Does Economic Collaboration Adjust the Effects of Financial Crises on Poverty in the Islamic Countries?

Seyed Komail Tayebi[*]

Zohreh Shirani Fakhr[**]

Abstract

Poverty is arguably the most pressing economic problem of the time of global financial crisis that crisis have adverse impact on it through a variety of channels and typically lead to slowdowns in economic activity and, consequently, rise in formal unemployment and/or falls in real wages. On the other hand, it is generally argued in the literature that economic collaboration in the forms of financial and trade integrations is likely to enhance growth potentials and development of an economy and leads to poverty reduction. In this regard, the questions this paper addresses are how the life of poor people in the Islamic nations affected by financial crises, additionally, whether the implementation of economic collaboration strategies controls for the effects of crisis on poverty. In this paper, we specify a dynamic panel regression model of poverty using data of the selected Islamic countries over the period 1995–2008, in order to explore the effect of the recent global financial crises on poverty in such countries. This allows us to verify whether economic collaboration implementation would adjust such effect. Our findings showed that crisis will worsen the condition of living and will cause increasing poverty more that before crisis. However, the results imply a weak role of economic cooperation in the group of Islamic countries for controlling the effects of crisis on poverty and income distribution. The implication is that an economic integrating block implementation is not effective in reducing poverty in the Islamic countries and these countries should strengthen their economic cooperation in different areas and act according to principles of economic cooperation.

Keywords: Financial Crises, Poverty, Economic Cooperation, Islamic Countries, Panel Model.

[*] Professor of Economics, Department of Economics, Faculty of Administrative Science and Economics, University of Isfahan, Iran.

[**] Ph.D. Student, Department of Economics, Faculty of Administrative Science and Economics, University of Isfahan, Iran, (Corresponding Author).

1- Introduction

The global financial crisis that began in 2008 in the United States, but spread far and wide across borders has now deepened and broadened its adverse impacts across countries and in different forms. Now that the crisis of the financial markets has become a crisis of the 'real' economy, it is obvious that those who already face poverty might be suffering from various shocks. Poverty is arguably the most pressing economic problem of this time. Although the employment and income impact of crisis has not been disproportionately heavier on the poor than on other groups, the poor have suffered more from its impact because their low incomes and education provide them with fewer options for coping with the crisis (Ernesto and C. Knowles, 1998). Analyses of the effects of crises on poverty and income distribution suggested that the impact differed in middle- and low-income countries. During most economic crises and subsequent structural adjustments in middle-income countries, poverty worsens because wage cuts and layoffs in the formal sector tend to be biased toward unskilled workers (Bourguignon, de Melo, and Suwa 1991). Income poverty almost invariably increases during a crisis. Household surveys conducted in Latin America during recessionary periods in the 1980s and 1990s provide evidence of this effect. They show that the incidence of poverty increased during the first year of the recession in 9 out of 11 cases, and remained higher for one or more years after the recession in 19 out of 21 episodes (Lustig 1999). Declining levels of income and consumption per capita will lead to more immediate increases in poverty incidence (headcount ratio) and intensity (poverty gap, i.e., the average difference between the poor's per capita consumption and the poverty line) (Ernesto and C. Knowles, 1998).

According to the importance of study about the effects of crises on poverty, the aim of this paper is to investigate how the life of poor people in the Islamic nations are affected by financial crises, additionally, whether the implementation of economic collaboration strategies controls for the effects of crisis on poverty. Such issues seem to have been not considered in the literature widely for the Islamic countries. In this regards, we specify a dynamic panel regression model of poverty. This specification should help us estimate the relevant regression, using data of the selected Islamic countries over the period 1995–2008, in order to explore the effect of the recent global financial crises on poverty in such countries. This allows us to

verify whether economic collaboration implementation would adjust such effect.

The remaining of the paper focuses on the several channels through them crisis affect poverty in Section 2 and an overview on impact of economic cooperation strategies on poverty in Section 3. Section 4 is devoted to a dynamic panel regression model specification and data resources, while Section 5 reports and analyzes the empirical results, and finally Section 6 represents the concluding remarks.

2- Channels of impact

Economic recessions tend to have adverse impact on all sectors and sections of the society and have different impacts on different groups of people; however it is the poor and working class which generally suffers from the worst consequences. Evidence from the literature suggests that the financial and economic crisis affect poverty through several channels. But there are six main channels through which adverse social impacts may be identified. These are labor markets (domestic and overseas), prices, assets, credit, Public transfers and government budget.

First, the most important channel through which the crisis had an impact on the majority of households was through a reduction in the demand for labor, either directly via layoffs, cutting wages, reducing employee benefits, shortening working hours, increased unemployment and informal self-employment or indirectly via reduced demand for the products of rural or urban household enterprises (Ferreira et al, 2001). These shocks have different impacts on workers with different skills and different levels of job security. Lowly-skilled workers and women are often more likely to lose formal sector jobs and move into the informal sector, where earnings are likely to be lower. Many literatures confirm this claim, For example, Betcherman and Islam (2001) pointed out that during the Asian crisis unemployment increased, earnings of workers fell and workers rights were endangered; consequently various adjustments took place in the labor market such as internal and international migration and participation in informal sector. Jones, Hull and Ahlburg (2000) noted that unemployment rate increased in all the crisis affected-countries, mainly in urban areas and was concentrated in the construction, finance, real estates and manufacturing sectors. Knowles, Pernia and Racelis (1999) pointed out that employment in

agriculture and services sector has increased in several countries during the financial crisis. Horton and Mazumdar (2001) found that labour participation rate decreased more for vulnerable groups, such as young workers, women and older workers compared to that of prime-age males in both absolute and relative terms in the South East Asian region during the time of crisis. Pernia and Knowles (1998) identified that female workers are more likely to lose their jobs than their male counterparts as they are mostly the secondary earners and they usually do not belong to labor unions. However, Moon, Lee and Yoo (1999) revealed that males were more adversely affected than female in Korea during the crisis in 1990s. Knowles, Pernia and Racelis (1999) found that the main form of impact of the crisis in the informal sector is the decline in the real income per worker rather than open unemployment. According to Betcherman and Islam (2001) the increased contribution of self-employed and unpaid family workers in the relative shares indicates that many workers move from formal to informal sector.

While reduced labor demand almost always raises the incidence of poverty, different kinds of labor demand–shocks have different effects on income inequality. Households at the low end of the distribution ladder in developing countries are affected the least, because they receive little or no wage income. But labor demand shocks have a strong impact on those formal sector workers with the lowest skills, who are more likely to lose their jobs than their more skilled counterparts. They then either become unemployed or move to the informal sector, where their earnings are likely to be lower. As a result households at the middle to lower-middle range of the income distribution ladder are pushed further down, swelling the numbers of households with low incomes. Furthermore, the demand for migrant workers throughout the region is declining, thereby hurting countries that rely on overseas labor markets for employment of their surplus labor and for worker remittances.

Whether the major impact comes through a quantity or price adjustment depends on the structure of the labor market, labor market regulations which may make it difficult or costly for employers to lay off workers and collective bargaining arrangements which have a bearing on the extent of downward wage flexibility. Prevalence of migrants in urban areas, domestic or foreign, also has a bearing on outcomes. Sectoral employment patterns can also change in response to the impact of the devaluation on relative

profitability (e.g. away from construction and manufacturing, initially, towards agriculture), and labor may move from the formal sector, which sustains the initial impact, towards self-employment or informal activities. These initial effects and responses can result in different distributional outcomes, with respect to gender, age, income level and skilled-unskilled wage differentials.

Second, Price changes, including devaluations, commodity price changes, trade reforms, public sector price increases, tax/subsidy changes etc. cause significant relative price changes with effects dependent on the structure of production and consumption of households. In analyzing the price changes of the 1997 Financial Crisis in Indonesia, Levinshon et al. (1999) found that price increases had been significantly faster for the poor and for rural households. They conclude (p.20) that: "... the notion that the very poor are so poor as to be insulated from international shocks is simply wrong. Rather, in the Indonesian case, the very poor appear to be the most vulnerable." The literature reveals a large volume of empirical insights into how market prices may impact on the welfare of poor households. In general, price changes alter the profitability of each sector, and affect relative wages and employment levels. The relative prices of consumer goods also change with a further effect on real incomes. For example, a real devaluation of the naira, which implies that the prices of the goods that are traded must rise relative to those of non-traded goods, will benefit the poor if the poor are net suppliers of traded (non-traded) goods, or tend to work in industries producing them, provided there are no impediments to labor mobility, price stickiness, effects on the structure of consumer prices, and direct welfare effects on the poor of the spending cuts (Lipton and Ravallion, 1995). Furthermore, Agénor (2002) suggests that one of the reasons for the vulnerability of those individuals with low incomes to inflation is because their incomes are typically defined in nominal terms, and usually not indexed to inflation. Therefore, in times of high inflation, the incomes of the poor tend to decrease in real terms. This consequently leads to an increase in the size of the population of the poor as well as the depth of their poverty. Another reason for the susceptibility of the poor to inflation is that they generally tend to have few real assets; most of their savings are typically in the form of cash balances that are subject to the inflation tax (Chen et.al (2004)). The non-poor are generally better able to protect their living standards from inflationary shocks than the poor. For

instance, since independence, inflationary periods in India have resulted in temporarily higher poverty incidence, depth and severity (Datt and Ravallion (1998)). Evidence from Easterly and Fischer (1999) indicate that inflation matters more to the poor than to the rich, who are presumably in a better position to protect their living standards.

Third, hikes in interest rates, declines in bond prices, stock market crashes, falling real estate prices, and inflation all affect the incomes of people who own various types of assets. While changes in the relative short-term returns to investors holding bonds rather than stocks may redistribute income only among the non-poor, there is one major impact on assets which affects the poor: inflation. The rate of inflation is a tax on money holdings (ADB, 2006). Inflation erodes the value of fixed-denomination assets such as money, which is the primary asset of the poor and near-poor. These groups have little scope for hedging. Because the poor often do not hold non-money financial assets, they are unable to adjust their portfolio to increases in inflation. Typically, they will hold a greater proportion of their wealth in cash even during inflationary periods than do the non-poor. Asset values are lost owing to the collapse of stock and real state markets, and lifetime savings are gone due to banking failures. Changes in the value of assets can be dramatic in a crisis, with significant distributional effects both on the rich (as with stock market and estate price falls) and the poor (if the inflation tax rises, for example). There is at least a perception that the focus of action is to bail out the rich (externally or internally) and not protect asset losses of the poor. Fourth, diminished collateral for loans along with high interest rates is constricting access to credit for investment or consumption. Fifth, public expenditure cuts, beyond causing declines in labor demand and price effects (for example, when subsidies are removed), affect cash transfers and the provision of in kind services. Particularly if they take place across the board or are ad-hoc, these cuts tend to harm those who rely on public services, often including the poor. Doubtful inferences have often been drawn from benefit incidence studies showing that the poor share relatively little in the average benefits from social spending. Yet the marginal gains and losses from fiscal contraction can readily yield a very different picture (Lanjouw and Ravallion, 1999, using data for India). In Chile, per capita social spending fell by 20 percent between 1981 and 1986. The poorest 40 percent of families were particularly hard hit: their share of

personal income was only 12 percent but they received 50 percent of public spending in health and education and 20 percent of social security payments (Bourguignon and Morrisson, 1992). Finally, government revenue is down, while a good idea of public expenditure is being diverted toward the restructuring of financial institutions and debt servicing.

While the above lays out the principal sources of shocks on people, the net effects depend crucially on responses at the individual, household and community level. Responses at the household level typically include adjustments in consumption, saving and labor supply behavior, asset sales and increased borrowing, increased informal sector work of women, reverse migration, pulling children out of school and into work, increased inter-household transfers and mutual help, besides utilization of social services. These can reduce immediate welfare costs, but often with longer-term adverse effects. Some are easily reversible, but others are not, at the individual, household, or community level. Rising pressures on family and community can lead to measurable adverse effects, for example, households tend to consume less of everything when their incomes decline ("income effect") and purchase less of items whose relative prices have increased ("substitution effect"). In fact, households are reducing their food expenditure, reflecting both effects. Within the food budget, households are substituting cheaper, lower quality sources of calories for more expensive, higher quality sources. Moreover, by selling or pawning assets, talking salary advances, or borrowing money, households are dissaving.

Since food prices generally increased more rapidly than nonfood prices, the impact of inflation was harsher on the poor, given that food accounts for a dominant share of their consumption. Inflation not only clipped purchasing power but, along with the collapse of stock markets and banks, also drastically reduced the real value of household savings. Inflation and reduction in real incomes effectively spread the cost of labor market adjustment beyond the unemployed workers.

3- Impacts of Economic Cooperation Strategies on Poverty

The past few decades have seen a remarkable growth and dynamism as well as a period of economic turbulence in Asia. The Asian financial crisis of 1997 was a wake-up call for policymakers that regional cooperation and integration can maximize the mutual benefits of all involved. In this regard,

regional cooperation among developing countries has increasingly been advocated as a strategic tool for reducing poverty (K. Bhattacharya and N. Bhattacharya, 2006).

In the literature, it is generally argued that economic collaboration in the forms of financial and trade integrations is likely to enhance growth potentials and development of an economy and leads to poverty reduction. Economic cooperation and integration at the regional level has a similar, and even greater, impact on poverty reduction. The reason is that it is very difficult for a small, poor country to have direct access to global markets. Such countries usually need physical connectivity, market expertise, and distribution networks. By integrating these economies with neighboring, larger economies, they will be more able to participate in the regional and global supply chain (Asian Development Bank, 2006). In this regard, economic integration, defined as the institutional combination of different national economies into larger economic blocs or communities, requires gradual abolition of trade barriers between the economies. The orthodox theory of economic integration [Viner (1950); Meade (1955); Lipsey (1957)] determines its gains by judging the relative strengths of trade creation and trade diversion effects arising from economic integration.

Trade creation refers to a shift from high-cost domestic products to the low-cost products of the member countries in an economic union or regional bloc. This shift involves a production effect and a consumption effect. The former saves the real cost of domestic production owing to reduction in the production of and increase in the import of those goods which a member country can produce at a lower cost, while the latter enhances consumer satisfaction because of increased consumption of those goods which are now imported at lower price and were produced domestically at higher costs (Lipsy, 1957).

In general, regional cooperation in developing countries leads to dynamic impacts embodied in technical change and economic restructuring pushed by comparative advantage. They can join hands to see globalisation as an opportunity rather than a threat. In the WTO era, facing up to new forms of protectionism such as anti-dumping duties, environmental quality and social standards, presents a challenge which is better managed by a regional bloc rather than by divisive individualism (Lipsy, 1957).

Economic integration is generally achieved through an evolutionary process of regional cooperation. The most outstanding example is the European Union (EU), which after achieving near-complete economic union, is seriously debating political union. In the Americas, the most important regional grouping is the North America Free Trade Area (NAFTA). The Association of South East Asian Nations (ASEAN) is the most successful economic grouping in Asia. These groupings are better positioned than individual countries to exploit opportunities offered by the world economy. Under the WTO arrangements, these Regional Trading Arrangements (RTAs) are viewed as complements to multilateral free trade. Under the Article XXIV of GATT regional economic integration agreements are permissible provided that the resulting liberalisation of trade among the countries in the group takes place without raising the pre-existing tariffs against third countries (Tahir (2004)).

Overall, Viner (1950) examined the impact of regional groupings on the welfare and introduced the concept of trade creation and trade diversion. However, he made restrictive assumptions of zero demand and supply elasticities. Subsequently Meade (1955) relaxed the assumption of zero price elasticity of demand and Lipsey (1957) relaxed the assumptions of zero supply elasticity as well. The main conclusion of these studies that if trade collaboration exceeds the trade diversion, regional integration would be welfare promoting and vice-versa. C

Successful integration of the Greater Mekong Subregion (GMS) countries in the regional and global economy also implies improvements in both social and economic indicators (Duval, 2008). By working together, countries enjoy social and economic benefits that otherwise may not be achieved solely through individual efforts. Regional integration can produce win-win outcomes in terms of the quantity and quality of economic growth. More importantly, regional cooperation is a potential driver of sustainable economic growth that will contribute to the poverty reduction goals in developing countries, if accompanied by pro-poor national policies (K. Bhattacharya and N. Bhattacharya, 2006).

The increased sense of economic collaboration following the Asian crisis was fueled by the need to secure the region from future crisis of a similar nature, to secure gains attained before the crisis, as well as to ensure a more stable basis for continued growth based on increasing intra-Asian trade and

increasing interdependence among regional financial resources (The US Embassy in Japan, 2006). According to this the two focal institutions in Southeast Asia, viz. the Association of Southeast Asian Nations (ASEAN) and the Asia-Pacific Economic Cooperation (APEC) were perceived as being successful in their past attempts in problem-solving, there were high expectations that such regionalism would be key in finding solutions to the Southeast Asian economic crisis and mitigating the after-shocks. In this regard, there is some positive impacts of economic cooperation as follow: Trade creation effect, Improved terms of trade, Increase in economic welfare ,Trade diversion effect will be reduced, Increased business access to members' markets, Economy of scales, Competition enhancing effect, FDI creation effect (among member countries), Promotion of regionalization.

From Asian Development Bank (ADB)'s perspective, economic cooperation is not an end in itself, but only a means to achieve its overarching objective of poverty reduction in Asia and the Pacific. Overall, economic cooperation can help sustain pro-poor economic growth, which is a key element of ADB's poverty reduction strategy, through improved cross-border physical connectivity, expansion of regional trade and investment, promotion of regional financial intermediation and stability, and provision of regional public goods (ADB, 2006).

Cross-border infrastructure projects—e.g., transport, energy, and telecommunications—are essential for the movements of goods, services, people, and information across countries. They enlarge market access, reduce economic distance and facilitate trade, investment, and labor flows. The resulting intensification of cross-border economic activities can create employment, particularly in the labor-intensive sectors of Islamic countries, thus contributing to poverty reduction.

Acceleration of trade and investment integration of Islamic countries with regional and non-regional economies can help reduce poverty. Economic opening and globalization, if appropriately managed, can have significant impacts on poverty reduction. Trade openness and FDI inflows can connect developing economies with global markets where there is demand for developing country products. As developing economies have a comparative advantage in labor-intensive products, creating demand for such products can increase demand for labor or small piece of land, which are typically the only assets that the poor own.

Trade and investment cooperation and integration at the regional level has a similar, and even greater, impact on poverty reduction. The reason is that it is very difficult for a small, poor country to have direct access to global markets. Such countries usually need physical connectivity, market expertise, and distribution networks. By integrating these economies with neighboring, larger economies, they will be more able to participate in the regional and global supply chain (ADB, 2006).

As a consequence, economic growth plunged in many crisis-affected countries and the impressive achievements in poverty reduction over the previous three decades encountered a major setback. In the aftermath of the crisis, the incidence of poverty increased significantly in all crises affected countries. The Asian financial crisis thus underscores the critical importance of maintaining macroeconomic and financial stability for sustaining robust growth, continued poverty reduction, and social improvements. For the Islamic countries, economic cooperation provides an additional platform that can supplement, complement, and even strengthen national policies and programs aimed at socioeconomic development and poverty reduction, and the global efforts to achieve global financial stability.

Economic cooperation can therefore, enhance Islamic countries efforts to develop their economies and reduce poverty, widening the range of options available to them. In particular, it eases the constraints of national boundaries on factors of production, production activities, and markets. It allows economic cooperation participants to have greater access to key inputs, resources, technologies and knowledge, and enlarges the market for their products. It helps realize the development potential of Islamic countries, including gains through increases in production and wealth, as well as the emergence over time of a more competitive economic structure. Economic cooperation is especially important for countries with limited access to markets and resources and for poorer or lagging areas within national economies. In part, this is because it enables less developed economies in a region to take advantage of the improved connectivity and access to markets, and to benefit more from greater cross-border flows of goods, services, capital, and people (ADB, 2006).

The more developed countries in a region also benefit from economic cooperation, since deeper regional integration eases constraints on their growth by allowing them to relocate labor-intensive industries and activities

to their less developed neighbors and to import labor-intensive products and services from these neighbors at cheaper prices. These are significant if economic cooperation also involves freer movement of people across national borders. Once regional integration reaches an advanced stage, say, monetary and financial integration, it will give a big boost to regional capital markets which, in turn, will facilitate more efficient intermediation of a region's savings for the region's long-term investment.

In essence, economic cooperation, if properly designed and managed, offers a "win-win" outcome for a region's economies, rich and poor. This is because it facilitates resource allocation across the region in line with the principle of comparative advantage. The larger the number of countries covered and the broader the scope of economic cooperation, the greater the benefits. Economic cooperation has similar socioeconomic effects to globalization, especially in a region such as Asia and the Pacific, which now accounts for about 56% of world trade and about 25% of world GDP at current exchange rates. As a result, economic cooperation is a means, the adhesive, for linking the less developed countries to the more developed countries in the region, so that the former can converge toward higher levels of per capita income—achieving inclusiveness at the regional level or reducing disparities across countries (ADB, 2006).

According to above discussion, we conclude that economic collaboration between nations will bring reduced transaction costs, greater productive infrastructure services, lower trade barriers, faster communication of ideas, goods and services, and rising capital flows. Integration requires a strong political will, not only at the national level, but also at the regional level (Bhattacharyay and De, 2005). Thus, in incidence of financial crisis, collaborative blocks could support nations of deteriorating their income distribution.

4- The Model

There has been ample works in the literature aiming at testing relationship between financial crisis and poverty and among them there are many ways to measure financial market stress. One is to look at an interest rate spread designed to measure default risk, such as the difference between yields on a "risky" asset (e.g., corporate bonds) and a "risk-free" asset (e.g., U.S. Treasury securities). However, financial stress can also arise in other

dimensions. One type of risk prominent in the recent financial crisis was the inability of many financial institutions to secure funding to finance their short-term liabilities, such as repurchase agreements (repos). This type of risk is known as "liquidity risk."

To overcome a potential problem of focusing solely on one indicator at the expense of others, some economists have combined several indicators designed to measure financial market stress into one summary variable, like an index number. A financial conditions index (FCI) summarizes the information about the future state of the economy contained in these current financial variables. Ideally, an FCI should measure financial shocks – exogenous shifts in financial conditions that influence or otherwise predict future economic activity (Hatzius et al, 2010).

In this section we use a new, broader index of financial conditions in an effort to overcome the limitations of previous indexes. This new FCI is generated by Jan, Peter Hooper, Frederic Mishkin, Kermit L. Schoenholtz and Mark W. Watson, 2010. It covers a wide range of financial variables, substantially wider than the coverage of any of the existing FCIs covered. And it has a relatively long history, ideally going back at least to the early 1970s. We purged the underlying series that make up the financial conditions index of cyclical influences. Furthermore, we use a dummy variable for representing financial shocks to economy of the world as a second proxy for financial crisis that is equal to one for years 1997-1998 for Asian financial crisis and 2007-2008 which represent recent global financial crisis.

To identify other variables which influence on poverty, we follow the most important channels of impact of financial crisis on poverty discussed in the aforementioned literature and according to Milberg (1997) that has emphasized GDP patterns and foreign investment has been important impact on poverty in developing countries; according to different measures of poverty that explained in Haunghon & R.Khandker (2009), It is tempting to measure household welfare by looking at household income. In developed countries, a strong case can be made that consumption is a better indicator of lifetime welfare or poverty than is income. Income typically rises and then falls in the course of one's lifetime, in addition to fluctuating somewhat from year to year, whereas consumption remains relatively stable. A more practical case for using consumption, rather than income, is that households

may be more able, or willing, to recall what they have spent rather than what they earned. So we use household final consumption expenditure (PPP) as a proxy for poverty. We use a two step approach. In the first step, we estimate a general form of the panel regression model (equations (1) and (2)) to examine the effects of financial crisis and other determinants on poverty as follows:

$$PO_{it} = \alpha + \sum_j \beta_j X_{jit} + \lambda\, Crisis_{it} + v_{it} \tag{1}$$

$$PO_{it} = \alpha + \sum_j \beta_j X_{jit} + \lambda\, DCrisis_{it} + u_{it} \tag{2}$$

where,

PO_{it}: poverty variable, proxied by the household final consumption expenditure (PPP) for country i in time t.

X_{jit}: A set of explanatory variables ($j = 1, 2, … J$) such as GDP per capita, squared GDP per capita (Kuznets hypothesis), consumer price index (CPI), foreign direct investment (FDI) and real exchange rate devaluation[1] for country i in time t.

$DCrisis_{it}$: This variable represents a crisis dummy variable that is equal to one if the crisis occurs in country i at time t, otherwise, it is zero.

$Crisis_{it}$: financial crisis, proxied by financial condition Index (FCI)

u_{it} = A disturbance term.

v_{it} = A disturbance term.

And in the second step, we run a regression to estimate whether the existence of economic cooperation strategies controls for the effects of crisis on poverty. So we estimate equations (3) and (4) as follows:

$$PO_{it} = \alpha + \sum_j \beta_j X_{jit} + \mu Crisis_{it} + \gamma\, ECO_{it} + \lambda\, Ccri\, \sec o + \eta_{it} \tag{3}$$

$$PO_{it} = \alpha + \sum_j \beta_j X_{jit} + \mu DCrisis_{it} + \gamma\, ECO_{it} + w_{it} \tag{4}$$

1- Real exchange rates are used instead of real effective exchange rates because of data availability.

where,

PO_{it} , X_{jit} and $Crisis_{it}$ are the same as before. ECO_{it} represents the economic cooperation dummy variable that is equal to one for three countries including Iran, Pakistan and Turkey that are active members of Economic Cooperation Organization (ECO) and for other countries, it is zero, $(Cri\sec o_{it})$ is interaction effect variable to see whether incidence of crisis in a country that is joined to economic cooperation bloc cause to reduce poverty between group of people, η_{it} and w_{it} are error terms such that $\eta_{it} \sim N(0,1)$ and $w_{it} \sim N(0,1)$.

In principle, this study uses data of 20 selected Islamic countries[1] over the period 1995-2008 periods, and the frequency of the data is annual and is obtained from the World Data Bank (2010). The sample period is chosen on the basis that it represents the longest common time period over which data for most of the countries is available.

5- Empirical Results

As previously explained, a panel regression model is specified to explore the effects of GDP per capita, inflation (shown by a change in CPI), exchange rate, foreign direct investment (FDI) and global financial crisis on poverty of the selected Islamic countries. To show particularly the effect of the crisis, we use two proxies for financial crisis indicating different effects on household final consumption expenditure in the countries worldwide. One is a dummy (*Dcrisis*), which captures one for years 1997-1998 for Asian financial crisis and 2007-2008 for recent global crisis, and zero for the remaining years of the period and the second one is Financial Condition Index (FCI) as already explained.

The poverty model is thus estimated by panel data approach through applying Random Effects (RE), Fixed Effects (FE) and GLS methods,), where the results are obtained by Stata 9.2. A Hausman test has clarified this, in which its related statistic in the form of $x^2(5)$ is 7.16 (prob. = 0.2087)

1- The selected countries in the region are: Albania, Algeria, Azerbaijan, Malaysia, Egypt, Pakistan, Bangladesh, Bahrain, Iran, Kazakhstan, Kuwait, Kyrgyzstan, Oman, Qatar, Saudi Arabia, Tajikistan, Syria, Turkey, Mozambique, and Uganda.

and it means we should use random effects-GLS method for estimating equation (1) and (2). In table (1), generally, most coefficients, except for the GDP per capita variables (*gdpcp* and *gdppc^2*), have been estimated significantly, while some of them have unexpected signs. According to the results, inflation has a significant and positive effect on the poverty level of the countries, which is expected as it lowers power purchasing of the nations. In contrast, it is expected to raise poverty by an economic crisis, while the effect of the 2008 financial crisis, which has been proxied by FCI as we show it by (*crisis*) in equation (1), on poverty is significantly positive (column (2)). So, the crisis will increase household expenditure and we can conclude that this is an unexpected effect, even though its coefficient is significant. But this result can interpret as follow that generally in developed countries crisis causes stagnation but in these countries which we selected, crisis causes stagflation, so when they are in depression, the expenditures increase and it will raise poverty.

The effects of exchange rate and FDI on poverty are significantly positive. For the case of exchange rate, the related effect is positive, which implies an increase in exchange rate increase exports, which lead to higher a rate of economic growth and a lower rate of poverty. Additionally, as we expected it is shown that coefficient of FDI has been estimated significantly and positively and it explained that a rise in FDI reduces the level of poverty through developments in investment and economic growth. This reveals the fact that attracting FDI in such countries does have a productive performance particularly on reducing poverty.

Re-estimating the poverty model (Equation 2) by the replacement of the previous financial crisis variable (*crisis*) with a dummy variable of the crisis (*Dcrisis*). The result has indicated a correct value of its coefficient as expected and as we expected crisis raise poverty by decreasing household consumption expenditure and it shows that in these periods household can not afford their needs and poverty increase. The results of the new case of the poverty model have been obtained by the RE method and reported respectively in Table (1) in column (1).

To find out an answer to the main question of this paper, which relies on how implementing an economic collaboration plays a role in adjusting effects of financial crises on poverty, we have again estimated the model through a GLS method by adding a new variable. Actually, this implies a cross effect of an economic cooperating block proxied by a dummy, such as Economic Cooperation Organization (ECO) including Iran, Turkey, Pakistan, Afghanistan, Albania, Algeria, Azerbaijan, Egypt, Pakistan, Bangladesh, Benin, Bahrain, Iran, Kazakhstan, Kyrgyzstan, Tajikistan, Turkey, Mozambique, and Uganda, Burkina Faso, Cameroon, Chad, Côte d,Ivoire, Djibouti, Gabon, Gambia, Guinea, Guinea-Bissau, Mali, Mauritania, Morocco, Niger, Nigeria, Senegal, Sierra Leone, Somalia, Sudan, Suriname, Togo, Tunisia, and the variable of financial crisis (*crisis*), denoted by *crisis*eco*, on the poverty level of the selected Islamic countries. The results reported in table (2) estimates equations (3) and (4) and investigate about effects of economic cooperation on reducing poverty. The results show a significant and negative estimated coefficient of the variable. This does not confirm the effective role of the block implementation in reducing poverty in the countries under consideration. The interpretation of impact of GDP per capita, FDI, CPI and exchange rate on household expenditure are similar to table (1). We estimate equations by random effects-GLS. In column (2) the results of estimating equation (4) show that again crisis which is proxied by FCI raise household consumption expenditure. However, Criseco variable has statistically significant negative effect on expenditure and it means that in crisis periods economic cooperation between selected countries can not control the effect of crisis on poverty in selected countries because just these countries wrote some statements about cooperation between them but they practically did not cooperate. So the effect of crisis is dominant and cause increasing poverty. In column (2) we estimate by using DCrisis and conclude that increasing crisis decrease household consumption expenditure and promote poverty. But when there is not crisis, economic cooperation between countries has statistically significant positive effect on reducing poverty and because of cooperation the flow of resource to these countries in abandon and reduce consumption expenditure of households and make condition of living better.

Table 1: Empirical Results on Poverty Model Including Different Proxies for Financial Crisis in all Sampling Countries

Variables	(1) RE-GLSModel	(2) RE-GLS Model
PcGDP	0.5879472 Z: 0.52 p>|z|: 0.605	0.6861567 Z: 0.60 p>|z|: 0.547
PcGDP²	-0.0000184 Z:-1.10 p>|z|: 0.273	-0.00002 Z: -1.19 p>|z|: 0.235
FDI	4.513416 Z:9.02 p>|z|: 0.000	4.502887 Z: 9.02 p>|z|: 0.000
CPI	668.7719 Z: 9.17 p>|z|: 0.000	673.3323 Z: 9.19 p>|z|: 0.000
EX	12.1031 Z: 5.83 p>|z|: 0.000	11.93665 Z: 5.73 p>|z|: 0.000
DCrisis	-6068.304 Z: -1.68 p>|z|: 0.094	-
Crisis	-	3838.466 Z: 1.66 p>|z|: 0.097
Statistics	Wald chi2(6): 374.69* Prob>chi2: 0.000	Wald chi2 (6): 376.29[a] Prob>chi2: 0.000

a . The Wald Statistic which is used for the 'goodness of fit' of the RE-GLS model.
Source: Authors

Table 2: Empirical results on poverty model including impact of economic cooperation on reducing poverty

Variables	(1) RE-GLSModel	(2) RE-GLS Model
PcGDP	0.3362619 Z: 0.30 p>|z|: 0.766	0.7027314 Z: 0.66 p>|z|: 0.506
PcGDP²	-0.000015 Z:-0.88 p>|z|: 0.376	-0.0000201 Z: -1.26 p>|z|: 0.206
FDI	4.609184 Z: 8.85 p>|z|: 0.000	4.553427 Z: 9.20 p>|z|: 0.000
CPI	642.4529 Z: 8.45 p>|z|: 0.000	669.2445 Z: 9.30 p>|z|: 0.000
EX	13.73704 Z: 6.29 p>|z|: 0.000	11.04938 Z: 5.37 p>|z|: 0.000
DCrisis	-	-6208.599 Z: -1.71 p>|z|: 0.090
Crisis	6672.693 Z: 2.59 p>|z|: 0.010	-
ECO	-	211173.1 Z: 7.21 p>|z|: 0.000
Criseco	-25858.93 Z: -3.70 p>|z|: 0.000	-
Statistics	Wald chi2 (7):353.38[a] Prob>chi2: 0.000	Wald chi2 (7): 426.47[a] Prob>chi2: 0.000

[a] The Wald Statistic which is used for the 'goodness of fit' of the RE-GLS model.
Source: Authors

6- Conclusion

In this paper we specified and estimated a panel regression model to explore the effects of GDP per capita, inflation, exchange rate, foreign direct investment (FDI) and global financial crisis on poverty of the selected Islamic countries. Our findings showed that inflation, exchange rate and foreign direct investment affect significantly and reduce the poverty levels of the countries. In addition, the 2008 financial crisis denoted by a dummy variable confirms an expected effect of the crisis, since its related coefficient was estimated positively.

Re-estimating the poverty model by considering a new proxy for financial crisis, complied by Hatzius et al. (2010), indicated that in selected countries we face with stagflation which increases poverty. In addition, we again estimated the model by adding a new variable to the model, implying a cross effect of the dummy variable of ECO and the variable of financial crisis, to explore the relevant effect on poverty. The results showed a significant and negative estimated coefficient of this variable and it means a weak role of economic cooperation in the group of Islamic countries for controlling the effects of crisis on poverty. The implication is that an economic integrating block implementation is not effective in reducing poverty in the Islamic countries so these countries should strengthen their economic cooperation in different areas and act according to principles of economic cooperation.

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