

Islamic Banking and Income Inequality: The Role of Corporate Social Responsibility

(Perbankan Islam dan Ketaksamaan Pendapatan: Peranan Tanggungjawab Sosial Korporat)

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ABSTRACT

The objective of this study is to analyse whether engaging more actively in corporate social responsibility (CSR) enhances the effectiveness of Islamic banks in narrowing income inequality in the selected Organization of Islamic Cooperation (OIC) countries. Both fixed-effect and random-effect models representing static model as well as generalized method of moments approach of dynamic model are employed to estimate the sample of 24 OIC countries for the period from 2006 to 2013. The results suggest that Islamic banking has potential to reduce income inequality via Islamic financing and CSR further helps to reduce income inequality. In addition, the findings suggest that Islamic financial institutions able to reduce income inequality further if they actively engage in CSR. However, small size of CSR activities is unlikely to be effective in reducing income inequality..

Keywords: Islamic banks; corporate social responsibility; OIC countries; dynamic model

ABSTRAK

Tujuan kajian ini ialah untuk mengalisis sama ada tanggungjawab sosial korporat (CSR) yang lebih aktif oleh bank-bank Islam meningkatkan kecekapan bank-bank Islam dalam mengecilkan ketaksamaan pendapatan di negara-negara Organisasi Kerjasama Islam (OIC) terpilih. Kedua model kesan tetap dan rawak mewakili model static dan panel momen teritlak dari model dinamik untuk mengukur sampel 24 negara OIC bagi tempoh dari 2006 hingga 2013. Keputusan kajian mencadangkan bahawa perbankan Islam berpotensi untuk mengurangkan ketaksetaraan pendapatan melalui pembiayaan dan CSR membantu mengurangkan ketaksetaraan pendapatan. Tambahan lagi, dapatan kajian mencadangkan bahawa institusi kewangan mampu untuk mengurangkan ketaksetaraan pendapatan jika aktif dalam CSR. Namun, aktiviti CSR yang kecil tidak begitu berkesan.

Kata kunci: Bank-bank Islam; tanggungjawab sosial korporat; negara-negara OIC; model dinamik

INTRODUCTION

Income inequality is a gap of income between the rich and the poor. It occurs due to the discrepancy between outcomes and opportunities even without the intervening of human's control like gender, ethnicity, family history and birth of place. It is because fair income equality can avoid social illnesses such as deprived health, short life expectancy, unbelievable social trust, stumpy status of women, mental disorders, killings, teenage pregnancies, illiteracy, intoxication, drug exploitation

and delinquency (Zagorski et al. 2014). In addition, it also can impair the community's condition through child bullying, more disorganisation of housing conditions, erosion of the social trust, deterioration of the political participation, and declination of life satisfaction (Werfhorst & Salverda 2012). That is why income inequality is an importance issue to the economists and governments around the world.

In order to curb this issue, banking industry could play role in changing the unequal distribution of income of the individuals (Stiglitz 2012). As time

passes by, when financial development comes to be matured and expected to be effective, income inequality tends to improve (Zhang 2014). An effective financial development can help in addressing the issue of income inequality through two channels. The first channel is investment become attractive due to cheaper credit. It is where the small entrepreneurs gain greater benefits to start up or expand their businesses. The access to financial resources helps the entrepreneurs to create employment opportunities, increase output, and improve the welfare of the previously poor (Zhang 2014). The second channel is borrowing. The financially disadvantaged families are able to utilize the fund in order to invest in education and health for them and their generations, which will encourage human capital creation (Tiwari et al. 2013). However, the current conventional finance hurts the poor and benefits the rich, resulting in widening gap between the poor and the rich (Sehrawat & Giri 2015). This situation happens because the current conventional banking system promotes inequitable distribution by shifting all the risks to the borrowers. Moreover, in the present setup, only the wealthy can ask for the loan due to furnishing of collateral is the primary criterion for obtaining money, while the losses are shared by all types of savers, including the poor (Fasih 2012). The conventional banking also prevents the entrepreneurial ability and discourages innovation by small enterprises in getting new methods of production and trainings due to limited access to credit. Conventional banks tend to confine their lending to the well-established big companies as they more concern on their ability to pay depositors and safe return of the principal loan (Fasih 2012).¹

As an alternative, Islamic finance could help in reducing income inequality. It is because Islamic finance, which is based on the Holy Quran and prophetic messenger and guided by Maqasid Shariah (or objectives of Islamic Law) should be relatively more welfare-oriented to the society, especially the poor.² Maqasid Shariah covers various scopes of human needs as the main objective of the Shariah is the preservation and protection of the basic necessities (Laldin & Furqani 2013).³ Without that necessities, man's life would probably be filled with chaos and thus become worthless (Rosly 2010; Abdulaziz 2010; Mansour et al. 2015). Given the advantageous of Islamic banking, there are long continuous efforts to establish and promote Islamic banking sector. Abedifar et al. (2016) observe that Islamic financial institutions via their offering of Shariah-compatible financial services could have lessened the risk of being excluded from getting access to credit. Financial exclusion from the mainstream conventional banking could be due to two reasons. Firstly, being excluded due to high risk profile. Secondly, Muslims may avoid borrowing from interest-bearing conventional banks. Historically, it is proven that the Islamic banking industry has been

changing incredibly for the past several decades and showed tremendous improvement even during the financial crisis. Various Islamic banking products and services have been offered to cater the needs of private and corporate consumers across the globe. It contributes to the increment of the Islamic financial banking assets. The global Islamic banking assets are on upward trends from approximately USD600 billion in 2008 to more than USD1.6 trillion in the mid- the year 2014 and further increased to USD2.05 trillion in 2017.⁴ In line with this impressive development of Islamic finance sector, in 2015, OIC had come out with a blueprint, OIC-2025 Program of Action.⁵ It is where they agreed on the significance of the Islamic financial development to cater the social issue. Islamic social finance is an effective mechanism for mobilising its reserves in order to overcome the problem of financial exclusion within the poverty alleviation agendas and initiatives. They aim to develop sound and well-regulated Islamic financial system as well as to develop and promote Islamic financial products that can advance socio-economic development in OIC members. Thus, the Islamic financial development could help to minimize income inequality.

Nevertheless, Islamic financial development alone does not seem to be enough to help in reducing income inequality. Apart from Islamic finance is being asymmetric to fair income distribution in OIC countries, Islamic banks also operate as profit maximising entities (Henderson 2007; Bourkhis & Nabi 2013; Imam & Kpodar 2013) and have similarities in the term to the strategies and business model (Bourkhis & Nabi 2013). In fact, the finding of Abedifar et al. (2016) also show a very small impact can be observed from the results. Islam has its own social mechanism through the payment of zakat by companies.⁶ This argument has been supported by Léon & Weill (2018) that Islamic financial development does not really contribute to cushion the issue of credit constraints and Ibrahim (2006), who argues that the practices of Islamic banking in Sudan has neglected its role in poverty alleviation. Although the above issue has been complemented by the zakat payment of financial institutions, zakat contribution is only 2.5% of the Islamic banks' net attributable income. It is a small amount of money and may have limited impact on the society.⁷ That is why alongside zakat, corporate social responsibility could help to improve the effectiveness of Islamic financial institutions in reducing income inequality. It is because corporate social responsibility gives benefits not only to the beneficiaries but also to the contributors.⁸ More importantly, it could not only improve the image of the corporate sector through social license, but also provide the method for risk management in unstable social and political environment (Scholtens & Dam 2007; Gilberthorpe & Banks 2012). At the best of our knowledge, there are limited studies on the effect of

corporate social responsibility on the effectiveness of Islamic banks in curbing income inequality. Some past studies have put emphasis on the role of Islamic finance in bringing higher financial inclusion (see Demirguc-Kunt et al. 2014; Er & Mutlu 2017) or on bank performance (Ascarya & Yumanita 2008; Mallin et al. 2014; Olson & Zoubi 2017), while the studies by Hassan and Latiff (2009) and Zafar and Sulaiman (2019) focus on setting the foundation so that CSR can be implemented cost effectively, and Hassan and Harahap (2010) as well as Nugraheni and KHasanah (2019) explore the disclosure issues of CSR. We could not see any other studies that integrate CSR and Islamic financial development other than this study. Hence, the objective of this paper is to analyse whether higher corporate social responsibility by Islamic banks contributes to the effectiveness of Islamic financial institutions in reducing income inequality in OIC countries by using annual data from 2006 to 2014 and utilize generalized methods of moments (GMM) approach.

Rest of the paper is organized as follows. Section 2 reviews the relevant literatures. Section 3 describes data sources, defines variables and outline empirical methodology. Section 4 explains the results, while Section 5 lastly concludes.

LITERATURE REVIEW

CORPORATE SOCIAL RESPONSIBILIITY

Corporate social responsibility (CSR) can be interpreted as movements on behalf of an organisation that promote some social goods. Which carry value exceeding the immediate benefits to the shareholders. Another definition for CSR is captivating actions which condense the degree of externalised costs or even evade the distributional conflicts (Scholtens & Dam 2007). CSR gives benefits not only to the beneficiaries but also to the contributors. Malik (2014) reviews contemporary literature and summarizes several benefits of CSR namely, enhanced operating efficiency, product market gains, improved employee productivity, capital market benefits, risk management, and earning quality. These benefits can be achieved once firms align their social goals with their corporate goals. On top of these benefits, firms with strong CSR activities have more potential to enhance values of shareholders as well as stakeholders. A theory that supports the social contribution is Raw's theory. This theory is consistent with the social contract style. It considers public interest as their allies rather than a profit-maximizing entity. In a global social development, it is important for emphasising the social responsibility of the privileged as compared to the less privileged in the well-ordered society. The situation of the less privileged had been improved, then, inequalities are socially accepted. For Raw's, there is neither fair

nor unfair if the talents and social fortune are naturally distributed (Renouard & Lado 2012).

Since then, the banking sector should involve in the CSR activities. The Equator Principles (EP) is a policy that supports the effort of taking CSR activities of the bank (Scholtens & Dam 2007). The EP is a voluntary set of strategies for encouraging the responsibility on the social and environmental issue in financing projects. It had been set up by the International Finance Corporation, a member of the World Bank Group. Institutions are required to categorise projects as high (A), medium (B), or low (C) in environmental or social risk. It is a prerequisite of prior to the obtaining the financing approvals. Debtors, institutions, will have to perform an environmental impact assessment (EIA). They must organise an environmental management plan (EMP) for category A and category B projects. Meanwhile, Category C projects do not require an EIA. In submitting for the EP, the lead directors will have to reach an agreement on the categorization of the project (A, B, or C) beside other things. They also look on the nature of the appropriate environmental assessment and treaty package. They also need to categorise of each project according to its social and environmental impact. The EP also can be used to develop finance advisory activities. Institutions are required to report about the performance and progress on an annual basis (Scholtens & Dam 2007). In Western perspective, there are four dimensions of CSR practices which are human resource dimension, environmental dimension, human right dimension and philanthropic dimension. It is where the organisations should protect the health and safety of the stakeholders. The organisation also should treat the employees fairly, promote equal opportunities and invest in education and training. The organisation also should undertake many efforts in conserving the environment like recycle policy, good waste management and energy conservation. In addition, organisation has the role in solving the social problem. They are required to support the charities and participate in the public affairs management. They must play their role beyond monetary matters (Dusuki & Dar 2007).

Despite operating in different framework, Islamic banking systems, however, can have similar value and aspiration when it comes to societal needs. Western CSR practice is consistent with the Islamic principles and the teaching of Islam on the basic point of assisting others. Thus, the dimension of the CSR practices can be applied in the Islamic banking since Islam urges organisation to bring benefits and prevent harm or injury to the society (Dusuki & Dar 2007). However, there are limited empirical studies on the role of Islamic banks in reducing the income inequality as well as on the moderating effect of corporate social responsibility by Islamic banks in improving banks' role on income inequality. This study infers that Islamic banks could reduce income inequality better through greater

involvement in the corporate social responsibility programs.

OTHER DETERMINANTS OF INCOME INEQUALITY

“Kuznets curve” is always used to explain the relationship between income and income inequality (Kuznets 1955; Elmawazini et al., 2013; Tiwari et al., 2013; Rose & Viju, 2014; Batabyal & Chowdhury, 2015). Specifically, Kuznets theory explains a growing income inequality in the initial phase of economic growth, or low level of income. In the latter phase, after income of the country has surpassed certain level of high, income inequality gradually starts to fall (Elmawazini et al. 2013; Kotarski 2015). However, the absence of inverted U-shaped Kuznets curve has been the main attribute in the histories of many American and Asian countries. In the case of Asia, particularly when we refer to the East Asian miracle prior to the 1997 financial crisis, this miracle is not accompanied by Kuznets curve (Acemoglu & Robinson, 2002). In this study, we concur with the later statement that Kuznets curve is hardly prevailed in developing countries but retain the first half of the Kuznets curve that in low income countries, any level of low income will always fail to bring income inequality down. *Therefore, this study hypothesizes that income will have a positive effect on income inequality.*⁹

Batabyal & Chowdhury (2015) is of the opinion that financial development is able to condense inequality to a lesser extent in countries that have large and modern financial sectors. Greenwood and Jovanovic (1990) hypothesize that income distribution may deteriorate at the early stages of financial development, but then, income inequality tends to improve as the progression takes full effect over time. The notion on the function of financial development in enhancing economic growth has been revived in poverty reduction context. Advanced financial sector supports economic growth via two mechanisms. The first mechanism is through cheap credit. Cheaper credit makes investment become more attractive. Small and newly started entrepreneurs are expected to gain benefits if financial institutions can expand their offering to cover prospective small and medium enterprises. It is because it allows creating employment opportunities, to improve output, and to enrich wellbeing of the poor. The second mechanism is via borrowing. Borrowing at low cost allows the financially disadvantaged families to have means to access for education and health of their children as well as support human capital creation. It is because education widens chances and human capital supports innovation and technological progress (Tiwari et al. 2013). While the above advantageous are valid for financial services in general, the ability of Islamic finance to serve better and subsequently solve the issue of inequality is due to Islamic general instruction to service providers to

always give priority to the needy Muslims.¹⁰ Demirguc-Kunt et al. (2014) and Er and Mutlu (2017) highlight the role of Islamic finance in improving the size of financial inclusion. This could be the important explanation that Islamic financial development is capable to assist the neglected people to get financial support to engage in any form of entrepreneurship. Hence, *this study hypothesizes that Islamic finance helps to reduce income inequality in OIC countries.*

According to the Transparency International,¹¹ corruption is defined as the abuse of entrusted power for private gain. Corruption gives negative implications to the country through economic growth, concentration of asset ownership, and tax administration. Economic development may be worsening as results from high corruption. Reduction in growth will distort the rate of poverty alleviation, later, it will increase income inequality. Moreover, a high concentration of asset ownership can influence public policy that is favourable to the poor. Inequality in ownership of assets will limit the ability of the poor to borrow or invest and will increase poverty and income inequality. In addition, corruption decreases revenue from taxes and fees. Corruption can lead to tax evasion, poor tax administration, disproportionately favours the wealthy population groups and reduce the progressivity of the tax system. With less government revenue collection, we can expect less poverty-alleviating social programs can be expected. Batabyal and Chowdhury (2015) find that the higher corruption is associated with higher income inequality. Therefore, *this study hypothesizes that there is a worsening effect of corruption on income inequality.*

Prior studies describe inflation as having significant impact on income inequality (Jalil & Feridun 2011; Li & Yu 2014; Siami-Namini & Hudson 2019). In one hand, higher inflation rate may cause real wages to decrease, but on the other hand, it may lead to higher employment and later improvement in the income inequality (Jalil & Feridun 2011). However, inflation is also observed as exerting positive or worsening inequality by other studies such as Li and Yu (2014) and Siami-Namini and Hudson (2019). This is because inflation will reduce the real fixed and low income earned by poor people. Conversely, the rich can easily adjust to inflation given their huge assets. In the nutshell, *this study hypothesizes that inflation is significantly having positive effect on income inequality.*

METHODOLOGY

As discussed in the above section, we can see that several factors have been identified as crucial, including corporate social responsibility in explaining income inequality as summarized in the following equation:

$$IE_{i,t} = \gamma_0 + \gamma_1 IFD_{i,t} + \gamma_2 CSR_{i,t} + \gamma_3 IFD*CSR_{i,t} + \gamma_4 GDPC_{i,t} + \gamma_5 COR_{i,t} + \gamma_6 INF_{i,t} + \varepsilon_{i,t} \quad (1)$$

where *IE* is income inequality, *IFD* is Islamic financial development, *CSR* is corporate social responsibility by Islamic banks, *IFD*CSR* is the interaction variable between corporate social responsibility from Islamic banks and Islamic financial development, *GDPC* is gross domestic product per capita, *COR* is corruption index, *INF* is inflation rate, γ_s are parameters to be estimated, ε is error term, *i* represents country and *t* is time. All variables enter in the logarithmic form. As argued by Ibrahim (2006), Imam & Kpodar (2013), Abedifar et al. (2016) and Léon & Weill (2018) that Islamic financial development does not really contribute to cushion the issue of credit constraints and expand the level of financial inclusion to include preferably those marginalized people, the interaction between corporate social responsibility and Islamic financial development (*IFD*CSR*) is included to confirm the role of CSR. In other words, the size of CSR activities is expected to moderate the effectiveness of Islamic financing in reducing income inequality.

There are three measures of income inequality which are Watts index, MLD index, and Gini Index (Khan et al. 2014). There is no specific theory in telling which measurement should be used to explain income inequality. This study uses Gini co-efficient for the income inequality measurement because of the availability of the data (Lee 2008; Ozawa & Kim 2000). For the measurement of Islamic financial development (*IFD*), several possible measurements from past literature have been designed, although mainly for conventional financial environment such as credit to private sector and personal credit (Jalil & Feridun 2011; Arora 2012; Batabyal & Chowdhury 2015), population per bank branch (Arora 2012), money and quasi money (M2) and M3 to nominal GDP (Demir et al. 2012; Batabyal & Chowdhury 2015), demographic and geographic institution penetration (Bae et al. 2012), deposit-income ratio (Bae et al. 2012), the ratio of liquid liabilities to GDP (Jalil & Feridun 2011), the ratio of commercial bank assets to the sum of commercial bank and central bank assets (Jalil & Feridun 2011), and financial reform index (Li & Yu 2014). There is no consensus of what measurement of Islamic financial development variable should specifically be included. Moreover, majority of literatures dealt with a dual financial system, the co-existence of conventional and Islamic banking in the countries under study. Given the focus of this study is on Islamic finance, this study uses total financing by Islamic banks (as % of GDP). For the measurement of corporate social responsibility, limited studies are found.¹² The biggest difficulty to find empirical studies dealing with this could be primarily due to unavailability of data albeit growing consensus on what describes CSR. In conjunction with that, this study

examines what would be the effect of CSR if corporate social responsibility stands at 6.25% of the net income of each Islamic bank in OIC countries.¹³ We believe that Islamic banks will certainly involve in CSR as CSR can bring in not only good image to the banks, but also because it is tax exempted. The measurements for other variables are relatively straightforward. Gross domestic product per capita and inflation are using the standard measurement available from World Bank (2016a), while corruption index is taken from Worldwide Governance Indicators (World Bank 2016b).

When all variables are transformed into logarithm, and *X* represents all explanatory variables, Eq. (1) can be simplified as follows:

$$\ln IE_{i,t} = \alpha + \beta \ln X_{i,t} + \varepsilon_{i,t} \quad (2)$$

where the prefix *ln* represents the natural logarithm, is a set of explanatory variables that are deemed to be important to explain income inequality. Initially, we estimate Eq. (2) by using static approach, namely pooled model (PM), fixed-effect model (FEM) and random-effect models (REM). Considering several limitations of static approach, especially in dealing with endogeneity issue, complementary analysis will be conducted by using dynamic panel of generalized method of moments (GMM) technique (Arellano and Bond 1991; Blundell & Bond 1998). Hence, we estimate Eq. (2) by using GMM and the modified dynamic panel data model can be shown as in Eq. (3):

$$\ln IE_{i,t} = \alpha_1 + \gamma \ln IE_{i,t-1} + \beta \ln X_{i,t} + \varepsilon_{i,t} \quad (3)$$

Following Arellano and Bond (1991), the first step is to take first-difference under difference-GMM in order to wipe out country-specific effect under the conditions that the disturbance term is not serially correlated and the level of the explanatory variables are weakly exogenous (uncorrelated with future error terms). However, the lagged difference in dependent variable may be correlated with the disturbance term and may produce endogeneity among the explanatory variables (Choong et al. 2010; Ibrahim & Law 2014). To overcome this condition, Arellano and Bover (1995) recommend the first difference GMM regression further combined with an estimator in levels to produce a system, which is known as a system-GMM estimator. In the estimation, these moment conditions are applied to calculated the difference estimator, as follows:

$$\begin{aligned} E[FS_{i,t-s}(\varepsilon_{i,t} - \varepsilon_{i,t-1})] &= 0 \text{ for } s \geq 2, t = 3, \dots, T \\ E[X_{i,t-s}(\varepsilon_{i,t} - \varepsilon_{i,t-1})] &= 0 \text{ for } s \geq 2, t = 3, \dots, T \end{aligned} \quad (4)$$

Moreover, Blundell and Bond (1998) indicate that there are two different statistics, namely serial correlation and Hansen tests to further examine the validity of the GMM estimator. The serial correlation test examines the null hypothesis of no first-order serial correlation and no second order serial correlation in the residuals. Rejection

of the null of no first-order serial correlation $AR(1)$ and failure to reject the absence of the second-order serial correlation $AR(2)$ validate the models. The second test is the Hansen test of over-identifying restrictions, which is used to examine the overall validity of the instruments by comparing the moment's conditions with their sample analogue. Finally, the difference-Sargan (Dif-Sar) statistic in GMM approach is used to compare the superiority between the difference GMM (DIFF-GMM) and system GMM (SYS-GMM). SYS-GMM estimator requires more assumptions than DIFF-GMM, but if the assumption hold, it achieve a greater efficiency and scalar statistic will justify (Blundell & Bond 1998). This study utilises the data from 24 OIC countries, namely Albania, Azerbaijan, Bangladesh, Djibouti, Egypt, Indonesia, Iran, Iraq, Jordan, Kazakhstan, Kyrgyzstan, Malaysia, Maldives, Mauritania, Nigeria, Pakistan, Qatar, Senegal, Sudan, Syria, Tunisia, Turkey, United Arab Emirates, and Yemen. These countries have been chosen due to their long practices of Islamic finance in the countries. The data are mainly obtained from Bankscope, World Development Indicators (World Bank 2016a) and Worldwide Governance Indicators (World Bank 2016b).

RESULTS AND DISCUSSION

We start our discussion by looking at the summary of statistic for each variable as shown in Table 1. We can see huge variation in the size of CSR by each country as shown by the highest standard deviation. The mean

of 11.4 also suggests that generally Islamic banks are doing much for CSR.

Moving on to the correlation analysis as shown in Table 2, generally we observe that there is no serious issue of multicollinearity. The positive association between CSR and income inequality could be surprising. This could be due to less impressive size of CSR by Islamic banks in most countries under study.

Moving on to our main focal point, which is about relationship between CSR and income inequality, we engage into two types of techniques, namely static and dynamic models. For static linear panel model approach, PM, FEM and REM are utilized. In order to choose the best estimation, three hypotheses testing are performed as per Table 3. Poolability test, which is used to evaluate the option between PM and FEM indicates rejection of the null hypothesis. It means that fixed effect estimation is preferred. Meanwhile, Breush-Pagan LM test fails to reject null hypothesis (or pooled model is the best) and random effect estimation is preferred. The third test is Hausman test that evaluates the choice between fixed effect and random effect estimations, which shows that the fixed-effect model is preferred. In this model, only total financing is observed as significant and demonstrates its ability to bring income inequality down.

Static panel data is subjected to several econometric issues, mainly endogeneity issue. To solve this issue, the dynamic panel GMM technique is adopted. As per Table 4, the result for the first order of autocorrelation of this basic model signifies the rejection of the null hypothesis. Meanwhile, the results of the second order

TABLE 1. Descriptive analysis

	Mean	Std. Deviation	Minimum	Maximum
Income inequality (IE)	36.394	5.421	16.800	48.800
Total financing (TF)	6.173 ^a	8.728	0.078	215.40 ^a
Social contribution (CSR)	0.126 ^a	6.220	0.000	3.356 ^a
GDP per capita (GDPC)	0.164 ^a	2.521	0.019 ^a	1.381 ^a
Inflation (INF)	8.381	7.643	-10.067	53.231
Corruption (COR)	3.353	0.617	2.315	4.357

Note: Corruption has been transformed into a positive score by adding 2.5, ranging from 0 (the best) to 5 (the worst). ^aFigure in '00,000.

TABLE 2. Correlation analysis

	lnIE	lnTF	lnCSR	lnGDPC	lnINF	lnCOR
lnIE	1.000					
lnTF	0.122	1.000				
lnCSR	0.083	0.811	1.000			
lnGDPC	0.118	0.182	0.230	1.000		
lnINF	-0.125	0.057	0.046	-0.117	1.000	
lnCOR	0.135	0.368	0.352	0.230	-0.179	1.000

auto-correlation and Hansen test indicate that the model is valid. Dif-Sar test, on the other hand, suggests that SYS-GMM is superior to DIFF-GMM. Since 2-step GMM theoretically tends to outperform 1-step, the subsequent discussion will focus on the results of 2-step SYS-GMM. Based on the results in Table 4, Islamic financial development, CSR of the Islamic banks and the interaction between Islamic financial development and CSR are statistically significant. All variables have negative relationships with income inequality. Islamic financial development has negative relationship with income inequality and statistically significant. With the negative coefficient, Islamic financial development

is proven to be capable to reduce income inequality in OIC countries. However, the size of the effect seems to be too small and negligible.

The result of this model also indicates that corporate social responsibility has negative relationship with income inequality as well as statistically significant. It means that corporate social responsibility does help in improving income inequality. It is consistent with two theories that adopted in this study, which are Maqasid Shariah and Islamic accountability. Maqasid Shariah by definition can be understood as the goals and objectives of the Shariah (Rosly 2010; Laldin & Furqani 2013; Saifuddeen et al. 2014; Mansour et. al 2015). Some of

TABLE 3. Regression analysis in static framework

	PM	REM	FEM
Constant	2.111(7.132)***	1.989(5.793)***	1.077(1.931)
lnTF	0.039(0.765)	-0.054(-0.956)	-0.070(-1.981)**
lnCSR	-0.074(-1.694)	-0.067(-1.404)	-0.071(-1.059)
lnTF*CSR	-0.016(-1.664)	-0.025(-1.382)	-0.012(-0.970)
	Model criteria		
Poolability Test	-	-	1.64[0.040]**
Breush-Pagan LM Test	1.64[0.100]		-
Hausman Test	-	4.21[0.239]	

Note: Figure in () stands for t-value and [] stands for p-value. Asterisks ** and *** indicate significant at 5% and 1%, respectively. Marginal effect is not calculated as the interaction term is not significant.

TABLE 4. Regression analysis in dynamic framework

	DIFF-GMM		SYS-GMM	
	1-Step	2-Step	1-Step	2-Step
lnIE(-1)	-0.288 (-2.422)***	-0.287 (-6.372)***	-0.213 (-2.403)**	-0.200 (-4.988)***
Constant	3.498 (4.061)***	3.507 (3.812)***	4.272 (5.195)***	4.239 (1.981)*
lnTF	-0.003 (-0.525)	-0.007 (-1.392)	-0.006 (-1.488)	-0.005 (-5.052)***
lnCSR	-0.038 (-1.307)	-0.017 (-2.337)**	-0.004 (-2.057)**	-0.018 (-3.603)***
lnTF*CSR	-0.013 (-1.273)	-0.011 (-2.527)**	-0.019 (-1.989)**	-0.020 (-4.172)***
	Model criteria			
AR(1)	0.012**	0.015**	0.022**	0.029**
AR(2)	0.316	0.392	0.452	0.218
Hansen	0.221	0.377	0.625	0.316
Dif-Sar	-	-	0.355	0.428
	Marginal Effecta			
Minimum	0.000	0.000	0.000	-0.005
Maximum	0.000	-0.049	-0.086	-0.100

Note: Figure in () stands for t-value. Asterisks ** and *** indicate significant at 5% and 1%, respectively. AR, Hansen and Dif-Sar refer to p-value. ^a 0.000 indicate no effect.

the Western Islamic scholars defined it as the higher objective of Islamic laws (Abdulaziz 2010; Auda 2011; Ibrahim et al. 2014). It set rulings on how people should behave that enable people to create a set of norms, values and laws that cover all aspects of life such as political, cultural and civilizational matters within Islamic framework. It does not only mean to the Muslim community but to all civilisation. In other words, Maqasid Shariah explains an inclusive theoretical framework, in which it comprises values and goals for the Islamic vision of life. It also contains all the legal matters about the mechanical and procedural aspects. In practical, Maqasid Shariah directs us toward a balance method in deriving laws from the text that resulted in a moderate and just outcome. There are three types of categories in Maqasid Shariah, which are essentials or *dharuriyyat*, necessities or *hajiyyat* and desirables or *tahsiniyyat* (Abdulaziz 2010; Auda 2011; Saifuddeen et al. 2014; Ibrahim et al. 2014; Mansour et al. 2015). The categorization is parallel with the result of this model that corporate social responsibility improves income inequality as corporate social responsibility can be placed under the category of the essential and necessities. Although corporate social responsibility is not compulsory to be practiced by the laws, the result of this study also proves that corporate social responsibility can help to alleviate income inequality. At the same time, it could serve to eliminate social conflicts given that the three objectives of having Islamic financial systems are to promote socio-economic justice. This objective of Shariah is fixed, established and permanent but the means are subject to change. It is because the means must be tailored to effectively comprehend those fixed goals in the context of ever-changing circumstances. Creativity is required to generate the appropriate means for that end (Laldin & Furqani 2013). Furthermore, establishing socially responsible activities is not an option according to the Shariah. The concept social obligation (*fard kifayah*) places responsibility on those who are capable or better off to help those who are incapable or who are worse off. Islamic financial institutions should incorporate Maqasid Shariah into account in setting their corporate objectives and policies as well as to use them to verify their level of compliance with the true Islamic principles. The advancement of Islamic finance will be valued by the realization of the spirit of brotherhood and cooperation, social equality and justice, just and fair allocation of resources, elimination of poverty, protection of the environment and achievement of general wellbeing (Laldin & Furqani 2013).

Moreover, corporate social responsibility also improves income inequality parallel with the theory of Islamic accountability. Islamic accountability is derived from the concept of oneness of Allah (Tawhid). The concept of oneness of Allah suggests total submission to Allah's will and following the religious requirement in

all aspects of life (Saad et al. 2014). The central point to the Islamic accountability concept is the eternal reward and punishment in the next world. It should provide strong motivations for Muslims to be accountable for their actions in this world (Nahar & Yaacob 2011). Islamic accountability can be explained through two concepts. The first concept is the accountability as the vicegerent of Allah. The second concept is the contract between the principal and agent, similar to the conventional perspectives. To execute this kind of concept, an agent should do a thorough analysis on the effect of the activities toward Islamic, social, economic and environmental issues. Based on these assessments, an agent needs to solve one of the societal problems. An agent is not allowed to do any harmful activities to another human being, even to other creatures (Yaya & Mohd Ibrahim 2005). Due to that, Islam urges Muslims to pay charity as it is a specific tool to the fulfilment of the accountability. The mandatory zakat helps to shift any institution goal from wealth orientation to social maximisation. It is where it encourages people to maximise wealth and allocate the wealth in the form of zakat for the social benefits (Yaya & Mohd Ibrahim 2005; Saad et al. 2014). In addition, Islamic banks does not lose their image as the financial intermediaries or even receive lesser income by giving social contribution. It is because CSR gives benefits not only to the beneficiaries but also to the contributors. It is not only improving the image of the corporate sector through social license, but also providing the method for risk management in unstable social and political environments (Scholtens & Dam 2007; Gilberthorpe & Banks 2012). CSR gives means for safer technologies and better stakeholder engagement, improves the business's model of efficiency, gives motivation to the shareholder and increases the employee perceptions (Gilberthorpe & Banks 2012). Besides, the result of this study parallel with Raw's theory that states social contribution could help in improving socioeconomic condition by reducing the income gaps. This theory is also consistent with the social contract approach that considers society as a mutual benefit association rather than a profit-maximizing entity. In a global social development, it is important for underlining the social responsibility of the privileged rather than the less privileged in the well-ordered society. Thus, inequalities are socially acceptable only if they improve the situation of the less privileged (Renouard & Lado 2012). In practice, the corporate social responsibility from the Islamic banks play roles in helping in lowering income inequality. The significant effect of interaction term further justifies that the effectiveness of Islamic finance, especially Islamic banks in assisting income inequality reduction may be strengthened if Islamic banks can offer more CSR funds to the public. As we can see from the bottom of the Table 4, the marginal effect of Islamic financial development on income inequality has been

-0.100 when CSR activities are at maximum, relative to when the level of CSR is at minimum, which stands at -0.005 only.

Robustness test has been performed for this model by including other variables such as GDPC, inflation and corruption as per Table 5. The results of poolability, BP-LM and Hausman tests suggest that REM is preferred.

Based on REM results, inflation is the only variable that is significant. The insignificant *TF* and *CSR* could suggest that the current practices of Islamic banking are not so pro-poor as well as lack of CSR to compensate for lacking of pro-poor attributes.

Given the poor results of static approach, which partly could be due to the endogeneity issue, we re-

TABLE 5. Regression analysis of the augmented model in static framework

	PM	REM	FEM
Constant	2.614(1.852)**	2.819(1.881)**	-28.680(-2.683)**
lnTF	0.037(0.713)	0.054(0.857)	0.072(1.816)*
lnCSR	-0.078(-1.783)*	-0.067(-1.415)	-0.050(-0.777)
lnTF*CSR	-0.006(-1.710)*	-0.004(-1.296)	-0.003(-0.611)
lnGDPC	1.055(0.862)	1.055(0.676)	0.709(2.933)**
lnCOR	0.182(0.805)	0.177(0.745)	0.226(0.795)
lnINF	-0.527(-1.614)	-0.647(-1.927)*	-0.351(-2.314)**
	Model criteria		
Poolability Test	-	-	2.154[0.003]***
Breush-Pagan LM Test	1.683[0.097]*		-
Hausman Test	-		18.147[0.006]***
	Marginal Effecta		
Minimum	0.000	0.000	0.072
Maximum	-0.027	0.000	0.072

Note: Figure in () stands for t-value and [] stands for p-value. Asterisks *, ** and *** indicate significant at 40%, 5% and 1%, respectively. ^a 0.000 indicate no effect.

TABLE 6. Regression analysis of augmented model in dynamic framework

	DIFF-GMM		SYS-GMM	
	1-Step	2-Step	1-Step	2-Step
lnIE(-1)	-0.217(-1.77)*	-0.246(-4.72)***	-0.175(-1.90)	-0.155(-3.97)**
Constant	-5.869(-0.36)	6.112(0.65)	2.949(0.88)	3.922(1.65)
lnTF	-0.007(-0.21)	-0.003(-1.98)*	-0.005(-1.22)	-0.003(-2.01)*
lnCSR	-0.134(-1.22)	-0.166(-2.53)**	-0.129(-1.24)	-0.130(-2.85)***
lnTF*CSR	-0.013(-1.18)	-0.016(-2.74)*	-0.012(-1.189)*	-0.013(-3.39)***
lnGDPC	1.234(0.65)	-0.291(-0.23)	0.456(1.85)*	0.417(6.70)***
lnCOR	0.290(0.48)	0.559(0.84)	-0.024(-0.04)	-0.208(-0.29)
lnINF	-0.965(-2.09)**	-0.963(-11.95)***	-1.006(-2.16)**	-0.979(-13.63)***
	Model Criteria			
AR(1)	0.031	0.038	0.033	0.021
AR(2)	0.743	0.453	0.732	0.934
Hansen	0.333	0.388	0.310	0.428
Dif-Sar	0.432	0.382	0.511	0.339
	Marginal Effecta			
Minimum	0.000	-0.003	0.000	-0.003
Maximum	0.000	-0.075	-0.054	-0.062

Note: Figures in () stand for t-value. Asterisks *, ** and *** indicate significant at 10%, 5% and 1%, respectively. AR, Hansen and Dif-Sar refer to p-value. ^a 0.000 indicate no effect.

estimate the model by using dynamic approach of GMM. As per Table 6, all models are valid given the significant result of $AR(1)$, but insignificant results of $AR(2)$ and Hausmann tests. Insignificant *Dif-Sar* also suggests that 2-step SYS-GMM is preferred. In this model, all the independent variables except corruption are statistically significant. The significant lagged income inequality further justifies the validity of using dynamic model. The result of Islamic financial development is proven to reduce income inequality. Nevertheless, the size of the impact is too small or negligible. Considering the potential role of CSR to assist in lowering income inequality, the significant interaction term has confirmed the hypothesis given the expected sign is realized. As shown at the bottom of Table 6, when CSR is at minimum, Islamic financial development still maintains its vital role but the effect is manifold when the size of CSR is big enough. Among the possible explanation to low CSR could due to the profit equalization reserves and investment risk reserves, which is calculated from the total financing. The two reserves are to protect banks' interest against various forms of risk. There are higher risks of the default due to withdrawal and reputation of Islamic products in future. As part of the strategies to smoothen income to the stakeholders, Islamic banks need to keep some percentage of money as reserves (Ismail 2010; Htay & Salman 2013; Mohd Isa & Abdul Rashid 2014). Reduction in CSR is inevitable as higher the total financing will always ask for more significant amount of reserves. Lower CSR will imply low effectiveness in combating income inequality.

On other variables, GDP per capita surprisingly shows a positive impact, which is worsening income inequality, while inflation unexpectedly demonstrates income-inequality-reducing effect. The counter-equality effect of GDP per capita could simply highlight an absence of effective policies targeting income inequality in the selected OIC countries. Meanwhile, as inflation leads to a reduction in real wealth of the rich more than the poor, the scenario is reflected in the negative effect of inflation on income inequality (Jalil & Feridun 2011). The insignificant role of corruption is also against the expectation. However, this could be due to the increasing size of informal sectors in OIC countries (Dobson & Ramlogan-Dobson 2012).

CONCLUSION

As the rapid development of Islamic banking industry is unlikely accompanied better equality of income in OIC countries, the effectiveness of financing by Islamic banking industry *per se* is in big question mark. Hence, the objective of this study is to analyse whether higher engagement in corporate social responsibility by Islamic banks enhances the effectiveness of Islamic financial industry in bringing down income inequality.

In summary, three main findings are observed from this study. Firstly, Islamic banking has potential to bring income inequality down via Islamic financing. Secondly, as expected, CSR also shows a significant desirable impact on income inequality. Thirdly, the result also highlights that Islamic financial development can further improve income inequality if they actively engage in corporate social responsibilities. Nevertheless, small size of CSR activities unlikely to be effective in the effort to reduce income inequality. Carrying Islamic name in the entity's name or the products, Islamic banks should also be serious in sharing the profits with the public, especially those who are socially marginalized. Moreover, tackling poverty may require beyond money assistance. Instead of directly giving money, a more powerful poverty-alleviating CSR programs could be more meaningful and effective to combat income inequality and poverty (Masron & Subramaniam 2019).

However, this study has several limitations. The first limitation is the availability of the data. Some of the data are not available in some countries in OIC, limiting the number of countries can be included in the sample. These countries are mainly those categorized under the third world countries. They do not even have the national database that can be used in this study. Some of the data are being conducted in the interval basis such as every three to five years and there are inconsistent. In conjunction with the first limitation, the second limitation is that this study could only employ the total funding of the Islamic banks as the measurement for the Islamic financial development. This data might not be able to reflect the true pictures of the Islamic financial growth. Similarly, corporate social responsibility is also being calculated based on the net income of the Islamic banks, rather than its true activities for the same reason. The third limitation of this study is the limited focus to banking sector only. Since there is limited data pertaining to the other industries like *takaful*, *sukuk* and Islamic capital market, this study only employed the Islamic banking sector only. However, as the Islamic banking contribute more than 70% of Islamic financial assets, the use of banking sector could be representative but may not be fully represent the full Islamic finance industry.

This study can be further extended by having the time-series research. Among the countries that may have long information of Islamic finance could be Iran, Sudan, Pakistan, Saudi Arabia, UAE, Egypt, Kuwait, Jordan and Bahrain by the fact that they are having Islamic financial development prior to 1980s. Another possibility is to turn into case study.

NOTES

1. This has been the primary reason for low performance of banks during the crises. During the financial crises, many banks in the conventional

- banking system are unable to execute their lending activities, leading to economic slowdown. It is because they did not have sufficient financial back-up to absorb the losses from the massive loan defaults. The capital growth of the banks fell far below the growth of total credit and overall riskiness of the assets (Karim et al., 2014).
2. Not much is known empirically. Among the first few studies could be Muslimah et al. (2020).
 3. The traditional classifications of Maqasid Shariah can be divided into three main level of necessity, namely daruriyat (necessities or mandatory) hajiyat (needs or something can be compromised) and tahsiniyat (luxuries or complementary). Under necessities, there are 5 essential elements for human life and the absence may cause damage to human being. The elements are protection of: (i) faith or religion (e.g. defend Islam against enemies), (ii) life (e.g. prohibit killing life), (iii) lineage or progeny (e.g. build hospital), (iv) intellect (e.g. provide education), and (v) property (e.g. fair distribution of wealth via zakat). See the detail from www.kfh.com.my.
 4. See https://www.researchandmarkets.com/research/bq7pb4/global_islamic?w=12.
 5. See various publications by OIC at www.oic-oci.org.
 6. To make this worse, not many Islamic countries recognize the responsibility of company to pay zakat as they define zakat is due to individual, rather than by company.
 7. Limited impact does not mean zakat is not effective as its true impact is hard to measure. Surely it has its own unique contribution. However, the general idea here is that if more assistances are given, the chances of the poor to be out of poverty will be higher.
 8. There is a growing consensus that instead of just giving money, which may be used for daily consumption only so immediately, well-designed CSR activities that directly tailored towards the real need of the poor may be more effective to alleviate poverty. Among the examples is RM100 million issuance of SUKUK Ihsan by Khazanah Nasional Bhd (see <https://www.theedgemarkets.com/article/going-listing-ihsan-sukuk-good-cause>).
 9. Kuznets curve if assumed hold must have two hypotheses. The second hypothesis would be high-income level will help to bring down income inequality, or will have negative effect on income inequality. We report only the equation without high income variable in the main text. Nevertheless, the equation with high income variable is also supplied at Appendix A.
 10. At least, there are two options, either to offer more financial assistance such as credit to ‘poor or less

fortunate’ Muslims or to allow (without extra charge) for delay in repayment of obligations due to valid reasons. Unfortunately, both are difficult and rarely practiced by current Islamic banks as the first will expose banks to higher risk and the latter will increase cost of operation, and thus, profit of the banks. Due to these, this paper is initiated to carefully examine whether the current Islamic bank practices, which put less emphasis on both aspects will help reducing income inequality.

11. See www.transparency.org.
12. Most of past studies are either on the measurement or determinants of CSR (Aribi & Gao 2011; Rashid et al. 2013; Khurshid et al. 2014; among few), or the effect on bank performance (Mallin et al. 2014; Platonova et al. 2018; among few). The closest to this study could be the effect of CSR on poverty by Yusuf and Bahari (2015).
13. 6.25% is based on doubling of zakat requirements, which is 2.5%. Relatively, this amount is much smaller than the size of corporate tax, which is normally at 25% such as in Malaysia.

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