JIEM
JOURNAL OF INTERNATIONAL ECONOMICS AND MANAGEMENT

Journal of International Economics and Management

journal homepage: http://jiem.ftu.edu.vn

The impact of financial openness on the earnings of self-employed workers - an empirical evidence from a panel dataset

Le Thi Thu Huong[1]
Colorado State University, Fort Collins, USA
Bui Thi Ly
Foreign Trade University, Hanoi, Vietnam
Nguyen Huyen Minh
Foreign Trade University, Hanoi, Vietnam

Received: 21 May 2020; **Revised:** 20 July 2020; **Accepted:** 30 July 2020
https://doi.org/10.38203/jiem.020.2.0009

Abstract

This paper contributes to the literature on the effect of financial openness by investigating the factors and determinants which drive the income share to self-employed labor during financial liberalization. The question of the precise impact of liberalization on the share of the self-employed has received less attention in the literature. The authors use a de jure or a rule-based indicator as a measure of capital account openness. The empirical work is applied for a panel dataset of 30 countries during the period of 1970 - 2015. The results from all specifications support the hypothesis that financial integration leads to an increase in the unemployment rate as well as in the income share of self-employed. Nevertheless, the positive relation between financial openness and self-employed income is not evident when we focus solely on developed countries.

Keywords: Financial openness, Self-employed workers, Labor share of income

1. Introduction

Financial openness has been one of the most enduring topics of international economists since the studies on financial repression of McKinnon (1973) and Shaw (1973). In theory, financial integration improves economic growth, financial development, and institutional quality. Furthermore, it helps in reducing income inequality, poverty, and unemployment rate. Opening up to international financial markets improves market efficiency, thereby leading to

[1] Corresponding author: huongle@colosate.edu

better allocation of investment (Fama, 1970). Financial integration is also supposed to boost the productivity of capital stock by supporting borrowing for entrepreneurs, creating new investment opportunities, and promoting growth (Orgiazzi, 2007). Nevertheless, in empirical studies, there has been a long, contentious debate among economists on the real direct and indirect benefits of financial liberalization (Gourinchas and Jeanne, 2006). Moreover, we have not seen much literature on financial openness, which considers its impact on distribution, especially on the income of the self-employed worker. Therefore, the linkage of capital account openness and the earnings of self-employment is still an open question.

This paper will review the literature on the impact of financial openness while investigating its effects on the income of self-employed as well as the unemployment rate. In this work, we construct an adjusted measurement of the earnings from self-employed workers and employ an KAOPEN index, which was constructed by Chinn and Ito (2007) as a rule-based index of financial openness, then elaborate the relationship between capital account openness and self-employed income. The empirical work is applied to a panel dataset of 30 countries from 1970 to 2015 , for which data is available. The results from all specifications support the hypothesis that financial integration leads to an increase in the earnings of self-employed labor for the all-countries sample. Nonetheless, the positive relationship between financial openness and self-employed income is not evident when we focus solely on developed countries.

The rest of the paper is organized as follows: Section 2 focuses on reviewing theories on financial integration and self-employed income. Section 3 presents the hypotheses and analyzes the data and empirical model, while the results of the empirical framework are introduced and analyzed in section 4. Section 5 brings together some concluding remarks that contain the summary of the theoretical framework and empirical results as well as some policy recommendations.

2. Literature review

2.1 Who is self-employed?

This present paper seeks to investigate the relationship between financial openness and the earnings of self-employment in 30 countries; therefore, it is very important to understand the concept of self-employment. Nevertheless, as previously stated, there has been a very contentious debate on the definition of self-employment. Therefore, the question of "Who is called a self-employed worker?" must be explored.

According to Munro (2005), there are three types of employment. They are paid employment, unpaid employment and self-employment. Self-employed workers are individuals who perform some work in order to get profit or family gain, in cash or in kind (Le, 1999), therefore Munro (2005) defines "self-employment as the employment of employers, workers who work for themselves, members of producers' co-operatives, and unpaid family workers", measured as the percentage of employment. Diez and Ozdagli (2011) measure self-employment as the

[2] There are 15 developing and 15 developed countries in the sample. See Appendix for the details.

share of employers or own-account workers in the total labor workforce instead of employment in the country. This measurement leads to a lower rate of self-employment compared to the measure of OECD.

As the classification of ILO on the International Classification of Status in Employment ICSE - 1993 (Table 2.D - ILO Yearbooks of Labor Statistics on Total Employment by Status in Employment), There are six main types of employment, which included employees, employers, own-account workers, members of producers' cooperatives, contributing family workers, and workers not classifiable by status. The four last types in the category are aggregated to be self-employed workers. The ILO definition of self-employment was employed to measure the income share of self-employed workers.

The European System of Accounts (ESA, 2010) defines "self-employed as persons who own sole or joint businesses of the unincorporated enterprises in which they work, with the exception of those unincorporated enterprises classified as quasi-corporations". Therefore, self-employed are unpaid family workers, outworkers and workers who engaged in their entire production and final consumption with their own capital formation. Similarly, Parker (2004) defines self-employed as individuals who earn no wage or salary but generate their income by implementing their profession or entrepreneurship on their own account. Studies also link to entrepreneurship and informality's activities while analyzing the idea of self-employment. For instance, Goetz and Shrestha (2009) and Munro (2005) consider self-employment rate as a proxy for the level of entrepreneurial activities; it is also considered as the simplest kind of entrepreneurship (Blanchflower, 2000).

To conclude, in this paper, the terms informality, entrepreneurship or self-employment are alternatively used. Nevertheless, the paper only employs the self-employment definition of OECD which accounts for employers, workers who work for themselves, members of producers' co-operatives and unpaid family workers who do not contract to receive a fixed amount of income at a specific time but earn their income generated by the enterprise. We have seen a significant amount of unpaid family workers in farming and retail trade areas. Additionally, self-employment is also considered as either a survival strategy for those who cannot find any other jobs to earn an income or as evidence of entrepreneurial spirit and a desire to be their own boss.

2.2 The impacts of capital account openness on the income of self-employed workers

There has been a declining trend in the labor share of income in the past three decades. Krueger (1999) finds an increasing trend of the labor share from the end of World War II until the early 1970s, but after reaching its highest level in the mid-1970s, the labor share declined by almost 3 percent. Diwan (1999) finds that the labor share of income in the research dropped from an average of 54.5 percent of GDP in 1975 to 49.3 percent in 1995. Using two different databases, the UN National Account Data and the United Nations Industrial Development Organization (UNIDO) of industrial survey in the manufacturing sector, Jayadev and Lee (2003) also show a decline of the national income share going to

labor starting from 1980. What lies behind the declining trend of the labor share of income all over the world? Does the rising trend of self-employment matter? Globalization, which includes both trade liberalization, financial integration, and technological progress have been ascribed an important role in the decline.

The role of financial markets has been highlighted as a potential cause of rising inequality and declining labor share (ILO *et al.*, 2015). While numerous studies have analyzed the determinants of the share of labor in relation to the share of capitalists as well as the recent declining trend of the labor share of income, few have linked it to financial liberalization which is arguably one of the most significant changes in the international economy over the last three decades (Jayadev, 2007). In addition, such analyses have mainly concentrated on personal income distribution and wage inequality while a limited number of studies have explored the effect of capital account openness on the labor share of income. Moreover, these studies on the correlation between capital account liberalization and the labor share of income, point to ambiguous findings with some yielding positive impact and others negative. One issue that needs to be clarified is what drives these different results. Does the use of different databases matter? To what extent and how is the long-term decline in the labor share of income related to capital account openness? Mezzetti and Dinopoulos (1991) and Jayadev (2007) seek to explain a negative correlation between financial account mobility and the national income share going to labor by exploring a model in which, due to capital mobility, a decrease in bargaining powers of labor leads to a decline in the income share going to workers. Harrison (2002) utilizes a model of a bargaining game, between labor and capital over excess rents in production, to show that in the context of imperfect competition, the share of excess rents going to labor falls along with the fixed costs of relocation abroad for firms. The change in factor shares is related to changes in capital/labor ratios. She further finds that exchange rate crises lead to a decline in the wage share. Developing this idea, Jayadev (2007), by using a panel regression model to estimate the correlation of an unadjusted labor share of income and the level of financial openness, finds a robust negative impact for the group of developed and middle-income countries; however, this negative effect does not hold for the poorest countries. Jayadev (2007) argues that financial openness has increased the bargaining power of capital and therefore increased capital flows and rents accruing to capital. Hence, financial integration may reduce the income share of labor at the firm-level and consequently at the macroeconomic level.

As a result, financial openness would lead to an increase in the unemployment rate then tend to drive self-employment positively. Capital account openness leads to an inflow of foreign capital and a weakening of labor regulations to attract foreign capital. Migration from rural areas and the expansion of the informal labor force further weakens the bargaining power of workers. The consequent rise in unemployment as formal employment opportunities are squeezed results in an increase in self-employment as a survival strategy in the absence of employment. Thus, financial liberalization could lead to rise in self-

employment. Nevertheless, this increase in self-employment is a direct response to the squeeze of formal employment opportunities.

3. Hypotheses, data and empirical model

3.1 The measurements of financial openness

There are a few different measures of financial openness. The most popular one is a de jure or a rule-based index - KAOPEN - constructed by Chinn and Ito (2007). They created an index to measure the extent and intensity of capital controls based on the binary dummy variables that codify the tabulations of restrictions on cross-border financial transactions reported in AREAER (Chinn and Ito, 2007). The index is available for 181 countries over the period of 1970 - 2015. The advantages of the KAOPEN index are that it is constructed in a relatively transparent way and is updated annually. It is also available for a wide range of countries, which is not common for other capital account openness indices. Nonetheless, as being a rule-based index, KAOPEN index does not reflect the real capital account openness situation for each country as well as a de facto measurement.

3.2 The measurement of self-employed income

To get the information of the self-employed, the authors collected the data for the total workforce, the number of employees and employers for 30 countries of the author's sample from 1970 to 2015. The data are available on Table 2.D - ILO Yearbooks of Labor Statistics on Total Employment by Status in Employment.

The measure of the income share of the self-employed is generated based on an adjustment of labor share of income and is as follows:

$$Selfincome = \frac{\frac{Compen\_employees * \sum Self\_employed}{\sum Employees}}{Gross\_value\_added}$$

$$\Rightarrow Selfincome = \frac{\frac{Compen\_employees * (\sum Total\_workforces - \sum Employees - \sum Employers)}{\sum Employees}}{Gross\_value\_added}$$

3.3 Control variables

Capital account openness, trade liberalization and technological progress seem to be the most important mechanisms driving the declining trend of labor share of income in the past three decades. Economic development, government share of GDP, unemployment rate, labor market regulations as well as the size of labor workforce are equally regarded as other important determinants through which capital account openness affects the labor share of income, which does account for earnings of the self-employed workers.

Table 1. Definitions of control variables

Variables	Definitions	Sources
Development	GDP per capita	Penn World Table 8.1
Trade Openness	Exports + imports/GDP	WDI
Government Share of GDP	The government share of expenditures, as a percentage of GDP	WDI
Unemployment Rate	Unemployed persons/Labor force	WDI
Population	The working-age population (defined in this study as ages 16-60, in thousands)	Penn World Table 8.1
Technological Progress	Total of patent applications	WDI
Labor Market Regulations	Lamrig: A purely de jure index on the rigidity of employment regulations	Campos and Nugent (2012)

Source: The authors' collection

3.4 Hypotheses

This paper tests a hypothesis that higher degree of capital account openness would be associated with an increase in the unemployment rate as well as the earnings of self-employed workers. Moreover, the authors also expect to see positive relationships between the unemployment rate and the income of self-employed workers, and other control variables such as trade openness, the number of patent applications as well as the size of total labor workforce. Positive linkages between financial integration and economic development proxied by GDP per capita, and the labor market regulations are postulated as well.

3.5 Econometric model

We run diagnostic tests to ensure the goodness of the estimated model, the Breusch-Pagn Lagrange multiplier (LM) for random effects and the Durbin-Wu-Hausman test for endogeneity. Both the null hypotheses were not rejected, suggesting that there is no evidence of significant differences across countries, therefore ordinary least square (OLS) estimates might be relevant. The Pasaran CD test was used to test whether the residuals are correlated across countries and the null hypothesis that residuals are not correlated was not rejected. The Pagan-Hall test was used to test for the presence of the significant heteroskedasticity and the null hypothesis of homoscedasticity were rejected, suggesting that Driscoll and Kraay standard errors might be consistent for estimations[3]. Next, we employed a Hausman test to choose between fixed and random effects. The null hypothesis that the preferred model is a random effects model was also rejected. Therefore, the fixed effects model was found to be more reliable.

The correlation matrix for all controls and dependent variables has not shown any coefficients that are greater than 50%. This result suggests that the control variables are not endogenous with our dependent variable (the labor share of income).

[2] Daniel, H: "Robust Standard Errors for Panel Regressions with Cross-Sectional Dependence", page 4.

In this paper, we use the model of fixed-effects (FE) regression in order to control for both cross-country and temporal effects. The advantage of the fixed-effects model is that it can control for all time-invariant different countries. Moreover, the fixed-effect can reduce omitted variable bias due to time-invariant characteristics (Torres-Reyna, 2007). In addition, panel data are more informative and efficient than pure time-series or pure cross-sectional datasets, and their econometric analysis better captures the complexity of economic behavior (Torres-Reyna, 2007). One drawback of the fixed-effects model is that it can only explain the variations within a country, and we may lose information from cross-country variations (Dunhaupt, 2013).

In order to test the hypothesis postulated before, the adjusted measurement of self-employed income is estimated in levels in the following form:

$$Selfincome = \beta_1 + \beta_2 FO_{it} + ...\beta_k X_{k,it} + \gamma_2 E_2 + ...\gamma_n E_n + \delta_2 T_2 + ...\delta_n T_t + \varepsilon_{it} \quad (1)$$

Where i and t designate country and time period, respectively. The dependent variable is self-employed income and the unemployment rate. FO is financial openness measured by a de jure or rule-based index (the KAOPEN index) as a measurement of capital account openness. represents the set of control variables. are the coefficients for these independent variables. is the error term. is the entity n. is the coefficient for the binary country regressors, while is the coefficient for the binary time regressors. is time as binary variables.

The baseline specifications for the sample with all countries as follows:

$$Unemrate = \beta_1 + \beta_2 Kaopen\_index + \beta_3 \log GDP + \beta_4 sqrt \log GDP + \beta_4 Trade\_Openness + \beta_5 Govshare + \beta_6 Patent\_A + \beta_7 \log Pop + \beta_8 Linear\_lamrig + \beta_9 Laborshare + \gamma_2 E_2 + ...\gamma_n E_n + \delta_2 T_2 + ...\delta_t T_t + \varepsilon_{it} \quad (2)$$

$$Selfincome = \beta_1 + \beta_2 Kaopen\_index + \beta_3 \log GDP + \beta_4 sqrt \log GDP + \beta_4 Trade\_Openness + \beta_5 Govshare + \beta_6 Unemrate + \beta_7 Patent\_A + \beta_8 \log Pop + \beta_9 Linear\_lamrig + \beta_{10} FO1 + \beta_{11} FO2 + \gamma_2 E_2 + ...\gamma_n E_n + \delta_2 T_2 + ...\delta_t T_t + \varepsilon_{it} \quad (3)$$

where Selfincome is the earnings of self-employed labor; Unemrate is the unemployment rate; KAOPEN_index is the de jure or rule-based index of capital account openness; log GDP is a proxy for economic development and its squared value which has been used to consider the possibility of decreasing return (Guerriero and Sen, 2012).

Trade_Openness reflects degrees of trade liberalization. Govshare is government expenditure relative to GDP and proxied for government intervention. Patent_A is the total number of patent applications per year by both countries' residents and non-residents. Logpop is a proxy for the size of the total labor workforce. Linear_lamrig is the linear values of labor market regulations and laborshare is the labor share of income. FO1 and FO2 are outcome-based indexes of financial integration constructed by Lane and Milesi-Ferretti (2006, 2007).

4. Results

4.1 Capital account openness and the unemployment rate

Empirical studies have shown a negative relation of the financial integration and the labor share of income, which suggested that the financial openness leads to an increase in the unemployment rate and then a decrease in the labor share of income.

Table 2 includes 4 columns: Column (1) introduces the full specification, which considers the linkage of the unemployment rate and the financial openness level controlling for log GDP per capita, its squared value in order to consider the possibility of decreasing returns. The model also controls for trade openness, government share of GDP, the unemployment rate, and the total number of patent applications, Logpop as a proxy for the size of the total labor workforce, the index of the rigidity of employment regulations (Linear_lamrig) as well as an unadjusted labor share of income (laborshare1). Column (2), (3), (4) use different measures of labor share of income which are adjusted for the earnings from self-employment.

Positive and strongly significant effects of the KAOPEN index on the unemployment rate are reported in Table 2. The coefficients are relatively high and significant. This indicates that a higher degree of capital account openness leads to an increase in the unemployment rate. In general, a one percent increase in the degree of financial openness results in a 0.4 percent increase in the unemployment rate of 30 countries. The analysis of the negative effect of capital account openness on the labor share of income is supported by the positive correlation of financial openness and the unemployment rate. As discussed in the previous section, capital account openness leads to the relocation of companies to foreign countries with lower cost of production. It might result in a lay-off of unskilled labor and reduction of their bargaining power and therefore, an increase in the unemployment rate and a decrease in the labor share of income even when it does account for the earnings of the self-employed workers.

In sum, the negative effect of capital account openness on the labor share of income is robust across the different measures of financial openness and the different adjustments of labor income share (laborshare1: the ratio of compensation of employee to GDP, while laborshare2-laborshare4 are adjusted labor share of income, which account for the earning of self-employed workers) and also the alternative econometric models. The positive influence of financial openness on the income share of self-employed workers also supports the interpretation of the mechanisms by which financial integration impacts of the labor share. Despite the increase in self-employment, income share still falls.

4.2 Self-employed income and capital account openness

To investigate the robustness of the negative effect of capital account openness on the labor share of income, we employ the fixed effect regression of the KAOPEN index and the self-employed income for the whole sample and for two panels: developing and developed countries as well.

Table 2. Capital account openness and unemployment rate

VARIABLES	(1) Unemrate	(2) Unemrate	(3) Unemrate	(4) Unemrate
Kaopen_index	0.402***	0.376*	0.247	1.064***
	(0.117)	(0.201)	(0.182)	(0.147)
logGDPpcpt	2.539*	1.274	2.484	-8.429**
	(1.492)	(4.286)	(3.543)	(4.221)
sqrtlogGDPpcpt	-0.274***	-0.297	-0.351*	0.279
	(0.0788)	(0.218)	(0.183)	(0.216)
Trade_Openness	0.00193	0.00915	0.00852	-0.0199
	(0.00417)	(0.00763)	(0.00688)	(0.0128)
Govshare	0.760***	0.726***	0.639***	0.603***
	(0.0541)	(0.111)	(0.0797)	(0.0672)
Patent_A	7.64e-06***	1.73e-05	1.12e-05***	8.61e-06***
	(2.09e-06)	(1.29e-05)	(3.97e-06)	(2.49e-06)
Logpop16_60	2.701*	-2.490	-0.123	-0.663
	(1.398)	(3.782)	(3.267)	(2.451)
Linear_lamrig	-0.169	0.0564	0.257	0.356
	(0.280)	(0.491)	(0.425)	(0.356)
laborshare1	-15.06***			
	(2.719)			
laborshare2		1.002		
		(3.803)		
laborshare3			1.365	
			(3.196)	
laborshare4				-8.702***
				(3.094)
Constant	-7.635	15.64	3.194	57.53**
	(7.505)	(22.85)	(19.77)	(23.13)
Observations	709	309	388	369
R-squared	0.309	0.373	0.364	0.387
Number of Country_name1	29	23	26	17
Fe	Yes	Yes	Yes	Yes

Source: The authors' compilation

Table 3 includes three columns: Column (1) introduces the full specification, which considers the linkage of self-employed income and financial openness levels controlling for log GDP per capita, its squared value in order to consider the possibility of decreasing returns. The model also controls for trade openness, government share of GDP, the unemployment rate, and the total number of patent applications, Logpop as a proxy for the size of total labor

workforce, the index of the rigidity of employment regulations (Linear_lamrig). Column (2), (3) use different measures of financial openness degrees which are outcome-based indexes.

Despite using different measures of financial openness levels, Table 3 displays positive effects of financial openness measured by both rule-based and outcome-based indexes on the national income share of self-employed workers. The coefficient is significant when FO2 is employed as a measure of financial openness. The results suggest that higher degree of capital account openness leads to an increase in the self-employed income share. This result indicates that a one percent increase in the degree of financial openness results in a 0.0351 percent increase in the earnings of self-employed workers in the sample of 30 countries. The positive effect is consistent with the negative effect of capital account openness on the national labor share of income. As documented in the previous section, capital account openness generates more chances to relocate the production to low-cost countries and weakens the bargaining power of the labor while increasing unemployment. Therefore, employees of the formal sector are laid off and self-employment increases, leading to an increase in the share of self-employed workers. What is noteworthy is that this increase in the share of self-employed workers does not reverse the impact of capital account openness on reducing the share of income going to labor, even when the earnings of self-employed are included.

The impact of capital account openness on increasing the share of income going to self-employed workers is greater in developing countries compared to developed countries (see Table 4). This result is consistent with the opposite effects of the national income share going to labor in the previous section whenever FO1 and FO2 are used to measure for financial openness.

4.2 Self-employed income and capital account openness

Despite using different measures of financial openness levels, Table 3 displays positive effects of financial openness measured by both rule-based and outcome-based indexes on the national income share of self-employed workers. The coefficient is significant when FO2 is employed as a measure of financial openness. The results suggest that higher degree of capital account openness leads to an increase in the self-employed income share. This result indicates that a one percent increase in the degree of financial openness results in a 0.0351 percent increase in the earnings of self-employed workers in the sample of 30 countries. The positive effect is consistent with the negative effect of capital account openness on the national labor share of income. As documented in the previous section, capital account openness generates more chances to relocate the production to low-cost countries and weakens the bargaining power of the labor while increasing unemployment. Therefore, employees of the formal sector are laid off and self-employment increases, leading to an increase in the share of self-employed workers. What is noteworthy is that this increase in the share of self-employed workers does not reverse the impact of capital account openness on reducing the share of income going to labor, even when the earnings of self-employed are included.

Table 3. Capital account openness and self-employed income share

VARIABLES	(1) Selfincome	(2) Selfincome	(3) Selfincome	(4) Unemrate
Kaopen_index	0.00351			1.064***
	(0.00217)			(0.147)
logGDPpcpt	-0.493***	-0.473***	-0.429***	-8.429**
	(0.0440)	(0.0493)	(0.0467)	(4.221)
sqrtlogGDPpcpt	0.0241***	0.0231***	0.0207***	0.279
	(0.00228)	(0.00259)	(0.00245)	(0.216)
Trade_Openness	-0.000400***	-0.000410***	-0.000584***	(0.356)
	(8.14e-05)	(8.77e-05)	(0.000101)	
Govshare	-0.00773***	-0.00790***	-0.00770***	
	(0.00130)	(0.00131)	(0.00129)	
Unemrate	0.00314***	0.00331***	0.00337***	
	(0.000658)	(0.000664)	(0.000647)	
Patent_A	-3.61e-07**	-3.68e-07***	-3.54e-07**	
	(1.40e-07)	(1.41e-07)	(1.38e-07)	-8.702***
Logpop16_60	0.0683	0.0678	0.0601	(3.094)
	(0.0414)	(0.0425)	(0.0410)	57.53**
Linear_lamrig	0.0178***	0.0165***	0.0154***	(23.13)
	(0.00535)	(0.00532)	(0.00525)	369
FO1		0.000419		0.387
		(0.000794)		17
FO2			0.00569***	Yes
			(0.00184)	
Constant	2.526***	2.427***	2.260***	
	(0.225)	(0.236)	(0.230)	
Observations	309	309	309	
R-squared	0.542	0.538	0.553	
Number of Country_name1	23	23	23	

Robust standard errors in parentheses *** p < 0.01, ** p < 0.05, * p < 0.1

Source: The authors' compilation

The impact of capital account openness on increasing the share of income going to self-employed workers is greater in developing countries compared to developed countries (see Table 4). This result is consistent with the opposite effects of the national income share going to labor in the previous section whenever FO1 and FO2 are used to measure for financial openness.

Table 4. Capital account openness and self-employed income share for developing and developed countries

VARIABLES	(1) Selfincome Developing	(2) Selfincome Developing	(3) Selfincome Developing	(4) Selfincome Developing	(5) Selfincome Developing	(6) Selfincome Developing
Kaopen_index	0.00438	-0.0101***				
	(0.00379)	(0.00223)				
logGDPpcpt	-0.682***	-0.299***	-0.645***	-0.494***	-0.624***	-0.479***
	(0.127)	(0.0933)	(0.125)	(0.0963)	(0.124)	(0.0937)
sqrtlogGDPpcpt	0.0363***	0.0143***	0.0350***	0.0239***	0.0334***	0.0232***
	(0.00748)	(0.00455)	(0.00734)	(0.00471)	(0.00729)	(0.00458)
Trade_Openness	-0.000314**	-0.000185	-0.000513***	-0.000485***	-0.000691***	-0.000495***
	(0.000130)	(0.000116)	(0.000147)	(0.000102)	(0.000173)	(0.000105)
Govshare	-0.0138***	-0.00302***	-0.0146***	-0.00393***	-0.0137***	-0.00394***
	(0.00299)	(0.00105)	(0.00291)	(0.00110)	(0.00287)	(0.00111)
Unemrate	0.00762***	0.00157***	0.00831***	0.00137***	0.00723***	0.00141***
	(0.00223)	(0.000388)	(0.00214)	(0.000417)	(0.00213)	(0.000414)
Patent_A	-8.35e-07**	-5.47e-07***	-8.77e-07**	-4.59e-07***	-8.47e-07**	-4.55e-07***
	(4.00e-07)	(9.01e-08)	(3.87e-07)	(9.34e-08)	(3.82e-07)	(9.32e-08)
Logpop16_60	0.0288	-0.00668	0.00697	-0.00925	0.0476	-0.0142
	(0.0666)	(0.0395)	(0.0661)	(0.0435)	(0.0641)	(0.0434)
Linear_lamrig	0.0503***	-0.000110	0.0508***	0.00268	0.0471***	0.00267
	(0.0126)	(0.00317)	(0.0123)	(0.00330)	(0.0122)	(0.00331)
FO1			0.00435**	-0.000264		
			(0.00182)	(0.000505)		
FO2					0.00972***	-0.000168
					(0.00324)	(0.00145)
Constant	3.354***	1.739***	3.224***	2.746***	3.054***	2.685***
	(0.528)	(0.488)	(0.521)	(0.489)	(0.521)	(0.480)
Observations	128	181	128	181	128	181
R-squared	0.626	0.674	0.640	0.633	0.650	0.632
Number of Country_name1	11	12	11	12	11	12
Fe	yes	Yes	Yes	Yes	yes	yes
Country_code	1	2	1	2	1	2

Robust standard errors in parentheses *** p < 0.01, ** p < 0.05, * p < 0.1

Source: The authors' compilation

5. Conclusion

This paper aims to investigate the relative impact of financial openness on the unemployment rate as well as the income of self-employment. To the end, the authors employed a panel

dataset of 30 countries, including 15 developing and 15 developed countries. The authors utilized both de jure and de facto measures of the capital account openness and an adjustment of the earnings of self-employed workers.

The positive effect of capital account openness on the self-employed income was tested with a panel fixed effect model using controlling for trade openness, technological change and other economic variables. Two panels of developing and developed countries were also estimated. Three interesting stylized facts emerge from the results. Capital account openness is positively and significantly correlated to the unemployment rate in almost all specifications. As a result, the capital account openness is positively and significantly correlated to self-employed income in almost all specifications. Nonetheless, the positive relationship between financial openness and self-employed income is not evident when we focus solely on developed countries.

Self-employment has played a worthwhile role not only in raising the income share of labor but also in solving the problem of unemployment. Governments should support this type of labor when they start their own entrepreneurship. For instance, the Self Help Groups (SHG) is one of the most popular projects in India, which provides training in livestock rearing, vegetable and fish cultivation and household business setup for rural self-employed women in India. The program also helps with nationalized banks for leveraging larger credit to scale up their self-employed enterprises. Other solutions might work well to raise the labor share of income for both developed and developing countries such as minimum wage policy in both informal and formal sectors.

References

Blanchflower, D.G. (2000), "Self-employment in OECD countries", *Labour Economics*, Vol. 7 No. 5. pp. 471 - 505.

Campos, N. and Nugent, J. (2012), "The dynamics of the regulation of labor in developing and developed countries since 1960", Working Paper No. 6881, Institute for the Study of Labor, Bonn.

Chinn, M. and Ito, H. (2007), "A new measure of financial openness", *Journal of Comparative Policy Analysis*, Vol. 10 No. 3, pp. 309 - 322.

Diez, F. and Ozdagli, A. (2011), "Self-employment in the global economy", Working Papers No 11/5, Federal Reserve Bank of Boston.

Diwan, I. (1999), *Labor shares and financial crises*, Preliminary draft, November XX, World Bank.

Dunhaupt, P. (2013), "The effect of financialization on labor's share of income", Working Paper No. 17, Institute for International Political Economy Berlin.

ESA. (2010), *European system of account*, ESA Publishing.

Fama, E. (1970), "Efficient capital markets: a review of theory and empirical work", *The Journal of Finance*, Vol. 25 No. 2, Papers and Proceedings of the Twenty-Eighth Annual Meeting of the American Finance Association New York, (December, 1969): pp. 28 - 30, (May, 1970): pp. 383 - 417.

Goetz, S.J. and Shrestha, S.S. (2009), "Explaining sef-employment success and failure: Wal-mart versus Starbuck, or Schumpeter versus Putnam", *Social Science Quaterly*, Vol. 90 No. 1, pp. 22 - 38.

Goetz, S. and Ruspasingha, A. (2013), "The determinants of self-employment growth: insights from county-level data, 2000 - 2009", *Economic Development Quarterly*, Vol. 20 No. 10, pp. 1 - 19.

Gourinchas, P. and Jeanne, O. (2006), "The elusive gains from international financial integration", *Review of Economic Studies*, Vol. 73 No. 3, pp. 715 - 741.

Guerriero, M. and Sen, K. (2012), "What determines the share of labor in national income? A cross-country analysis", Discussion Paper No. 6643, Institute for the Study of Labor.

Guerriero, M. (2012), "The labor share of income around the world: evidence from a panel dataset", Working Paper No. 920, ADBI Working Paper Series.

Harrison, A.E. (2002), *Has globalization eroded labor's share? some cross-country evidence*, Mimeo, University of California Berkeley.

ILO. (2020), "ILOstat", available at http://ilostat.ilo.org (accessed April 05, 2020).

ILO, IMF, OECD, and WB. (2015), *Income inequality and labor income share in G20 countries: trends, impacts and causes*, Prepared for the G20 Labor and Employment Ministers Meeting and Joint Meeting with the G20 Finance Ministers, Ankara, Turkey.

Jayadev, A. (2007), "Capital account openness and the labor share of income", *Cambridge Journal of Economics Advance Access*, Vol. 31 No. 3, pp. 423 - 443.

Jayadev, A. and Lee, K. (2003), *Capital account liberalization, growth and the labor share of income: reviewing and extending the cross-country evidence*, Mimeo, University of Massachusetts, Amherst.

Krueger, A.B. (1999), "Measuring labor's share", *American Economic Review*, Vol. 89 No. 2, pp. 45 - 51.

Lane, P.R. and Milesi-Ferretti, G.M. (2006), "The external wealth of nations mark II: revised and extended estimates of foreign assets and liabilities, 1970 - 2004", IMF Working Papers No. 06/69, International Monetary Fund.

Le, A.T. (1999), "Empirical studies of self-employment", *Journal of Economic Surveys*, Vol. 13 No. 4, pp. 338 - 417.

McKinnon, R. (1973), *Money and capital in economic development*, The Brooking Institution.

Mezzetti, C. and Dinopoulos, E. (1991), "Domestic unionization and import competition", *Journal of International Economics*, Vol. 31 No. 1 - 2, pp. 79 - 100.

Munro, L. (2005), "A literature review on trade and informal labor markets in developing countries", Working Papers No. 132, OECD Trade Policy.

Orgiazzi, E. (2007), "Financial development and instability: the role of the labor share", *Research in Economics*, Vol. 62 No. 4, pp. 215 - 236.

Parker, S.C. (2004), *The economics of self-employment and entrepreneurship*, Cambridge University Press.

Shaw, E. (1973), *Financial deepening in economic activity*, Oxford University Press, New York.

Torres-Reyna, O. (2007), *Panel data analysis: fixed and random effects using Stata*, Princeton University.

Appendix

Table A.1. The list of countries

Country No.	Developing countries	Country No.	Developed Countries
1	Argentina	16	Australia
2	Brazil	17	Austria
3	Chile	18	Canada
4	China	19	Finland
5	Colombia	20	France
6	Costa Rica	21	Germany
7	Dominican Republic	22	Ireland
8	Hong Kong	23	Italy
9	Iran	24	Japan
10	Mexico	25	Netherlands
11	Paraguay	26	New Zealand
12	Philippines	27	Spain
13	Republic of Korea	28	Sweden
14	Singapore	29	United Kingdom
15	Thailand	30	United States