
Income Inequality and Financialization: Evidence for MENA Countries

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Abstract:

Purpose: Using country panel data, we analyze the impact of financialization through the interconnectedness between the financial system and the real sector on income inequality in MENA countries from 2000 to 2015.

Design/methodology/approach: Focusing on the real sector we use Islamic finance indicator as a proxy for financialization, we find a positive link between income inequality and financialization.

Findings: We demonstrate empirically that financialization can be used as tool to target policy over social economic problem such as income inequality. Our measure of financialization indicates that Islamic finance is a tool to reduce the inequality in the economy such as income inequality.

Practical implications: Our results suggest that a rise in private debt, trade openness, and economic development contribute to the decrease of inequality, while foreign direct investment, the unemployment rate, the age dependency ratio, and the fixed investment are associated with an increase in inequality.

Originality/value: The empirical results show that the impact of financialization in the long term is more important than in the Short term.

Keywords: Financialisation, Islamic finance, Income inequality, MENA countries.

JEL codes: D31, E44, G10, O16, O53.

Paper type: Research article.

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1. Introduction

As Bargea (1993), financialisation becomes a phenomenon which enhances the worldwide economy by making an interconnection between the financial sector and the real economy. According to (Braga *et al.*, 2017), the concept of financialisation as a systemic pattern of wealth does not consider financial dominance as a deviation relative to the genuine capitalist system that based on the production and circulation of goods and services.

The interconnection between the financial sphere and the real sphere in the economy has been studious in several literature for different point of views: financialisation of education (Eaton *et al.*, 2016), financialisation of consumption (Montgomene, 2009), social financialisation (Sinclair, 2013), and financialisation of labor relations (Ruega, 2012). Thus, the financialisation can be addressing as a tool to highlight the financial interdependencies between the real economy and the financial sector.

According to (EPSTEIN, 2005) the financialisation means the increasing role of financial motives, financial markets, financial actors, and financial institutions in the operation of the domestic and international economies. In this context, Islamic finance is the main proxy for the interdependencies between the financial and the real economy as the financial transactions must be underpinned by real economic activities.

The Sharia'h create a link between the real and financial spheres through the profit loss sharing principle, as the financial actor engage as an investor resulting in an equality of interests and risk sharing. The direct link between the financial and the real sector impose market discipline; maintain financial stability, and income distribution. Islamic finance in the MENA countries has been developed very fast after the subprime crisis covering later the worldwide. The financial market at the MENA countries has creating interconnectedness between banking, stock market, and production of goods and services sectors.

The financialisation of MENA countries is proxies by the traditional measures such as stock market capitalization and bank profitability. However the introduction of Islamic finance as a main component of the financialisation remain to think to another proxies or approach to take into account the macro configuration of the economy and the financial characteristics of the market and their interconnectedness with the rest of sectors.

Therefore, we calculate the profit rate of fixed and financial investment as a main component of the financialisation. The introduction of Islamic financial product such as Tawarruq and Sukuk into the Islamic banking and finance industry compromise the value system of Islamic banking and finance which as consequences the internalizing financialisation of Islamic banking and finance. Therefore it is important to take into account the Islamic finance principle s profit loss sharing rate

as a principal tool in the financialisation of the economy at the MENA countries as this market shape an important evolution in the recent decade.

Taking into account the introduction of the financialisation in the MENA countries remains to consider the macroeconomic environment of the economy. In the macroeconomic level financialisation is a determinant of several macroeconomic issues such as inequality of income distribution, debt-financed consumption, and investment in capital stock (Thalassinos *et al.*, 2012; Hakim *et al.*, 2022; Hakim and Thalassinos, 2023).

We will focus, on the most important perspective of financialisation in the macroeconomic level, income inequality basic on the Kaleckian approach (Kalecki, 1954). The main channels of financialisation through Kaleckian perspective are: a shift in the sectoral composition of the economy; an increase in management salaries and rising profit claims of the rentiers, and thus in overheads; and weakened trade union bargaining power.

Within the introduction of the financialisation with non standard proxy , how the MENA countries were able to face the most important macroeconomic problem such as income inequality? Within this paper we try to analyse this dilemma empirically and give a clear synthesis about the economic impact of the financialisation on reducing the income inequality.

The recent empirical literature review paid attention to the relation of financialisation and income inequality in the new economy. Financialisation led to an increasing share of national income as being diverted to wealthy households at the expense of the working class (Lin and Tomaskovic-Devey, 2013; Nau 2013; Piketty 2014; Volscho and Kelley 2012).

Palley (2013) introduces financialisation and neoliberalism as two complementary tools leading to the deregulation and liberalization of goods, capital and labor markets thereby potentially contributing to the increase of income inequality. (Roine, Vlachos, and Waldenström, 2009) conduct cross-national panel find that top income shares are positively correlated with stock market capitalization. Financialisation refers to the increasing role of shareholder value orientation as a concept of corporate governance.

Referring to (Lin and Tomaskovic-Devey, 2013) for the case of US, the study measure the financialisation as financial receipts as a share of business receipts , the main result is the financialisation can led to the decline of labor share's income and the rise in earning dispersion. The study confirms the previous studies conducted by (Fligstein and Shin 2004; McCall 2004).

Sjöberg (2009) found for the case of OECD countries between 1979/85 and 2000 that earnings dispersion is influenced by increasing reliance on stock markets,

mergers and acquisitions, ownership dispersion, the degree of bank based-finance and the protection of minority shareholders. For OECD countries Darcillon (2012) analyzes the impact of financial and labor market liberalization in income distribution for the period 1989-2005, their conclusion as similar with Sjöberg (2009) stating that greater labor market regulation can help to buffer the positive impact that financial liberalization exerts on wage dispersion.

Hein and Schoder (2011) suggest for the case of US and Germany between 1960 - 2007 that net interest payment of non-financial corporations related to their net-capital stock have a positive effect on profit shares and let to a reduction in the wage share.

As well as Dünhaupt (2013) find that net interest and net dividend payment of non-financial corporations contributed to a decline in labor's share of income for the case of OECD countries during the period 1986-2007.

The empirical literature studying the impact of financialisation in income inequality overall still limited. Kus (2012) proxies the financialisation with three main variables such as stock value traded as a share of GDP, bank profitability, the value of securities under bank assets in a panel of 20 OECD countries for the period 1995-2007. His main finding that financialisation indexes contribute to the rise in the GINI coefficient of disposable income: the capitalization to GDP ratio was of the least significance, whereas the increase in securities under bank assets was the most important.

In cross-national panel Volscho and Kelley (2012) find that the asset bubbles in stock and real estate markets determine top income shares. Flaherty (2015) study the impact of financialisation on top incomes through two principal domains: altering the balance of bargaining power between capital and labor, and state regulatory controls and redistributive mechanisms, his result suggest that wealth concentration must be interpreted in terms of relative class-based and institutional power resources.

In the present study, we examine the MENA economy that is a region who overcomes several institutional and economic circumstances in the recent years. In this study we use a new measure of financialisation for MENA countries to examine their impact on income inequality.

The rest of the paper is organized as follows. The following Section 2 presents a brief review of the relevant literature studying the income inequality for MENA countries as well as discussing the trend of income inequality over the region.

Section 3 present an overview of financialisation for MENA countries, followed by Section 4, in which we describe variables, data construction, principal component analysis, and the empirical strategy. Section 5 presents the results, and the last section is reserved for the conclusion and policy recommendation.

2. Trend of Income Inequality

Examining the evolution of Income inequality in the MENA countries led to consider the redistribution trajectory conducted in the economy before and after the Subprime crisis 2007/2009, and the political revolution in the selected countries and their spread effect for the rest of MENA region.

Figure 1 presents the average of GINI income inequality index for MENA countries, 1990-2015. Starting in the 1990s and 2008s, income is increasingly unequal distributed among the region. There is a rise of 15% over 20 years. We can see that the region has changed from having a stable trend to an unexpected trend from 1995 to 2008.

According to UNDP (2002) the Arab Human Development Report (2002:90), MENA had one of the most oriented equal income distribution in the world for the period 1995- 1999, while at his new report *Humanity Divided: Confronting Inequality in Developing Countries*, UNPD observe a bifurcation in inequality trends from 2000 to 2010.

According to Figure 2, the trend of evolution for Saudi Arabia is conducted by a rise then a peak with different level comparing to Turkey and UAE. Income inequality peak in 2008-2009 is as respectively 78%, 83%, and 70% respectively for Saudi Arabia, UAE, and Turkey. However, inequality continued its upward trend with slower pace over the period 2010-2015.

This inflection of GINI index trend varied as result of countries and region specific circumstances. This trajectory can be explained by the country specialization economy: oil-rich Gulf countries, the industrialized countries such as Tunisia, Egypt, Morocco and Jordan. The inequality is also explained by the ongoing socio-political upheavals around the region, such as the Tunisian revolution followed by Lybia and Egypt and the increasing Syria's civil war.

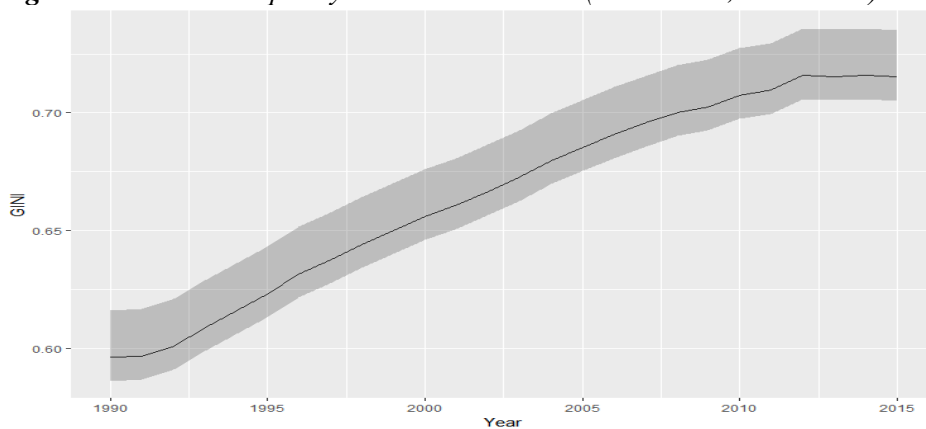
The empirical literature studying income inequality among MENA countries had been well developed recently (Wahba, 1996; 2009; Said, 2007) for the case of Egypt. After the Arab spring the literature conclude the main result such as the income inequality in this region is not high comparing to the international standard (Hlasny and Verme 2013; World Bank, 2012; Bibi *et al.*, 2010).

A study conducted for the case of Kuwait, (El-Katiri, Fattouh, and Segal 2011) find that the low standard survey-based Gini coefficients seem to contradict important aspect of their political economy such as the growing share of migrant population which is composed by low-paid workers. For the case of UAE, (Naidu, Nyarko, and Wang, 2016) and (Weyl, 2016) use new administrative wage data for foreigner in order to measure income inequality for tow population.

According to WID (2017), in their report (2017:15), the Middle East is the most unequal region in the world, with a top income share as large as 64%, as compared to 37% in Western Europe, 47% in the USA and 55% in Brazil. This result stills the same for to 2018, as (WID, 2018) state that the MENA countries lead the world in inequality.

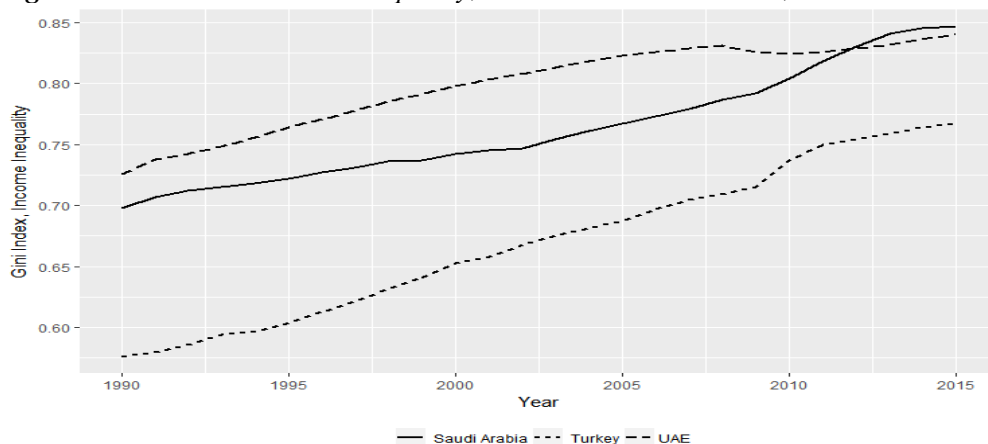
Income inequality among countries can be explained also massive educational inequalities due to the educational system which remain some top 1% income share population receive a higher wage comparing to the middle and low income share population. With reference to the same report, the top share income 10% of the population in MENA region exceed 60% of total income, and the top 1% of the population receive 25% of overall income of the region in 2016.

Figure 1. *Income inequality in MENA countries (GINI Index, 1990-2015)*



Source: Author's calculations, UNDP database.

Figure 2. *GINI Index Income Inequality, selected MENA countries, 1990-2015*



Source: UNDP database.

3. Trend of Financialisation in MENA Countries

Within the crisis of 2008/2009, the world economy adopted economic policies which fit with the macroeconomic structure for each economy in order to moderate the existing effects and overcome the potential consequences. The majority of developed countries are oriented to target the inflation as a policy to overcome the monetary crisis; however this policy is costly approach.

Therefore targeting the monetary policy to a real economy by promoting investment, raising employment growth and reducing unemployment can be optimal policies in an economy which overcome unexpected economic and extra-economic shocks. The financialisation of the real economy becomes a targeted efficient tool in order to maintaining financial stability and promoting sustainable development. The empirical literature treating the topic is very large.

The pioneer of financialisation is proposed by Braga (1985), he analyses the process by stating that “Valorization and competition operate under the dominance of a financial logic, which means – among other things – that centralized capitals manage simultaneously several types of assets ranging from productive assets to financial assets”.

Karwowski and Stockhammer (2016) conduct a systematic comparison for 17 EMEs for the two periods 1995-2007 and 2008-2015, the main finding for the study is a considerable variation in financialisation experiences of EMEs. Karwowski, Shabani and Stockhammer, (2017) propose a multi-faceted notion of financialisation by distinguishing between the non financial companies, household and the financial sector. For the case of a selected OECD countries during the period 1997-2007, the author find that the financialisation is a different processes among the different actors and playing out differently in different countries.

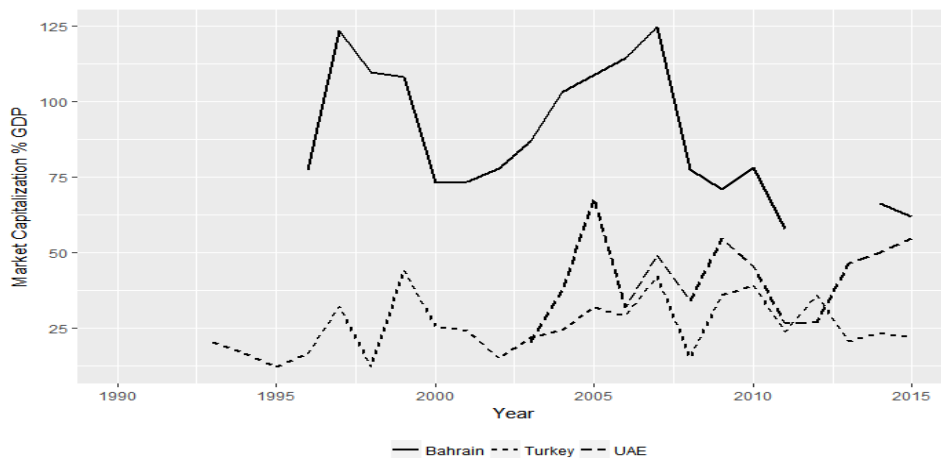
Bortz and Kaltenbrunner (2017) investigate the international aspects of financialisation in emerging and developing countries, the authors argues that international financialisation is not limited for a rise in the cross-border capital flows but also in different qualitative changes for the integration of the economic agent into the international financial markets. In the same context (Garcia-Arias, 2015) argue that international financialisation has implied a complete liberalization and deregulation of the behavior of the financial markets worldwide.

Karwowski, Shabani, and Stockhammer (2017) and Bortz and Kaltenbrunner (2017) confirms that financial deregulation encourages financialisation, through international financial rules and capital flows cross-border. However, Oatley and Petrova (2016) financialisation is not a consequence of financial deregulation and it is occurred as a response to the global change of the US economy through the dollars role as the worlds primary reserve currency and its impact on the world through the increase of foreign dollar demand.

Krippner (2005) examines the impact of the financialisation on the US economy in the post-1970s period; the author applies two measures of financialisation in the US economy by examining the growing importance of portfolio income of non-financial firm and demonstrating the growing importance of the financial sector as a source of profits for the economy. He confirms that financialisation emerges as the most important fact out the economy on post 1970s.

Basic on the traditional measures of financialisation, according to Figure 3 and Figure 4, the economic system in the MENA country is not well capitalized the firm are not engaged in the financial system directly due to risk behavior firstly and secondly due to the lack of the development of the financial system with the international standard norms. The emergence of the Islamic finance as financial mode for the real sector remains to think on the financialisation from other aspect far from the traditional measures such as the Stock Market Capitalization as share of GDP and Stock traded Value as share to total Value (%GDP).

Figure 3. *Stock Market Capitalization as share of GDP for selected MENA countries*

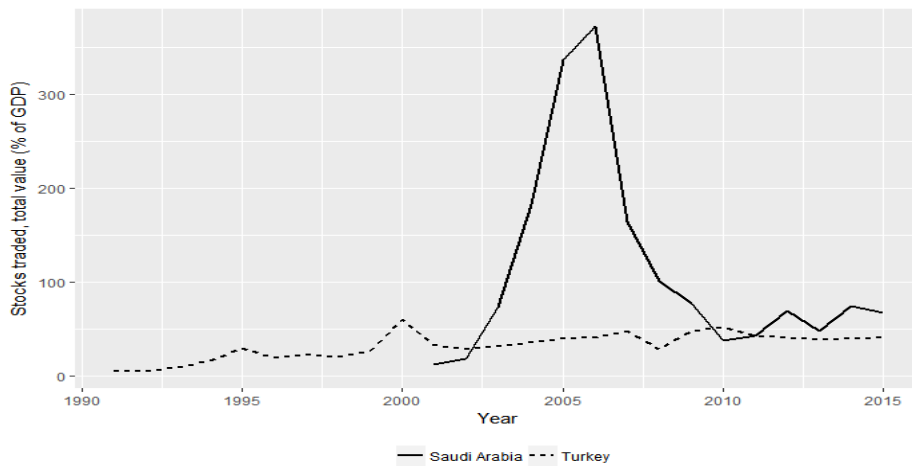


Source: *World Bank.*

Lin and Tomaskovic-Devey (2013), consider the financialisation as a process of income distribution with two faces: the rent seeking by an increasingly concentrated and politically influential of the finance sector, and the shift in behavior of non-finance firms away from production and non financial services and toward financial investments and services.

Thus, the financialisation is an internalizing process of income distribution on the economy, it is at this perspective that the Kaleckian approach explain the impact of the financialisation on the income inequality.

Figure 4. Stock traded Value as share to total Value (%GDP) for selected MENA countries



Source: World Bank.

Kalecki (1971) argues that the gross profit share in national income which includes retained earnings, dividend, interest and rent payment and overhead costs has three determinants: the profit share is affected by firms' pricing in incompletely competitive goods markets by the mark-up on unit variable costs, the profit share in national income is affected by unit material costs relative to unit wage costs, and the aggregate profit share of the economy as a whole is weighted average of the industry or sector profit.

Thus, the intersection between the financial sphere and the real sphere remain to calculate the profit rate rather than a proxy for the financialisation. We will be focusing of the profit rates by calculating the ratio which links the financial and the real investment. Demir (2009) studying the financialisation of the real sector in the emerging markets, the author proxies the financialisation by the gap of return between the rate of return of financial investment and fixed investment. The study confirms that a rise of return gap have an economically and statistically significant fixed investment reducing effect however for the financial investment an increase in the gap return rate does not have a significant effect.

For the US economy Orhangazi (2007) explore the link between financialisation and real investment at the firm level for the period 1973-2003. The author finds a negative relationship between the financialisation and the real investment trough two channels: first an increase in the financial profit may decrease the real investment by changing the incentive of firm for investing their funds in the real sector; second increased payments to the financial markets may have impeded real investment by decreasing available internal funds, shortening the planning horizons of the firm management, and increasing uncertainty.

The MENA countries are constituted by economies with rich resources such as oil. The rich oil countries of the region have a slow growth comparing to the other regions due to the fact that these countries invest only in the sector of natural resources explaining by that more export of oil rise more is the currency become expensive and as consequence that will be difficult to export other products .

This dilemma is known by *financial resource curse*. The main reason for this dilemma is the capital inflows. According to Benigno *et al.* (2013) the capital inflows lead to a shift of productive resources toward non tradable sector such as construction and thus reducing the need for financial resources from financial sector. The integration of capital inflow tends to a burgeoning of the financial sector as it will target the funds into the particular sectors.

However, with the emergence of Islamic capital market in the MENA countries this disequilibrium between sectors tends to be less effective. In fact, the issuance of *Sukuk* and the fly-in and fly-out influence on monetary policy can help with financial stability through productive channels or the real economy. Therefore, Islamic finance is a tool for financialisation in the MENA countries. The literature which studies the financialisation didn't engage with the crucial impact of the financial innovation in the financial system even within the crisis that rely on the social values and the typology of the financial innovators, Polillo (2011).

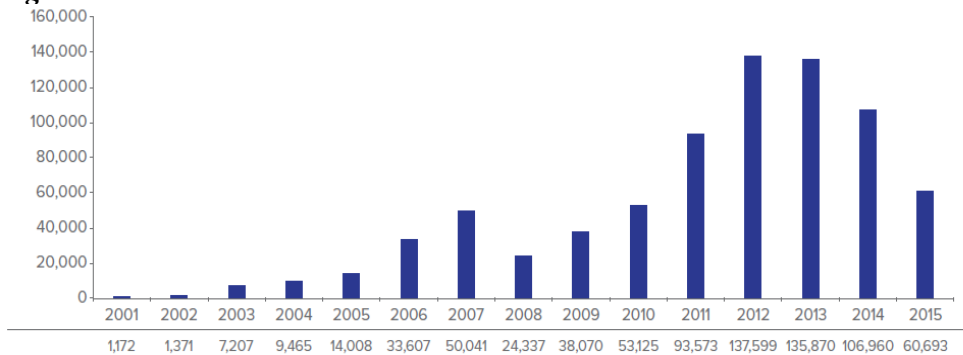
According to Polillo and Guillén (2005) financialisation is the adoption finance-friendly policies from reducing capital controls and creating domestic stock markets to rendering their central banks independent from political oversight. Islamic finance become a part of economic modernization agenda, the policy maker integrate it as a part of the project of financial and international competitiveness within the status 2020. Debt in Islamic finance is based on economic profitability and also social desirability.

Therefore, Islamic finance becomes a suitable instrument not just for the development of the financial sector but for the economy in general through financial inclusion and infrastructure development (Zeti, 2007). Islam is a tool of financialisation of the modern economy. Thus, the introduction of Islamic finance played a key role in developing the architecture of the economy. Savers and borrowers become implicating in different ways in ongoing process of financialisation (Pollard, 2010).

Islamic finance is a pathway to borrowers and savers within specially the Subprime crisis and the importance favorites that provide for both actors (credit sector and consumer finance) such as profit loss sharing. Islamic finance contributes to the ongoing of financialisation of the economy and providing new ways of thinking including moral and social values in the financial system.

Sukuk product is an innovation which emerge the capital market since 1990 and shape their development in the recent years. A *sukuk* is an innovative financial instrument that is similar to conventional bonds with respect to cash flow and risk. In addition, it has emerged as an important debt security instrument for the global Islamic financial sector, leading to the creation of the Islamic capital market within the prevailing conventional capital market.

Figure 5. Total Sukuk Issuances



Source: IIFM Sukuk Database.

4. Econometric Analysis

To evaluate empirically the relationship between financialisation and income inequality in MENA countries we estimate a statistical model of the impact of financialisation within the introduction of the Islamic finance in the economy on income inequality between 2000 and 2015. We conduct a panel data analysis using a data from 12 MENA countries over a period of 16 years. To measure the income inequality in MENA countries we use the GINI of market indicating the income inequality distribution.

Basic on the dataset of Solt (2009), the majority of recent literature uses it as he compiled a comprehensive dataset which is based on from the world Income Inequality Database and Luxembourg Income study. However for the case of MENA countries the data is not available for all countries. Therefore we use the dataset UNDP. We use Islamic finance as proxy for financialisation in MENA market.

The definition for financialisation proxy used in this paper is *the total Islamic banking assets to GDP*. However the financialisation is a large phenomenon with different dimensions and there is no single variable which can be used for all aspects.

We intend to use the Islamic capital market Sukuk however the emergence of this product is recently developed in the majority of the sampled countries and the availability of data for the used period is very small.

Therefore we will limit to the Islamic banking industry as a proxy for financialisation over the economy. Using this proxy we attempt to cover the link between the financial sphere and the real sphere that took place in different time intervals, the financialisation of the social and moral values in the economy is converted by the introduction of the Islamic finance rules such as the prohibition of *Riba* and the *profit loss sharing*. We expect a positive relationship between income inequality and financialisation.

The globalization is also a major determinant of income inequality; according to Wood (1995) with the intensification of trade economies might restrain from producing goods that compete with imports, with some time, the impact of trade on ages should be less severe. Agnello and Sousa (2012) argue that trade openness might lead to increased competition and therefore reduce monopoly rents which disproportionately benefit the higher income segment.

We expect a positive link between trade openness and income inequality. We proxy the globalization in term of international trade using trade openness (*export plus imports as share of GDP*), we collect data from the World Bank dataset. The second proxy for globalization is foreign direct investment, with reference to Bronfenbrenner (2000) foreign direct investment can also depress wages through relocation and the threat of relocation of production to overseas locations.

We expect a negative impact of foreign direct investment on income inequality; we measure the foreign direct investment by foreign direct inflows and outflows as a share of GDP and is obtained from IMF dataset.

We cannot analyze the income inequality without refereeing to the inverted-U curve of Kuznets (1955). Suggesting that some stage of development economic contributes to more equality; however in the empirical stage Bradley *et al.* (2003) argue that it is not that obvious why rising income as such should contribute to more inequality.

We use the *GDP growth rate* as a measure of economic development. We expect a positive impact of economic development on income inequality. Among the literature an important empirical literature highlight the link between income inequality and unemployment.

The employment is measured by the *unemployment rate* and we expect a negative impact on income inequality. The income difference between working-age and retired persons is a determinant for income inequality (Brady, 2006). We use the *old dependency ratio* and we expect a positive sign.

Finally, to analyze the relationship of income inequality and real sector, we compute the net fixed investment as share to GDP; we obtain data from IMF dataset. Table 1 reports the statistical description of the variables used in our model.

5. Research Methodology

The dataset consist of the size of Islamic banking assets which depend on the profitability and for a certain conditions for each country. Therefore, in order to correct the endogeneity parameter resulting from the presence of unobserved country fixed effects, we use the Arellano and Bond (1991) difference GMM estimator that employs lagged levels of the dependent variable and the predetermined variables and differences of the strictly exogenous variables as instruments for the first difference equation. Therefore, the equation estimated takes the following form:

$$\Delta GINI_{it} = \rho \Delta GINI_{i,t-1} + \alpha \Delta ISLtoGDP_{i,t-1} + \beta \Delta X_{it} + \Delta \epsilon_{it}$$

In this model, we may construct instruments for the lagged dependent variable from the second and third lags of GINI, either in the form of differences of lag level. If the error term ϵ is serially uncorrelated, the lags of GINI those untransformed and other in the right side variables dating $t - 1$ are uncorrelated with the transformed error term.

The validity of the assumptions underlying the difference estimator are tested y Sargan-test (*jtest*) of over-identifying restrictions (for testing the orthogonality between the instruments and the residuals), and the test m_2 (that is a second-order serial-correlation test of the residuals from the first-difference equation given that the use of endogenous $t - 1$ dated variables is valid only if there is no serial correlation of order 2), (Arellano and Bond, 1991).

5.1 Descriptive Statistics

Table 2 shows the descriptive statistics for the selected MENA countries including: UAE, Saudi Arabia, Qatar, Jordan, Bahrain, Turkey, Tunisia, Yemen, Sudan, Kuwait, and Egypt; for the period 2000-2015. Figure 6 shows the median of total Islamic assets as share of GDP among the selected countries in MENA in the dataset. Among the region GCC countries shows an important evolution of the industry comparing to the rest of the region.

Accordingly, an increasing in the Islamic finance industry is holding after the subprime crisis that overlaps with the previous studies showing the impact of Islamic finance in the economy after the subprime crisis. Overall, the median of *ISLtogdp* is 2.5% among all sampled countries.

Similar to GINI index as measure for income inequality GCC countries tend to be the highest in term of income inequality index, however the Yemen and Sudan tend to be perfectly equal. The mean of GINI index is around 83% in Qatar, twice higher than that of Yemen and Sudan. We see also that despite the decline of the GINI index for the Turkish case before the Subprime crisis, it remained higher after the

crisis which as above 66% as of 2001 and we also observe a sudden jump of the index after the subprime crisis is around 76% that market the most serious peak in their recent history.

Table 1. Summary Descriptive Statistics

	PRIV_DE BT_TO_ GDP	OPEN_TR	M3TO_G DP	ISLTOGD P	GINI	GDP_GR OWTH	FITOGD P	FDI	EMPL_R ATE
Mean	43.89193	84.85051	60.57511	6.308102	70.70833	4.677720	22.32528	2.945376	8.609896
Median	44.74830	85.10000	55.43424	2.598786	73.80000	4.402493	21.67521	2.057788	10.10000
Maximum	98.51077	196.4295	139.9373	68.98845	85.60000	26.17025	46.01666	23.53737	18.30000
Minimum	2.268144	19.10080	10.99974	0.006192	39.90000	-28.09683	1.778934	-2.560812	0.200000
Std. Dev.	23.17610	39.41536	27.52022	9.955204	12.42058	5.072793	6.886109	3.420188	5.449699
Skewness	-0.102700	0.688532	0.893529	3.394453	-1.072316	-0.922166	0.465762	2.270487	-0.114641
Kurtosis	2.140780	3.065426	3.735900	17.72072	3.018628	13.93336	4.093934	11.16295	1.575961
Jarque-Bera Probability	6.243584 0.044078	15.20468 0.000499	29.88100 0.000000	2102.310 0.000000	36.79835 0.000000	983.5187 0.000000	16.51544 0.000259	698.0342 0.000000	16.64365 0.000243
Sum	8427.250	16291.30	11630.42	1211.156	13576.00	898.1222	4286.453	565.5123	1653.100
Sum Sq. Dev.	102592.2	296732.0	144656.3	18929.26	29465.71	4915.047	9056.933	2234.258	5672.551
Observations	192	192	192	192	192	192	192	192	192

Source: Own study.

5.2 Empirical Results

The regression analysis from the Table 2 provides strong support to our hypothesis regarding the impact of Islamic finance as a proxy for financialisation on income inequality for MENA countries. Accordingly, looking at the effect of the size of Islamic banking industry as a measure for financialisation, we have found a significantly positive relationship (at a level 1%) between the *ISLTOGDP* and *GINI* in all selected MENA countries suggesting that increasing of the size of Islamic finance industry reduces the income inequality in the economy.

The finding is robust for some other control variables as shown in Table 2. Economically speaking, the point estimates indicate that a one percentage point increase in *ISLTOGDP* reduce the income inequality in terms of distribution among the region 12%. The coefficient of market inequality is high ranging around 0.128. This finding confirms that part of inequality generated through capital income could successfully be reduced through the integration of Islamic finance in the economy.

Contradicting the previous finding such as El-Katiri, Fattouh, and Sega (2011) where they find that the coefficient of income inequality is very high, within the proxy used for financialization in the MANA countries the income inequality is well reduced comparing the study provided by WID (2017) where it provided that MENA countries has extremely high income inequality in the world.

The financialisation of the economy through the interconnection between the financial system and the real economy leads to reducing the income inequality in the region. The targeting of the economic policy to mergence of Islamic finance in the whole economy could successfully reduce the income inequality in MENA countries.

The result from Table 2 also highlights the negative effects of unemployment on income inequality. This is in contrast with the theory a positive relation between inequality and unemployment (Bradley *et al.*, 2003). Accordingly, we have found a significant at 1% level negative effect of unemployment rate on GINI index in all selected MENA countries.

Also an increase in old age dependency ratio is also found to have both statistically (1% level) and economically significant negative effect on income inequality in the region; an increasing in share of retired person leads to more inequality, given relatively small pension, such result can be deducted from the non development of the pension system with the international standards. An increase of 10% in employment rate increases the income inequality by 12%.

Regarding the other variables of globalization, trade openness is found with the expected positive sign at a statistically significant level doe the sampled countries.

However we found a significantly positive (at 1% level) effect of foreign direct investment (a 10% decrease in foreign direct investment increases the income inequality by 17%). This result is in contrast with the literature such as Dünhaupt (2014) which found that FDI impacts on inequality by altering the bargaining power of labor. For our finding it is important to mention that the foreign direct investment in the region is not well connected through the absence of large flows, this may lead to a concentration of the capital in some sectors due to the specialization for each country.

Furthermore we find significantly positive (at 1% level) effects of trade openness on income inequality. An increase in term of export and imports may reduce the inequality in the region in term of capital income. Our finding is roust to other point of views such as Aleman (2011), and Angello and Sousa (2012) which suggest that an increase in competition leads to a decrease in monopoly rents which in general disproportionately benefits the higher income segment.

In regard to the role of fixed investment in the income inequality, we found a negative statistically significant effect (a level of 1%) of fixed investment on income inequality. A decrease of 10% of fixed investment leads to 20% increase in income inequality.

This finding is so supported to our study, this confirm the role of the real investment in the economy, furthermore an interconnection between the finance and the real

investment in the economy. Regarding the impact of the economic development on income inequality, our finding supports the Kuznets hypotheses suggesting that a favorable economic development has a positive effect on equality. Economic development is statistically significant (a level 1%) and positive on income inequality, furthermore economically speaking an increase of 10% of real GDP growth rate reduce inequality in term of capital income by 25%.

In regard to the debt of NFC, *PRIV_DEBT_TO_GDP* is statistically positive and significant on income inequality. *PRIV_DEBT_TO_GDP* is a proxy of financial development for the economy of MENA countries. This is confirm that the MENA countries are conducting a targeting policy in overcoming the social and economic issues such as the inequality by encouraging the investment and providing incentives for creating SMEs and preparing a compatible environment for a successful policy.

Another estimation model used a traditional proxy for financialisation such as *M3toGDP*. We find that *M3toGDP* is statistically significant at level 1% and positive effects on income inequality. However, the impact of *M3TOGDP* is less important that the new proxy.

Economically, an increase of point percent of total liabilities reduces the income inequality by 5%. This is confirming the nature of interconnectedness of the financial system and the real economy in the sampled countries and provides a tool to overcome a social economic issue and taking into account the real sector is a measure to approach economic environment.

To further asses if our results are only in the long run or are existing in the short term with the same significance, we repeat the previous exercise using the GLS for fixed effects and EGLS for random effects. Table 3 (in appendix) display the results impact of financialisation on income inequality in MENA countries in the short run. We find that our results are remarkably the same significance. We find that our results in long term is more important that in the short term.

6. Conclusion and Policy Recommendation

Within this study, we aim to investigate the impact of financialization on income inequality for the case of the MENA countries using new proxies for measuring the financialization, applying GMM mode or the case of 12 MENA economics over 16 years from 2000 to 2015. Overall we demonstrate that the impact of financilisation is more pronounced in the long term than in the short term.

We demonstrate empirically that financialisation can be used as tool to target policy over social economic problem such as income inequality. Our measure of financialisation indicates that Islamic finance is a tool to reduce the inequality in the economy such as income inequality.

Table 2. Long run effect and error correction: Impact of financialisation on income inequality for MENA countries, 200-2015.²

Variable	ISL-TO-GDP	M3-TO-GDP
GINI(-1)	0.930219*** (0.0000)	0.736111*** (0.0000)
PRIV_DEBT_TO_GDP	0.007690*** (0.2824)	0.007664*** (0.5032)
FDI	-0.017038*** (0.3533)	-0.003887*** (0.8425)
OPEN_TR	0.008438*** (0.0173)	0.010358*** (0.0390)
FITOGDP	-0.027752*** (0.0754)	-0.007069*** (0.6814)
GDP_GR	0.025948*** (0.0079)	0.023136*** (0.0046)
EMPL_RATE	-0.012655*** (0.7797)	0.020325*** (0.6582)
AGEDEPENDENCY	-0.188415*** (0.4244)	0.371529*** (0.5055)
ISLTOGDP	0.056610*** (0.5565)	
ISLTOGDP(-1)	0.128300*** (0.4712)	
M3TO_GDP		-0.000938*** (0.9233)
M3TO_GDP(-1)		0.005601*** (0.3568)
S.E. of regression	0.422592	0.420517
J-statistic	83.95162	120.2524
Prob(J-statistic)	0.737928	0.025637
S.D. dependent var	1.665541	0.455532
Sum squared resid	28.21631	27.93991
Instrument rank	103	103

²Arellano-Bond dynamic panel-data estimation tow-step GMM results(using Eviews 8.0 command) with roust standard errors in parenthesis. (***), (**), (*) refer to significance at 1%, 5%, and 10% level respectively. GINI is GINI index for the country I at the year t. PRIV_DEBT_TO_GDP is private debt as share of GDP. FDI Is foreign direct investment. OPEN_TR is openness trade. FITOGDP is fixed investment as share of GDP. GDP_GR is growth rate. EMPL_RATE is unemployment rate. AGEDEPENDENCY is age dependency ratio. ISLTOGDP is total Islamic banking assets as share of GDP. M3TO_GDP is total liabilities as share of GDP. (-1) refers to lag -1. Sargan or J test is the test of over-identifying restrictions.

The combination between the real and financial sector makes the economy more resilient towards any upcoming crisis. The hegemonic aspect of more real sphere economy in MENA countries due to high investment in Sukuk makes the statistical indicator of the income inequality is quite insignificant comparing to the real size of the problem. Within the investment on the Sukuk, the macro development projects such as infrastructure, income inequality could be sorted very genuinely.

The financialization as a new measure to target the policies within the economic system tend to have a direct and indirect impact on the macroeconomic issues such as the income inequality. While the study shed the light on some factors that influence the income inequality as well as the combined effect for financialisation, there is still further to specially from the governance perspective whether in terms of financial institutions or in term of the government. The scarcity of data didn't allow to have the MENA countries within the sample study which lead to be limited just GMM estimator and not more sophisticated econometric models.

However the sample studying give us a general overview about the region in general and the impact of the financialization on the income inequality for the MENA countries is very significant, in turn an increase in the level of financialization lead to a decrease to the level of the income inequality in the sampled countries. The interconnectedness between the financial market and the real market is a main policies conducted for further macroeconomic policies such as the income inequality and economic growth.

The financial market at the MENA countries has creating interconnectedness between banking, stock market, and production of goods and services sectors. The use of Islamic finance as proxy for financialization within the Islamic banking or the green Sukuk remain an efficient tool to overcome any social economic problem such as income inequality and maintain the interconnectedness between sectors for different level of development of economic systems.

References:

- Aleman, J. 2011. Cooperative Institutions and Inequality in the OECD: Bringing the Firm Back. *Social Science Quarterly*, 92, 830-849.
- Agnello L., Sousa, R. 2012. How does fiscal consolidation impact on income inequality ? Document de travail no. 382, Banque de France.
- Arellano, M., Bond, S.R. 1991. Some tests of specification for panel data: Monte Carlo evidence and an application to employment equations. *Review of Economic Studies*, 58, 277-297.
- Assa, J. 2012. Financialization and its Consequences: the OECD Experience. *Finance Research*, Vol. 1, No. 1.
- Bibi, S., Nabli, M.K. 2010. Equity and Inequality in the Arab Region. *ERF Policy Research Report* 33.
- Bortz, P.G., Kaltenbrunner, A. 2017. The International Dimension of Financialization in Developing and Emerging Economies. *Development and Change* 49(2), 375-393.

- Bradley, D., Huber, E., Moller, S., Nielsen, F., Stephens, J. 2003. Distribution and redistribution in postindustrial democracies. *World Politics*, 55, 193-228.
- Braga, J.C.S. 1985. A temporalidade da riqueza. Instituto de Economia da Universidade Estadual de Campinas, Campinas.
- Braga, J.C.S., Giuliano Contento de Oliveira, Paulo José Whitaker Wolf, Alex Wilhans Antonio Palludeto, Simone Silva de Deos. 2017. For a political economy of financialization: theory and evidence. *Economia e Sociedade*, Campinas v. 26, Número Especial, p. 829-856.
- Christophers, B. 2015. The limits to financialization. *Dialogues in Human Geography* Vol. 5(2) 183-200.
- Darcillon, T. 2012. Do Interactions Between Finance and Labor Market Institutions Affect Wage Distribution? (Documents de travail du Centre d'Economie de la Sorbonne - CES) 2012.89.
- Demir, F. 2009. Financial liberalization, private investment and portfolio choice: Financialization of real sectors in emerging markets. *Journal of Development Economics*, 88, 314-324.
- Dünhaupt, P. 2014. An empirical assessment of the contribution of financialization and corporate governance to the rise in income inequality. Working Paper, Institute for International Political Economy Berlin, No. 41/2014.
- Dünhaupt, P. 2016. Financialization and the crises of capitalism. Working Paper, Institute for International Political Economy Berlin, No. 67/2016.
- Dünhaupt, P. 2013. The effect of financialization on labor's share of income. Working Paper, Institute for International Political Economy Berlin, No. 17/2013.
- Eaton, C., Habinek, J., Goldstein, A., Dioun, C., Godoy, S.G.D., Osley, S.T. 2016. The financialization of US higher education. *Socio-Economic Review*, 14(3), 507-535.
- El-Katiri, L., Fattouh, B., Sega, P. 2011. Anatomy of an oil-based welfare state: Rent distribution in Kuwait. London School of Economics: Kuwait Programme on Development, Governance and Globalisation in the Gulf States.
- Epstein, G.A. 2005. Introduction. In: Epstein, G.A. (Ed.). *Financialization and the World Economy*, 3-16. Cheltenham, UK, Edward Elgar.
- Epstein, G.A. 2001. Financialization, Rentier Interests, and Central Bank Policy. PERI Conference on "Financialization of the World Economy". University of Massachusetts, Amherst.
- Flaherty, E. 2015. Top incomes under finance-driven capitalism, 1990-2010: power resources and regulatory orders. *Socio-Economic Review*, 13(3), 417-447.
- Fligstein, N., Shin, T. 2004. The shareholder value society: A review of the changes in working conditions and inequality in the U.S: 1976-2000. In: Neckerman, K. (ed): *Social Inequity*. New York, Russell Sage Foundation.
- Gallagher, K., Prates, D.M. 2014. Financialization and the resource curse: the challenge of exchange rate management in Brazil. CEGI Working Paper, 8.
- Garcia-Arias, J. 2015. International Financialization and the Systemic Approach to International Financing for Development. *Global Policy*, Volume 6, Issue 1.
- Giovannoni, O. 2014. What Do We Know About the Labor Share and the Profit Share? Part II: Empirical Studies. The Levy Economics Institute. Working Paper No. 804.
- Godechot, O. 2016. Financialization is Marketization! Northwestern University Workshop on Global Inequality.
- Grzegorz, G., Szczepankowski, P., Wisniewska, D. 2016. *e-Finanse*, vol. 12, nr 4.

- Hakim, A., Hachicha, N., Thalassinou, E.I. 2022. The International Spillover Among Sectors and the Interconnectedness to the Global Inflation Cycle. Available at SSRN 4058031.
- Hakim, A., Thalassinou, E.I. 2023. The Global Business Cycle within the New Commodities and the Financial Cycle: An Empirical Evidence Based on a Multivariate Unobserved Components Model (UCM). In *New Topics in Emerging Markets*. IntechOpen.
- Hein, E., Schoder, C. 2011. Interest rates, distribution and capital accumulation: A post-Kaleckian perspective on the US and Germany. *International Review of Applied Economics*, 25(6), 693-723.
- Hein, E. 2013. Finance-dominated Capitalism and Redistribution of Income: A Kaleckian Perspective. Berlin School of Economics and Law, and Institute for International Political Economy. Berlin, Working Paper No. 746.
- Hein, E., Detzer, D. 2014. Finance-dominated capitalism and income distribution: a Kaleckian perspective on the case of Germany. FESSUD, Working Paper, No 62.
- Hein, E., Detzer, D. 2015. Finance-Dominated Capitalism and Income Distribution: A Kaleckian Perspective on the Case of Germany. *Ital Econ J.*, 1, 171-191.
- Hein, E., Dühaupt, P., Alfageme, A., Kulesza, M. 2017. Financialisation and distribution in the US, the UK, Spain, Germany, Sweden and France: Before and after the crisis. Working Paper, Institute for International Political Economy Berlin, No. 85/2017.
- Hein, E., Dühaupt, P., Kulesza, M., Alfageme, A. 2017. Financialisation and distribution from a Kaleckian perspective: the US, the UK and Sweden compared – before and after the crisis. Working Papers Series Dipartimento Di Scienze Sociali Ed Economiche, n. 9/2017.
- Hlasny, V., Verme, P. 2013. Top Incomes and the Measurement of Inequality in Egypt. Working Paper, World Bank.
- Kalecki, M. 1971. Political Aspects of Full Employment. In: *Selected Essays on the Dynamics of the Capitalist Economy*. Cambridge, Cambridge University Press.
- Karwowski, E., Stockhammer, E. 2016. Financialisation in Emerging Economies: A Systematic Overview and Comparison with Anglo-Saxon Economies. Working Paper 1616, PKSG.
- Karwowski, E., Shabani, M., Stockhammer, E. 2017. Financialization: Dimensions and Determinants. A Crosscountry Country Study. *Economics Discussion Papers*, 1.
- Krippner, G.R. 2005. The financialization of the American Economy. *Socio-economic Review*, 3, 173-208.
- Kus, B. 2012. Financialization and Income Inequality in OECD Countries: 1995-2007. Division II Faculty Publications.
- Kwon, R., Roberts, A. 2015. Financialization and Income Inequality in the New Economy: An Exploration of Finance's Conditional Effects. *Sociology of Development* Vol. 1, Number 4, 442-462.
- Lapavistas, C. 2009. Financialisation embroils developing countries. *Papeles de Europa*, 19 (2009), 108-139.
- Lin, K.H., Tomaskovic-Devey, D. 2013. Financialization: Causes, Inequality Consequences, and Policy Implications. *Banking Inst.*, 167(2013).
- McCall, L. 2004. The Inequality Economy – How new Corporate Practices Redistribute Income to the Top. Demos: A Network for Ideas & Action Working Paper.
- Naidu, N., Nyarko, Y., Wang, Y.S. 2016. Monopsony Power in Migrant Labor Markets: Evidence from the United Arab Emirates. *Journal of Political Economy*, Vol. 124, issue 6, 1735-1792.

- Nau, M. 2013. Economic Elites, Investments, and Income Inequality. *Social Forces*, Vol. 92, 437-461.
- Oatley, T., Petrova, B. 2016. *Banker for the World: Global Capital and America's Financialization*. University of North Carolina.
- Orhangazi, Ö. 2007. *Financialization and Capital Accumulation in the Non-Financial Corporate Sector: A Theoretical and Empirical Investigation of the U.S. Economy: 1973-2003*. Working paper Number 149, Roosevelt University.
- Palley, T. 2013. *Financialization: The Economics of Finance Capital Domination*. Palgrave.
- Piketty, T. 2014. *Capital in the Twenty-first Century*. Cambridge, MA: Harvard University Press.
- Piketty, T., Facundo, A. 2014. Measuring Top Incomes and Inequality in the Middle East: Data Limitations and Illustration with the Case of Egypt.
- Raza, H., Gudmundsson, B., Kinsella, S., Zoega, G. 2015. Experiencing financialisation in small open economies: An empirical investigation of Ireland and Iceland. FESSUD.
- Roine, J., Vlachos, J., Waldenström, D. 2009. The long-run determinants of inequality: What can we learn from top income data? *Journal of Public Economics*, 93, 974-988.
- Said, M. 2007. The Fall and Rise of Earnings Inequality in Egypt: New Evidence from ELMPS. *Economic Research Forum*.
- Seguino, S. 2011. *Financialization, Distribution, and Inequality*. DAWN Development Debates. Port-à-Piment, Mauritius, Africa.
- Sjöberg, O. 2009. Corporate Governance and Earnings Inequality in the OECD Countries 1979- 2000. *European Sociological Review*, 25(5), 519-533.
- Soons, O.C. 2016. *Inequality and Financialization*. Senior Honors Projects, Paper 492.
- Stockhammer, E. 2012. Financialization, income distribution and the crisis. *Investigación Económica*, vol. LXXI, 279, enero-marzo de 2012, pp. 39-70.
- Stolbova, V., Battiston, S., Napoletano, M., Roventini, A. 2017. Financialization of Europe: a comparative perspective. *ISIGrowth*, 22/2017 July.
- Thalassinos, E., Ugurlu, E., Muratoglu, Y. 2012. Income inequality and inflation in the EU. *European Research Studies Journal*, 15(1), 127-140.
- Tomaskovic-Devey, Donald, Ken-Hou Lin, et Nathan Meyers. 2015. «Did financialization reduce economic growth?» *Socio-Economic Review* 1-24.
- Tomaskovic-Devey, D., Lin, K.H. 2013. Financialization and U.S. Income Inequality, 1970-2008. *American Journal of Sociology*, Vol. 118, No. 5, pp. 1284-1329.
- UNCTAD. 2015. *Financialization and macroeconomic discontent*. Trade development Report.
- Volscho, T.W., Kelley, J.N. 2012. The Rise of the Super-rich: Power Resources, Taxes, Financial Markets, and the Dynamics of the Top 1 percent, 1949 to 2008. *American Sociological Review*, 77, 679-698.
- Wahba, J. 1996. *Earnings and Regional Inequality in Egypt*. *Economic Research Forum*.
- Wahba, J. 2009. *The Impact of Labor Market Reforms on Informality in Egypt*. Population Council.
- Weyl, E.G. 2016. The Openness-Equality Trade-Off in Global Redistribution. *Economic Journal*.
- WID. 2017. *Income Inequality 3. Humanity Divided: Confronting Inequality in Developing Countries*.
- WID. 2018. *Measuring Inequality in the Middle East 1990-2016: The World's Most Unequal Region?*
- World Bank. 2012. *Inside Inequality in Egypt. Historical trends, recent facts, people's perceptions and the spatial dimension*.