Overall economic freedom positively affects income inequality in Asian developing countries and the effects depend on different dimensions of economic freedom.

2.2. The impact of the governance quality on income inequality

The governance quality has been documented as an important driver of economic development for decades (North, 1990; Acemoglu et al., 2005; Hoang and Huynh, 2021). Better quality of governance can minimize asymmetric information (Leonard et al., 2013), transaction cost (Hoffman et al., 2016) and improve market efficiency and resource allocation (Park, 2012), as well as moderate the impact of foreign direct investment (FDI) on environmental quality (Huynh & Hoang, 2019). Especially, Alesina and Perotti (1996) reveal that income inequality increases in countries with political instability and social unrest. According to Chong and Gradstein (2007), better governance quality promotes income equality since an independent judicial system can protect the poor. Although income inequality is accompanied with weak institutions, it is less significant when redistributive policies are implemented to deal with inequal issues (Carmignani, 2009). Huynh and Nguyen (2020) also show the important role of governance quality in reducing income inequality in 19 Asian developing countries. Notably, Huynh (2021) finds that governance quality not only reduces income inequality but also diminishes the beneficial effects of FDI on income equality. Whereas, Ferrara and Nisticò (2019) indicate that the level of public expenditure and spatial spillovers can matter the effect of institutional quality on regional multidimensional well-being

inequalities in Italy. Similarly, Gradstein et al. (2001) contend that the impact of democracy on inequality depends on the ideology and political systems. They find that democratization substantially reduces inequality in Judeo-Christian societies, but not much in those of Confucian, Buddhist, and Hindu. Besides, inequality is negatively affected by democracy in in countries with a parliamentary than a presidential system. Other scholars also prove the negative impact of governance quality on regional income disparities, including Kyriacou and Roca-Sagalés (2013), and Ezcurra and Rodrìguez-Pose (2014).

Hypothesis 2: The governance quality reduces income inequality in Asian developing countries.

2.3. The joint impact of economic freedom and governance quality on income inequality

The impact of economic freedom on income inequality depends not only on dimensions of economic freedom, but also on other factors. For example, Ahmad (2017) illustrates that the positive impact of economic freedom on income inequality, in 115 countries over the period 1970-2014, is attenuated in the presence of a democratic regimes. Similarly, we contend that the governance quality can moderate the impact of economic freedom on income inequality because economic freedom and governance quality are mutually related (Graeff and Mehlkop, 2003). Specifically, higher economic freedom can improve governance quality because it is found that the higher achievements in economic freedom can lead to greater success in controlling corruption (Qerimi and Sergi, 2012). Economic freedom reduces the government intervention in the market, making less corruption due to the transfer of resources away from public sector. With the falling corruption, the governance quality is improved, which in its turn can intensify or reduce the beneficial or detrimental effects of economic freedom on income distribution, respectively.

Hypothesis 3: The governance quality can moderate the impact of economic freedom and its dimensions on income inequality in Asian developing countries.

3. Theoretical framework and data

A free market proxied by economic freedom potentially affects income inequality via two channels including: i) its impact on income-growth rates of the rich and the poor, and ii) the redistribution system (Berggren, 1999; Scully, 2002; and Clark, 2008). In the first channel, if the income-increasing effect of economic freedom on the poor is bigger than

that on the rich, income inequality falls. On the contrary, income inequality rises when the income-increasing effect of economic freedom on the poor is smaller that on the rich. In the second channel, a progressive taxation can lead to falling income inequality while a regressive taxation can induce rising income inequality. However, even under the system of progressive taxation, economic freedom may exacerbate income inequality since economic freedom reduces tax revenue, which generally benefit the poor through redistributive policies. Based on the above theoretical framework, the impact of economic freedom (EF) on income inequality (GINI) can be described by the following function:

$$GINI = f(EF) \quad (1)$$

From the perspective of institutional economics, better governance quality promotes income equality as the poor can be protected by an independent judicial system (Chong and Gradstein, 2007). Meanwhile, redistributive policies cannot reduce income inequality with weak institutional quality due to inefficient implementation of such policies (Carmignani, 2009). Furthermore, we argue that the governance quality can moderate the impact of economic freedom on income inequality for two reasons. First, if economic freedom is beneficial for income equality, the governance quality intensifies this advantageous impact through their joint effects on income equality. Second, if the effect of economic freedom on income equality is adverse, better governance quality can mitigate this effect by protecting people at the lower end of the income distribution. Therefore, the governance quality (GQ) and its interaction with EF (EF*GQ) are added in Eq. (1) as follows:

$$GINI = f(EF, GQ, EF*GQ) \quad (2)$$

By controlling other key determinants of income inequality, Eq. (2) is rewritten for analysing a panel data as below:

$$GINI_{it} = \alpha_0 + \alpha_1 EF_{it} + \alpha_2 GQ_{it} + \alpha_3 EF_{it} * GQ_{it} + Z'_{it}\,\beta_j + \varepsilon_{it} \quad (3)$$

where i and t represent country and year, respectively; α_1, α_2, α_3, and β_j are the respective coefficients; and ε_{it} is the error term. GINI is income inequality, measured by the GINI index from the Standardized World Income Inequality Database – SWIID (Frederick, 2020) with higher value indicating higher income inequality. EF is economic freedom, computed by six components of the Index of Economic Freedom from the Heritage Foundation and Wall Street Journal - HF&WSJ (2020), including business freedom (BF), labour freedom (LF), monetary freedom (MF), trade freedom (TF), investment freedom (IF), and financial freedom (FF). Each component is graded on a scale of 0 (repressed) to

100 (freest). GQ denotes for the governance quality, measured by the quality of governance index from Worldwide Governance Indicators – WGI (World Bank, 2020a), ranked from - 2.5 (lowest quality) to + 2.5 (highest quality) [1].

EF*GQ captures the interaction between economic freedom and governance quality. The role of governance quality in moderating the effect of EF on GINI is computed by taking the partial derivative of Eq. (3) with respect to EF as follows:

$$\frac{\partial(GINI_{it})}{\partial(EF_{it})} = \alpha_1 + \alpha_3 \, GQ_{it} \quad (4)$$

Because of measuring EF by six components, we will consider the moderating effect of GQ on the impacts of not only the overall EF but also its each component on GINI by alternatively using Eq. (4).

Z is a vector of control variables as justified in the literature, including inflation – INF (Law & Soon, 2020), Education – EDU (Gregorio & Lee, 2002; Battistón et al., 2014), foreign direct investment – FDI (Aitken et al., 1996; Huynh, 2021), employment – EMP (Mocan, 1999; Huynh and Nguyen, 2020). Data for these control variables are collected from World Development Indicators – WDI (World Bank, 2020b).

All data in the empirical model are collected over the period 2000 – 2019 for 23 developing Asian countries, including Bangladesh, Bhutan, Cambodia, China, India, Indonesia, Iran, Jordan, Kazakhstan, Kyrgyzstan, Laos, Lebanon, Malaysia, Mongolia, Myanmar, Nepal, Pakistan, Philippines, Sri Lanka, Tajikistan, Thailand, Vietnam, and Yemen. The selection of the above countries is based on two criteria: i) the exclusion of Asian developed countries, and ii) the availability of data for the empirical model. Definitions, measurements and summary statistics for all variables are presented in Table 1.

Table 1. Definition and summary statistics

Variables	Definitions and measurements	Source	Mean	St.var	Min	Max	Obs
GINI	Gini (estimated number)	SWIID	38.429	4.912	26.3	48.6	410
EF	The overall economic freedom	HF&WSJ	55.815	8.918	25.88	74.8	437
BF	Business freedom	HF&WSJ	58.284	12.335	20	93.5	437
LF	Labour freedom	HF&WSJ	62.426	14.225	20	88.9	437
MF	Monetary freedom	HF&WSJ	71.674	9.443	13.8	92.3	437

[1] Captured by six indicators: Rule of Law, Regulatory Quality, Government Effectiveness, Political Stability and Absence of Violence/Terrorism, Voice and Accountability, and Control of Corruption.

TF	Trade freedom	HF&WSJ	67.187	12.144	19.6	87.6	432
IF	Investment freedom	HF&WSJ	38.448	15.748	5	70	422
FF	Financial freedom	HF&WSJ	39.219	16.231	10	70	435
GQ	Governance quality	WGI	-0.589	0.486	-1.994	0.594	413
INF	Inflation, CPI (%)	WDI	6.879	6.539	-18.109	57.075	416
EDU	School enrolment, tertiary (% gross)	WDI	26.286	16.119	2.379	69.636	410
FDI	FDI, net inflow (% GDP)	WDI	3.762	5.001	-37.155	43.912	457
EMP	Employment in services to total (%)	WDI	40.276	13.868	13.817	74.947	436

4. Econometric methodology

The empirical model (4) is estimated by using pooled ordinary least squares (OLS), fixed effects (FE), and random effects (RE) for the panel data. We start our regression with OLS, followed by FE. Then, the Breusch and Pagan Lagrangian multiplier test is performed to decide choosing OLS or RE with the null hypothesis of no variances across entities. If the null hypothesis is rejected, we perform RE and use the Hausman test to decide choosing RE or FE, with the null hypothesis of non-systematic difference in coefficients. Furthermore, we employ the Wooldridge test for serial autocorrelation and Wald test for heteroskedasticity (Wooldridge, 2010).

However, it is found that income inequality may have the feedback effect of on economic freedom (Apergis et al., 2014; Murphy, 2015), causing the potential endogeneity issues. To overcome this problem, we conduct the estimation method of two-step System Generalized Method of Moments (SGMM) to check the robustness for our results (Blundell and Bond, 1998). By performing SGMM, the lagged levels of dependent variable and the first difference of independent variables are used as instruments for differenced equation, while for level equation it is instrumented by the lagged differences of the dependent variable. As proposed by Arellano and Bond (1991) for the post-estimation of SGMM, we conduct: i) the Arellano and Bond test to ensure the residuals are not second-order correlated (AR2); and ii) the Sargan test to check the validity of specifications and instruments. To control the impacts of technological changes over time and the issue of instrument proliferation, we also add the year dummies and the restricted number of lags for estimations, respectively.

5. Results and discussions

Based on the Phillips–Perron unit root test (Choi, 2001), we perform Fisher stationary test to check the stationarity for panel data. Results reject the null hypothesis of getting unit-roots for income inequality, governance quality, economic freedom, business freedom,

labour freedom, monetary freedom, trade freedom, investment freedom, financial freedom, inflation, and FDI, showing the stationarity of these variables at levels. Nevertheless, we accept the null hypothesis for education and employment, indicating that these variables are not stationary. For further statistical analysis, these variables are first-differenced to be stationary [2].

We start our regression with OLS and RE for panel data. Results of the Breusch and Pagan Lagrangian multiplier tests reject the null hypothesis of no variances across countries, indicating that OLS is not appropriate. Thus, we continue conducting FE. Then, results from Hausman tests reject the null hypothesis of non-systematic difference in coefficients, showing that FE is an appropriate estimator. Results of Wooldridge tests reveal the presence of autocorrelation under FE. Therefore, we apply the Stata command "xtregar" to solve serial correlation for FE estimations. Finally, the SGMM estimator is used to control the potential endogeneity.

The empirical model (3) is estimated in two specifications. In the specification (1), we examine the impact of overall EF, GQ, and EF-GQ interaction on GINI. Then in the specification (2), we decompose EF into six dimensions (BF, LF, MF, TF, IF, FF), and investigate the effects of these dimensions, GQ, and interactions of these dimensions with GQ on GINI. Control variables are also included in both specifications. Estimation results and relevant tests are provided in Table 2.

Table 2. Estimation results for Eq. (3) by FE and SGMM

Dependent variable: GINI				
Regressors	(1)		(2)	
	FE	SGMM	FE	SGMM
GINI (-1)		0.930***		0.837***
		(14.99)		(9.29)
EF	-0.254***	-0.318***		
	(4.05)	(3.77)		
BF			0.036**	0.028**
			(2.06)	(2.11)
LF			-0.383***	-0.443***
			(8.92)	(9.68)
MF			0.132**	0.083**
			(2.10)	(2.16)
TF			-0.151***	-0.197***
			(3.22)	(4.13)
IF			-0.101**	-0.126*
			(2.34)	(1.87)
FF			0.121***	0.115***

[2] Results are not reported here to save spaces, but they are available upon requests.

			(2.71)	(0.64)
GQ	-9.135***	-8.68***	-10.23***	-11.55***
	(3.71)	(4.53)	(3.25)	(4.86)
EF*GQ	-0.88***	-0.84***		
	(3.38)	(2.79)		
BF*GQ			-0.166***	-0.183***
			(2.95)	(3.32)
LF*GQ			-0.294***	-0.37***
			(5.57)	(6.55)
MF*GQ			-0.467***	-0.353***
			(6.90)	(2.72)
TF*GQ			-0.293***	-0.378***
			(5.42)	(6.43)
IF*GQ			-0.05**	-0.068*
			(2.08)	(1.93)
FF*GQ			-0.206**	-0.283**
			(1.98)	(2.32)
INF	0.053**	-0.032***	0.039**	0.047*
	(2.09)	(4.39)	(2.23)	(1.89)
D.EDU	-0.027***	-0.034***	-0.041***	-0.074***
	(3.34)	(3.57)	(2.63)	(2.88)
FDI	-0.127***	-0.139**	-0.167***	-0.095**
	(2.71)	(2.03)	(2.74)	(2.34)
D.EMP	-0.0128**	-0.027***	-0.025**	-0.039**
	(2.35)	(5.37)	(2.28)	(2.21)
Year dummies	Yes	Yes	Yes	
Constant	56.989***	54.436***	68.497***	71.457***
Obs	384	369	384	369
Wooldridge test	276***		211***	
Hausman test	198***		153***	
AR(1)-P		0.080		0.032
AR(2)-P		0.261		0.475
Sargan-P		0.625		0.527

*Absolute T-statistics appear in brackets. ***, ** and * denote significance at 1%, 5% and 10%, respectively. P: P-values of respective tests.*

Main findings from Table 2 are revealed as follows.

First, free market – proxied by the overall economic freedom – and governance quality negatively affect income inequality at the significant level of 1% in both estimators of FE and SGMM. On the one hand, the inequality-reducing impact of economic freedom is in line with Berggren (1999), Scully (2002), and Clark and Lawson (2008), supporting the view that economic freedom opens more opportunities to those at the lower end of the income distribution. On the other hand, the role of governance cannot be denied in the battle against income inequality, which is consistent with Chong and Gradstein (2007), Carmignani (2009), Huynh and Nguyen (2020), and Huynh (2021). Remarkably, the negative coefficients of the interaction term (EF*GQ) imply that the improvement in governance quality intensifies the decreasing effect of free market on

income inequality. This finding illustrates that a free market and a governance are not substitutes in dealing with issues of income distribution, and the mixed economy can significantly tackle with income inequality in developing Asia.

Second, the multi-dimensional analysis statistically shows that the different components of economic freedom have different effects on income inequality. On the one hand, the negative coefficients of EF (α_1) proxied by labour freedom, trade freedom, and investment freedom, as well as the negative interaction terms of these variables and GQ (α_3) illustrate that labour freedom, trade freedom, and investment freedom reduce income inequality, and the improvement in GQ strengthens these beneficial impacts. On the other hand, the positive coefficients of EF (α_1) represented by business freedom, monetary freedom, and financial freedom, combined the negative interaction terms of these variables and GQ (α_3) with $\alpha_1 < /\alpha_3/$ demonstrate that the impact of these variables on income inequality depends on GQ.

Based on Eq. (4) and coefficients of business freedom (α_1) and of interaction term (α_3) between business freedom and GQ in the specification (2) under SGMM estimators, the marginal effects of business freedom on income inequality at the minimum, mean and maximum levels of GQ are 0.393, 0.136 and – 0.081, respectively. It is indicated that when business freedom increases by 1%, income inequality at minimum and mean levels of GQ rises by 0.393 and 0.136 units, respectively, but income inequality at the maximum GQ falls by 0.081 units. Therefore, the effect of business freedom on income inequality turns statistically negative at the at the maximum level of GQ. The threshold of GQ at which the effect of business freedom on income inequality turns statistically negative from the positive sign is 0.153 by setting Eq.(4) = 0, indicating that when GQ is below this level, business freedom drives income inequality up, but above this level business freedom decreases income inequality. Similarly, the thresholds of GQ at which the effects of monetary freedom and financial freedom on income inequality turn statistically negative from the positive sign are 0.235 and 0.406, respectively. Table 3 presents the marginal effects of business freedom, monetary freedom, and financial freedom on income inequality on the presence of GQ in 23 developing Asian countries. It can be seen that in most countries, except Malaysia and Bhutan, business freedom and monetary freedom exacerbate income inequality since their levels of GQ are below the threshold values. The positive impacts of business freedom and monetary freedom are strong in countries with low GQ such as Myanmar, Yemen, Tajikistan, and Pakistan; but become

weaker in those countries with improved GQ such as Jordan, Mongolia, India, Thailand, and Vietnam; and then turn negative in Malaysia and Bhutan – two countries with GQ above the threshold values of 0.153 and 0.235. Remarkably, financial freedom increases income inequality in all countries because no countries has GQ levels above the threshold value of 0.406.

Table 3. Marginal effects of business freedom, monetary freedom, and financial freedom on income inequality in the presence of GQ in 23 developing Asian countries.

Country	GQ	Marginal effect of BF	Marginal effect of MF	Marginal effect of FF
Bangladesh	-0.891	0.191	0.398	0.367
Bhutan	0.243	-0.016	-0.003	0.046
Cambodia	-0.800	0.174	0.365	0.341
China	-0.501	0.120	0.260	0.257
India	-0.233	0.071	0.165	0.181
Indonesia	-0.471	0.114	0.249	0.248
Iran	-0.973	0.206	0.426	0.390
Jordan	-0.051	0.037	0.101	0.129
Kazakhstan	-0.562	0.131	0.281	0.274
Kyrgyzstan	-0.809	0.176	0.368	0.344
Laos	-0.953	0.202	0.419	0.385
Lebanon	-0.639	0.145	0.308	0.296
Malaysia	0.326	-0.032	-0.032	0.023
Mongolia	-0.066	0.040	0.106	0.134
Myanmar	-1.425	0.289	0.586	0.518
Nepal	-0.794	0.173	0.363	0.340
Pakistan	-1.021	0.215	0.443	0.404
Philippines	-0.405	0.102	0.226	0.230
Sri Lanka	-0.285	0.080	0.184	0.196
Tajikistan	-1.164	0.241	0.494	0.444
Thailand	-0.184	0.062	0.148	0.167
Vietnam	-0.487	0.117	0.255	0.253
Yemen	-1.359	0.277	0.563	0.500

Third, other key determinants of income inequality are confirmed in the context of developing Asia, including inflation, education, FDI, and employment. On the one hand, inflation rate worsens income inequality, being consistent with Law and Soon (2020). On the other hand, education, FDI, and employment are found to reduce income inequality, supported by Gregorio and Lee (2002), Battistón et al. (2014); Aitken et al. (1996), Huynh (2021); Mocan (1999), and Huynh and Nguyen (2020), respectively.

6. Conclusion

This paper empirically examines how a free market, a governance quality, and their interaction simultaneously affect income inequality in 23 Asian developing countries over the period 2000-2019. Especially, different dimensions of a free market proxied by various components of economic freedom are analysed. Results show that the overall economic freedom and three of its components including labour freedom, trade freedom, and investment freedom reduce income inequality; but other components including business freedom, monetary freedom, and financial freedom widen income inequality. Meanwhile, the governance quality not only decreases income inequality, but also intensifies the beneficial impacts of the overall economic freedom and those respective components of economic freedom on income equality. Notably, at certain thresholds of governance quality, the detrimental impacts of business freedom, monetary freedom, and financial freedom on income equality turn into the advantageous ones. In addition, other determinants including education, FDI, and employment are found to lessen income inequality while inflation rate aggravates it.

The above findings indicate various interesting policy implications for developing Asian countries in the battle against income inequality by appropriately combining various dimensions of free market and the quality of governance. First, governments of developing Asian countries should utilize free market in terms of labour freedom, trade freedom, and investment freedom to reduce income inequality. Second, governments should continue improving the quality of governance to enhance the equality of income distribution. Third, when boosting economic freedom in terms of business freedom, monetary freedom, and financial freedom, governments should simultaneously take other solutions into consideration to reduce income inequality, unless the countries obtain certain thresholds of governance quality. Fourth, governments should combine appropriate dimensions of free market and the governance quality in boosting the equality of income distribution in Asian developing countries. Fifth, other policies to abate income inequality should concentrate on controlling inflation, enhancing education, attracting FDI inflows, and creating more employment.

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