The relationship between capital flight, labor migration and economic growth

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Abstract

Capital flight and labor migration have been increasing in developing nation like Pakistan. This study is used to check the relationship between capital flight, labor migration and economic growth of Pakistan. Time series data is used from 1983-2014 for variables like unemployed labor, capital outflow, unemployment and political instability. Different techniques such as unit root test, granger causality test, ordinary least square and two stages least square are used. Granger causality test showed that capital flight and economic growth have bidirectional causality, while labor migration and economic growth showed unidirectional causality. Two stage least square showed that political instability, labor migration, capital flight and unemployment have the negative impact on the economic growth of Pakistan. Political and security situation should be improved for better economic growth.

Keywords: labor migration, capital flight, economic growth, two stage least square, political stability

Introduction

Labor and capital have great impact on the economic growth, because both are the factor of production. Labor is the effort related to human for production**.** People move to other countries in search of jobs, higher education or for better facilities of life (World Bank, 2015). The movement of money and assets from one country to another country is called capital flight. Capital flight from one nation to another nation might be legally or illegally (Hebous, 2014). 232 million peoples of Pakistan moved towards other nations in the year of 2014 and capital flight from Pakistan almost 25 million dollars every day towards other countries (World Bank, 2015; Dawn, 2013). In Pakistan capital outflow also play an important role because Pakistan is under developed country and they have no such other resources that fulfill the entire level of investment (Siddique and Kemal, 2001). People in big cities prefer to invest their money abroad. It is estimated that 265 people from Karachi, 182 people from Lahore, 106 people from Rawalpindi are investing their capital to developed countries which enhance the capital flight (Dawn, 2013). In the developing countries, labor and capital is moving towards developed countries day by day. Main reasons to move labor and capital are unemployment, climate change, corruption, political instability and terrorism (Economic survey of Pakistan, 2013). Due to unemployment highly skilled and educated people moved towards other nation and create the problem of brain drain (Fan and Stark, 2007). Migration of labor and capital both have badly impacts in a sense of social and cultural factors (Kaur *et al*, 2011). Brain drain leads to low per capita income continuously and this is due to the deficiency of human capital in the country (Munck, 2004). Pakistan has 6th position among world in the sense of low income group. Its 40% population lives below the poverty line (economic survey of Pakistan, 2013). Capital flow is better for developing nations if it is managed properly. Government is responsible for low investment especially in underdeveloped nations like Pakistan (Okoh and Ebi, 2013). Pakistan has both qualities about labor sending and labor receiving country (World development index, 2012).

Economic growth is affected by three factors such as governance, technological progress and population growth. Good governance means that complete control of corruption and political instability and the regulation of exact framework. Technological progress means that the use of advance technology. Normal population is benefitted for the economy. Population measured by age and the ratio of dependency. If the ratio of dependency is low, then economic growth, increased. (Hanushek, 2013). But it's beneficial until abundant capital and labor move if mismanagement, then it takes towards losses (Straetmans *et al.*, 2013). Pakistan is facing the problem of capital flight and labor migration therefore this study aims to check the casual relationship between capital flight, labor migration and economic growth. So policy recommendation should be given for better situation in term of economic growth.

Literature review

Various researcher paid serious attention towards labor migration, economic growth and capital flight. De has (2005) studied about the relationship between labor migration and economic growth. Labor migration totally depends on income. In Pakistan peoples having 15 to 24 years age mostly move toward other countries. Data was collected from PLM service and the federal bureau of service. Ordinary least squares were applied to check the relationship between two variables. But found a negative relationship between economic growth and labor migration. Nazir *et al.,* (2012) clarified that capital flight creates worsen impacts on the economic growth of Latin America. Data was taken from 1970 to 1980 for study. Data was collected from the World Bank. Income distribution was unfair due to capital flight, reduction of government fund, low level of income, high rate of interest but it also reduce the level of inflation rate. Regression line showed the positive relationship between capital flight and labor income share. Jotikasthira *et al.,* (2013) checks the relationship between foreign direct investment and economic development. The granger causality test was used in this model. This study shows that growth, cause through foreign direct investment. Data was collected through foreign direct investment. Johnston (2000) explained that labor migration and capital flow was not a new issue. It is the problem for many years. Skilled and unskilled labor was founded in developing nations such as Philippine and Egypt. Due to this labor moved across the border. In 1980s the developed nation of Eastern Europe forced their labor to migrate to another country. The labor force was increased in underdeveloped countries, but job opportunities were low. Age, gender and education were the main reason of unemployment. Stiglitz (2000) studied that economic growth and level of instability was measured through liberalization in market of capital. Variables used were unemployment, real wage and exchange rate. India and China were two nations that have full control of economic flow. According to researcher future planning was necessary because it prevents from different shocks. Reduction in poverty and stability was a most necessary factor. Data was collected from the World Bank. Shahbaz et *al.,* (2012) showed lots of hurdles created due to capital flow in developing nations. Gross domestic product, investment, saving and foreign debt were used as variables. There were push and pull factors that affect the growth. From 1977 to 1997, there was a great level of debt increment in developing nations. Panel data was used in this model and data source was World Bank and international monetary fund. Stewart (2012) discussed that poverty was reduced by remittances and migration. Remittances, inequality and poverty were used as variables. The data is taken from 71 developing countries. Data was collected through the World Bank. Migration and remittances both have a positive impact toward developing nations. Because both encourage the saving and investment that will lead to development. There was no specification that how much poverty was reduced when remittances and migration increased due to the low availability of data. Kahanec and Zimmermann(2010) discussed the factor that affects the migration among 14 countries. There was no clear factor obtained because

some study related to positive aspect and some was about negative point of view. But this paper was about positive point of view. Data was collected from international migration statistics. Push and pull factors, both were the effect of migration. And host country having a negative impact on migration. Push factor also having a negative impact and pull factors having a positive impact on the economic growth of developing countries. Emigration rate, wage, population and gross domestic product that was used as variables. Gravity model was used to trade flows. Traveling cost and wages among other country also impact. Davis *et al.,* (2009) described the role of capital flight in world economics. Capital flight was the major problem for every country. Capital flight, external debt, foreign direct investment, current account and foreign reserves were used to determine the capital flight. Data was collected from World Bank of different variables. Ordinary least squares was applied to check the direct effects between variables. Alper (2001) discussed about the economic problem in Nigerian due to capital flight. Economic growth in Nigerian decreased when capital flight increased. The error correction model was used in this study and data was collected from 1970 to 2009.Variables like capital flight, external debt, foreign direct investment, gross domestic product and total reserves were used. Ordinary least square and error correction model were used in this model to find out the relationship. External borrowing increases the starvation condition of Nigeria. Data was collected from central bank of Nigeria and federal office of statistics. Ali *et al.,* (2015) discussed about Human capital outflow is considered as important for developed and developing nation. But less develop country having no benefits. Pakistan was the most populous country in sense of unemployment and poverty, having 6th number among the whole world. Instability, regional disparities, corruption, and terrorism all evils were on the top. Due to these reason people move to high income countries also seems this condition in Ireland in 1974. Outflow increase the level of private investment. Brain drain was highly effected the developed nations. Human capital outflow was positively affected the inflation rate and the rate of unemployment. The Co - integration method is used to check the inflation and unemployment between the years of 1972-2012.Engel granger test was used to make the data stationary. Time series data were used which shows that economic misery increased due to human capital outflow, due to increase income inequality. Government should take action to depress the inflation and unemployment rate.

Methodology:
 This study is based on the time series data about labor migration, capital flight and economic growth of Pakistan. Capital flight and labor migration are major variable that influenced the economic growth. There are several reasons that decline the economic growth (Wellisz and Calvo, 1981).

Data sources and their range
Capital outflow data are taken from World Development Indicator. Labor migration data are taken from Bureau of Emigration and Overseas Employment. Data is about non skilled peoples. Political instability and terrorism data are taken from the center for systematic peace. Per capita income and unemployment data are taken from Economic survey of Pakistan.

Variables and their definitions
 Variables that used in this study are capital outflow, labor migration, gross domestic product, unemployment, political instability, terrorism, remittances and inflation.

Gross domestic product = α_0 + α_1 (capital outflow) + α_2 (unemployed labor) + α_3 (unemployment) + α_4 (political instability) + α_5 (terrorism) + α_6 (remittences) + u

The capital outflow = capital that has moved to outside of the country is called capital flight. It is also defined as the negative use of capital is called capital flight.

Unemployed labor = unemployed labor that has moved to outside of the country is called labor migration. They oved in order to learn a skill or for the job or for better opportunities of life.

GDP=gross domestic product of Pakistan. When the constant increment in output, then gross domestic product will increase. But where per capita income is used as the proxy variable of the gross domestic product.

Unemployment = those people who seeking jobs, but did not gain it called unemployment.

Terrorism = number of murder attacks that is done at one year. It may also include a number of miseries or number of murders.

Labor migration=labor movement in another country from Pakistan

First of all we check the Stationarity in each variable. Stationarity test is useful because it prevents the model of the unit root problem [Khan et al.2017; Nisa et al.2017]. There are two types of unit root test: Augmented dickey fuller test and Phillips- Peron test.

Research design

Labor migration, capital flight, and gross domestic product are three variables that influenced through one another. So Granger causality model is used to check causality in this model. It is an econometric technique that is used to check the causal relationship among variables. Granger causality checks that labor flight causes the gross domestic product or not. It also checks that capital flight causes the gross domestic product or not and also checks that gross domestic product causes the labor flight or capital flight. Professor Clive Granger proposed this model and obtained the Nobel Prize in 2003. Granger causality related to statistical approach and based on prediction. It is used for forecasting the future values base of past or previous values and observe about causation among different variables. This model is developed by 1960 and after some years it's too much popular. Mello (1997) used granger causality model in research. Granger causality is used to check how much foreign direct investment in gross domestic product. So it is used to check the impact on foreign direct investment to gross domestic product. Capital outflow is used as dependent as well as independent variable. So this equation is known as simultaneous equation model. If simultaneity problem exists then we apply two stage least square.

Two stages least squares are just like ordinary least squares. It used as a wider term of ordinary least squares. It is used when the high correlation is present in error term and endogenous variable. We add such variable that having strongly correlated with the error term. It is mostly used in a single equation method. In actual two stages least squares is the expansion of the indirect least squares and instrumental variable methods. Two stages least squares is used to remove the bias as possible of the simultaneity in the model. If any variable used as exogenous as well as endogenous, then error term are correlated to those variables so two stage least squares is used to remove the simultaneity in the model. And in instrumental variable are those who have strong correlation with the error term. So such variable is removed from the model or to solve it at different process.

Results

First of all we check stationary of all my variables. Some variables are stationary at level and some variables are at first difference. We make all the variables are stationary by transformation methods. We take log in excel of those variables those are not stationary at level. Then all the variables are stationary at level. Before we apply ordinary least squares we check the causality between labor migration, capital outflow and gross domestic product.

Table 1: Granger causality table

Null hypothesis	Obs	F statistics	Prob
GDP does not granger cause CAO	27	2.66	0.06
CAO does not granger cause GDP	27	7.69	0.00
UNL does not granger cause CAO	27	3.58	0.02
CAO does not granger cause UNL	27	1.69	0.19
UNL does not granger cause GDP	27	6.91	0.00
GDP does not granger cause UNL	27	1.31	0.30

Source: Author's calculation

Interpretations

Results of granger causality also displays that labor migration causes the GDP. It shows that if labor moved towards another nation, then GDP also affected in Pakistan (see table 1). Labor strongly affects the GDP. But GDP does not cause the Labor migration. If GDP change, then they do not lead to move labor to another country in Pakistan. They're also one sided causality exists. On the other hand capital outflow granger cause the gross domestic product and gross domestic product also granger cause the capital outflow. So there is the problem of two way causality. In or to solve this problem we applied Two stage least square model.

Two stage least square:

Per capita income = f (political instability, unemployment, capital outflow estimated, terrorism, labor migration, capital outflow)

Table 2: Two stage least square

Variables	Co-efficient	Standard error	T statistics	P>T
Political instability	-0.22	0.090	2.44	0.01
Unemployment	-1.103	0.260	4.23	0.00
Capital outflow_est	-19.24	8.27	2.34	0.012
Terrorism	-0.141	0.06	2.22	0.027
Labor migration	-0.19	0.06	3.16	0.04
Capital outflow	-19.11	8.99	2.12	0.02
Constant	1.644	0.65	2.49	0.00

Source: Author's calculation

Here log per capita income is the dependent variable and political instability, unemployment, capital outflow estimated, terrorism and labor migration are used as independent variables and shows significant results towards gross domestic product. But co-efficient values have the negative sign (see table 2). So increment in the value of independent variable decreases the value of dependent variable.

Conclusion

In the light of the above results unemployed labor causes the capital flight. If we control unemployment in countries then there is no need to labor to migrate towards others country. We developed some industries in our country. So that employment opportunities are increasing. And when the unemployment is increased in highly skilled and educated people then brain drain creates the serious problem towards any nation. So unemployment is a serious problem for the country of Pakistan. There are many reasons that enhance the unemployment. Government paid full attention to overcome the problem of unemployment. If labor stopped to migrate then capital flight also

decreases. If capital is not moving towards other nations, then they might be used for any development purpose. If capital is used for development purpose, then several problems can be solved. The gross domestic product is affected by the capital flight negatively. If capital flight increases, then it decreases the level of gross domestic product. Then this is the problem for any developing nations. So there is a need for special attention to control the capital flight in the country of Pakistan. There are also many other factors that affected the gross domestic product such as political instability and terrorism. And capital outflow has also increased due to the increment of political instability. So if we want to control the capital flight towards other nations, then we have paid more attention to control the political instability in Pakistan. Labor migration and capital flight both are connected to each other and affected the country capital, both are productive variables. So this is necessary to control these variables.

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