RESEARCH ARTICLE

EFFECTS OF GLOBALIZATION ON THE MANUFACTURING SECTOR OF GHANA

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ARTICLE INFO	ABSTRACT
	Interesting trends observed in the impact of globalization on certain sectors of an economy have attracted studies on the subject of globalization. This study centred on effects of globalization on the manufacturing sector of Ghana having used FDI as a proxy for globalization. The study employed the simple ordinary least squares (OLS) regression and the empirical analysis was conducted using data between 1985 and 2013. It was found that the independent variable 'MANGH' was significant to explain the dependent variable FDI whose influence was negative. This indicated that, there was a negative correlation between FDI and manufacturing in Ghana. The negative effect which emanated from trade, financial sector and exchange rate liberalization, is materialized through stiffer competition, increased cost of production, and loss of confidence by indigenous investors. The study recommended among others that the government of Ghana must revisit policies relating to FDI and trade liberalization in order to salvage the manufacturing sector.

INTRODUCTION

Globalization has integrated economic, social, cultural, and the academic lives of the world at large attracting to itself various sentiments and dispensations from the perspective of researchers. The continuous challenges facing developing economies (for instance Ghana) necessitated policies on trade liberalization through which globalization was realized in various economies. Foreign Direct Investment (FDI) and Trade Openness have been used as proxies for globalization in recent empirical studies especially when there is no known appropriate measure for the variable, globalization.FDI as defined by OECD is an investment that aims at gaining a substantial stake in the management and operation of an enterprise in an economy by obtaining, reducing or simply purchasing a "lasting interest" in the said enterprise (OECD, 1996). The presence of financial and political improvisation has given way to FDI in developing economies. In order to realize an increased FDI, countries have embarked on policies to lessen FDI restrictions, grant tax incentives, partner foreign firms in state-owned enterprises and a host of other FDI-promoting policies (Antwi *et al*., 2013). This has opened way for host countries to improvise their products in meeting international standards propelling them to enter established overseas markets aiming at improving the country's exports

(Cetin and Ackrill, 2006). Ghana's significant economic performance in recent times has resulted from the reciprocal action between it and other economies (Aryeetey *et al*, 2004) in the form of trade, loans, grants and investments. Ghana has gone through economic reforms especially in 1980 after the country experienced its worst economic downturn caused by hyperinflation (around 123%), political instability and drought. The manufacturing sector in Ghana responded to the structural adjustment program (aspect of the Economic Reform Program) in a relatively positive manner (especially smaller firms) in the 1980s even though larger firms within the sector were negatively hit by the program (Baah-Nuakoh and Teal, 1993). The sector is perceived to be underdeveloped considering high cost of production, high interest rate and intense competition resulting from the trade liberalization policy. Nevertheless, it is an essential contributor to the country's GDP having contributed an average of 6% between 2009 and 2013[1]. FDI in Ghana received a full backing when an act, Ghana Investment Promotion Centre (GIPC) Act of 1994 (Act 478) was enacted to lessen "obstacles" and prepare an enabling environment in the form of incentives for FDI. This act also introduced incentives such as; free repatriation of profit and dividend, customs' duties exemptions for selected machinery, "dispute settlement" procedures among others (Djokoto *et al*, 2012). In recent times, the manufacturing sector is deemed not to have received much FDI the reason been limited access to land,

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[1] Obtained from world bank data 'http://data.worldbank.org/indicator/NV.IND.MANF.ZS'; accessed on May 10, 2015

cumbersome processes in property registration and inadequate qualified labour (Aryeetey *et al*., 2010). In a related issue, past studies have indicated that, a fully-fledged advantage of FDI is still yet to be harnessed by Ghana. This resulted from deficiencies in policies relating to education and finance (Aryeetey *et al*., 2010). Recent developments within Ghana's economy relating to erratic power supply, intense competition, and devaluation of the country's currency have slowed down production of the manufacturing sector nonetheless, there are existing and emerging foreign firms within the sector. An investigation into the impact of FDI on the manufacturing sector of Ghana and its recommendations would guide policy makers with significant evidence in making informed decisions especially regarding FDI. This study would again help existing and emerging firms within the sector to react appropriately to the impacts of FDI, as well as grant the basis for further studies into the subject of FDI's impact on various sectors within economies of developing countries. Employing the simple ordinary least square (OLS) regression, this study therefore contributes to available literature by staging an investigation into the impact of globalization on the manufacturing sector of Ghana using FDI as a proxy for globalization.

Literature review

Past studies have provided mixed results relative to the impact of FDI on manufacturing sectors. From a historical perspective, Ackah *et al* (2014) observed in their scoping study on the evolution of industry in Ghana that, Ghana's manufacturing sector's weakened performance between 1985 and 1991 was caused among others by exchange rate and negative impact meted out by trade and financial sector liberalization. This study further stated that, the Economic Reforms Program (ERP) negatively affected the manufacturing subsector on the bases of stiffer competition from "manufactured imports" (negative impact of trade liberalization), increased cost of production resulting from a decline in the country's currency after exchange rate and financial sector liberalization. The study therefore argued that, trade liberalization has negatively impacted on manufacturing firms as a result of imports making the sector unable to attract investments. Unfortunately, the situation wasn't so prior to the reforms when the manufacturing subsector contributed substantially relative to the entire sectoral contribution to GDP. With their empirical study on 'the determinants and pro-development impacts of FDI in Ghana', Ayeetey *et al*. (2010) found that, Ghana's manufacturing sector has not received much FDI resulting from limited access to land, cumbersome process in property registration and inadequate qualified labour. The study surveyed 54 Multinational Enterprises (MNEs) operating in Ghana, used the World Banks's 2007 Enterprise Survey data and employed qualitative and quantitative methods including interview, the simple probit model and OLS regressions in their analysis. The study recommended in the end that, policies relating to FDI promotion must focus on manufacturing by promoting specific industries like agro-processing, light manufacturing, and food and beverages. Using same data, and investigating the characteristics and determinants of FDI in Ghana, Barthel *et al* (2011) employing the OLS regressions methodology also suggested that, Ghana is yet to receive a substantive "efficiency-seeking" FDI within the manufacturing and assembling sectors resulting from land accessibility, registration of property and availability of qualified labour. These sectors notwithstanding, have the ability to influence

positive growth in the long run. It was therefore recommended that, policies should aim at strengthening industry oriented education to meet labour demands and the removal of bottlenecks in property registration and land accessibility. Tsikata *et al*. (2010) studied the impact of China-Africa investment relations focusing on the case of Ghana. Following an in-depth interview framework, the study observed that, significant Chinese FDI in Ghana recently was found in the manufacturing sector, which was higher than that of 'general trade' with an average of $166.24million between 1995 and 2008. The study interviewed "key informants" including the Ghana Investment Promotion Centre (GIPC), the Association of Ghana Industries (AGI), the Ministry of Trade and Industry and the Ghana Central China Chamber of Commerce (GCCCC). The study concluded that the impact of Chinese FDI was positive reflecting in the reduction of "import dependency", "export expansion", improvement in "competitiveness of local industries" increased employment as well as improved "government revenue" through taxation.

It is argued that the impact of FDI can as well be realized through economic growth. This is why using simple Ordinary Least Squares (OLS) regressions, Antwi *et al* (2013) sought to research into the impact of FDI on economic growth with empirical evidence from Ghana. With a secondary data spanning from 1980 to 2010, the study concluded that independent variables which included manufacturing value added were significant to explain FDI since their "corresponding p-value of the t-statistic was less than 5%". This indicated that manufacturing volume of the manufacturing sector in Ghana influenced the flow of FDI in Ghana. Nonetheless, there was a negative coefficient (-2.56%) of manufacturing indicating that, there was a negative correlation between manufacturing and FDI.

From the West African sub region, a study on globalization and manufacturing sector was conducted with a specific focus on selected textile firms in Nigeria by Aluko *et al* (2004). Employing parametric and non-parametric statistics, the study found a significantly negative effect of globalization on "capacity utilization'' in Nigeria's manufacturing sector. In this study, questionnaires were administered to 750 employees of three selected textile firms while 10 customers and 15 shareholders each from the selected firms were interviewed. The study as well posited an adverse impact of globalization and trade liberalization on the "economic growth" and "sustainable development" in Nigeria. It was therefore recommended that a critical review of policies relating to globalization in Nigeria is key to salvage the manufacturing sector. Using a cross-country data which included Nigeria, Alfaro (2003) empirically examined the role of FDI inflows in promoting growth in the primary, manufacturing, and services sectors. The study obtained a secondary data from OECD's International Direct Investment Statistics Yearbook (2001) and from World Investment Report by UNCTAD (1993-2000). Employing the cross-section regressions methodology, the study found that the extent of influence that FDI had on the primary sector had a negative impact on economic growth unlike the manufacturing sector which was positive. That of the service sector was deemed 'ambiguous' on economic growth of the countries under review. Considering literature relating to the manufacturing sector and FDI from a developing country, Sönmez and Pamukçu (2012) investigated the influence of FDI in the Turkish Manufacturing Industry through technology spillovers. Using a firm level data (2003-

2006) the study found that number of foreign firms present in the manufacturing sector is low, nonetheless, they boast of about 25% of the sector's gross output. With a production function framework, the study concluded among others that, manufacturing firms that are mainly engaged in export activities are not beneficiaries of technology spillovers unlike their counterparts who focus on producing for the indigenous market. Elmas (2009), in 'the micro effects of FDI on the Turkish manufacturing industry' found that there was no correlation between FDI and market structure indicating that FDI has no known impact upon market concentration of firms using the concentration ratio. Obtaining data from Istanbul Chamber of Industry (1988 to 2006) the study as well found that FDI firms are more productive and very sensitive to economic conditions. Thus, they engage in export of their products during financial crisis in the host country but serve the indigenous market upon a stable condition. It was therefore concluded and countered the empirical results of "orthodox economics" which holds that FDI is of significant benefit to the host countries.

METHODOLOGY

The study sought to ascertain effects of globalization on the manufacturing sector of Ghana. This section presents the econometric method used in reaching the objective of the study. This study employed the simple ordinary least squares (OLS) regression and the empirical analysis was conducted using data between 1985 and 2013. In order to ascertain the relationship between variables (dependent and independent), and further determine the specific relationship (either positive or negative), several empirical studies have resorted to the use of the ordinary least squares (OLS) regression method[2]. Using this methodology, the ability of an independent variable to explain or influence the dependent variable is as well ascertained. Since a positive or negative relationship between FDI and manufacturing would help achieve the objective of this study, the ordinary least squares (OLS) regression method was employed.

Data

The data used for this study was obtained from World Bank's data on manufacturing, value added (% of GDP) and FDI net inflows (% of GDP) of Ghana from 1985 to 2013. The data set gives a dynamic indication of the behavior of the manufacturing sector and FDI inflow into Ghana at the time when trade liberalization and openness took centre stage in the policies of the government. The data used in relation to Foreign Direct Investment (FDI) is defined by the World Bank as "…the net inflows of investment relating to the quest to obtain a permanent stake (with about 10% or more voting right) in a firm or industry with operations in a foreign economy. It depicts the total of equity capital, reinvestment of earnings, other long-term capital, and short-term capital as presented by the country involved in their balance of payments. The series shows net inflows (new investment inflows less disinvestment) in the reporting economy from foreign investors, and is divided by GDP". Data on manufacturing value added was as well obtained from the World Bank's database. The World Bank defines manufacturing industries as ones "that belong to the International Standard Industrial Classification (ISIC) division

15-37". According to the Metadata relating to Manufacturing Value Added (% of GDP) in the World Bank's database, value added "is the net output of a sector after adding up all outputs and subtracting intermediate inputs. It is calculated without making deductions for depreciation of fabricated assets or depletion and degradation of natural resources. The origin of value added is determined by the International Standard Industrial Classification (ISIC), revision 3" (World Bank)[3].

Model specification and estimation

OLS framework

$$FDI_t = \alpha + \beta MAN_t + \varepsilon_t \quad (1)$$

Where:
FDI= Foreign Direct Investment (the dependent variable),
MAN =Manufacturing Value added (independent variable),
β= coefficient of the independent variable
ε = the error term
t= time period

Diagnostics testing

The study employs diagnostics testing to ascertain whether or not the series contain autocorrelation, heteroscedasticity and are normally distributed. To accomplish this, the 'Breusch-Godfrey Serial correlation LM Test', 'Breusch-Pegan Godfrey Test' and the 'Jarque-Bera Statistics' were respectively ran.

Hypothesis 1:
H0: There is no serial correlation in the residuals
H1: There is serial correlation in the residuals

Hypothesis 2:
H0: Residuals are homoscedastic
H1: Residuals are heteroscedastic

Hypothesis 3:
H0: Residuals are normally distributed
H1: Residuals are not normally distributed

For the above hypotheses (1,2,3), computed p-values greater than 0.05 significant levels indicates the acceptance of the null hypotheses (H0) and subsequent conclusion that, there exist no serial correlation in the residuals, residuals are homoscedastic and they are as well normally distributed. This would indicate a desirable regression model. However, computed p-values less than 0.05 significant levels would indicate the rejection of null hypotheses (H0) and acceptance of alternative hypotheses (H1) and subsequent conclusion that there is autocorrelation, heteroscedasticity, and an abnormal distribution or a normality problem.

EMPIRICAL RESULTS AND DISCUSSION

This study sought to ascertain the effects of globalization on the manufacturing sector of Ghana using Foreign Direct Investment (FDI) as a proxy. It is to determine if there is a positive or negative impact of FDI on the manufacturing sector of Ghana.

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[2] See Aryeetey *et al* 2010, Barthel *et al* 2011 and Antwi *et al* 2013.

[3] Obtained from world bank data '*http://data.worldbank.org/indicator/ NV.IND.MANF.ZS*'; accessed on May 10, 2015

In order to determine the correlation between FDI and manufacturing, the method of least squares is run. The result is presented in Table 1 below:

Table 1. Method of least squares

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	18.36005	2.165140	8.479845	0.0000
MANGH	-1.640683	0.228210	-7.189366	0.0000
R-squared	0.656868	Mean dependent var		2.983987
Adjusted R-squared	0.644160	S.D. dependent var		3.043959
S.E. of regression	1.815793	Akaike info criterion		4.097394
Sum squared resid	89.02185	Schwarz criterion		4.191690
Log likelihood	-57.41221	Hannan-Quinn criter.		4.126927
F-statistic	51.68698	Durbin-Watson stat		0.731450
Prob(F-statistic)	0.000000			

R-squared is deemed relatively considerate if it is closer 1 regarding the overall fit of estimated regression equation to the data in question. However, it is argued that for time series data, 50% may be considered a reasonable good fit. As presented in table 1 above, 65.68% change in the dependent variable has its explanation within the explanatory variable. Further, the remaining variation is contingent on factors other than the independent variable or residuals. Again, the model's validity is found in F-statistic. A division of total explained variation by total unexplained variation is what F-statistic measures. A high F-statistic is an indication of a better overall fit of the regression line through the data under review. From table 1 above, p-value (0.000) is less than 5% thus, it can be subsequently concluded that, the independent variable, 'MANGH' has the ability to give an explanation to or influence FDI. Putting the above in the framework (equation 1), the coefficient of the independent variable can be written as:

$$FDI_t = \alpha - 1.640683 MAN_t + \varepsilon_t. \quad (2)$$

An established negative correlation can be deduced from the above equation (2). This indicates therefore that, there is a negative correlation between FDI and manufacturing in Ghana meaning that, more direct investments flowing from partner countries of Ghana do not favour the manufacturing volume of Ghana. From the p-value of the t-test of the independent variable in Table 1 above, significance of the independent variable can be obtained. In order for the study to accept the significance of the independent variable, its p-value of the t-statistic must be less than 5%. It can therefore be concluded from the foregoing that, the independent variable 'MANGH' is significant in the quest to explain FDI after its corresponding p-value of the t-statistic (0.00) is less than 5%.

**Table 2. Breusch-Godfrey Serial Correlation LM Test**

F-statistic	1.690087	Prob. F(2,23)	0.2066
Obs*R-squared	3.587727	Prob. Chi-Square(2)	0.1663

Subject to hypothesis 1, the p-value (0.1663) of Obs*R-squared in table 2 above is higher than 5% (p>0.05) therefore, null hypothesis (H0) is accepted. This means that there is no serial correlation in the residuals which is desirable for a regression model.

Table 3. Heteroskedasticity Test: Breusch-Pagan-Godfrey

F-statistic	0.812488	Prob. F(2,25)	0.4551
Obs*R-squared	1.708897	Prob. Chi-Square(2)	0.4255
Scaled explained SS	2.346093	Prob. Chi-Square(2)	0.3094

Null hypothesis (H0) is not rejected in hypothesis 2 since the p-value (0.4255) of Obs*R-squared is more than 5%. This is an indication that residuals are homoscedastic which is desirable for a regression model.
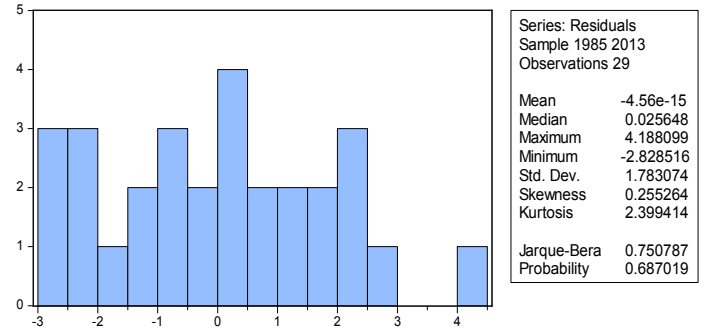
Figure 1. Jarque-Bera Residual Normality Test

The assumptions of best regression line are as well fulfilled in part after running Residual Normality Test. From Figure 1 above, Jarque-Bera statistic is 0.750787 with a corresponding p-value of 0.687019. The null hypothesis (H0) in hypothesis 3 above is accepted indicating that, the residual is normally distributed therefore desirable for a regression model.

Conclusion and Policy recommendation

This study sought to investigate the effects of globalization on the manufacturing sector of Ghana using FDI as a proxy. FDI has played diverse roles in the economy of Ghana relating to its impact on economic growth (Antwi *et al.*, 2013), GDP and a host of other contributions. The findings of this study suggest that, there is a negative correlation between FDI and manufacturing in Ghana. It can therefore be concluded that, FDI has a negative impact on the manufacturing sector in Ghana. It must be noted that, this study was limited to only the manufacturing sector of Ghana and FDI data that spanned from 1985 to 2013. These findings confirm the positions of Ackah *et al* (2014), Antwi *et al.* (2013) that the influence of FDI on Ghana's manufacturing sector is a negative one. Again, in line with the findings of Aluko *et al.* (2004), FDI may not be a perfect choice for the manufacturing sector of some West African countries. This in a way rejects the 'orthodox economics' (as mentioned by Elmas, 2009) which holds that FDI is of significant benefit to host countries. These negative impacts of FDI on manufacturing may be realized firstly in stiffer competitions from manufactured imports (Ackah *et al*, 2014). Trade liberalization promoted increased rate of imports into the country after its institution in the 1980s. Inasmuch as the country benefited in a way as it was able to embark on exports, the manufacturing sector was unable to stand the competition especially from manufactured imports and that of foreign companies that set up production plants within the country. Secondly, an increased cost of production on the part of the manufacturing sector (as put forward by Ackah *et al* 2014) resulted from the financial sector and exchange rate liberalization which weakened the country's currency. This is a current phenomenon in Ghana which is facing a dwindling

currency partly caused by an increase in import spelling doom for the manufacturing sector. Again, contrary to higher Chinese FDI in Ghana as suggested by Tsikata *et al.* (2010), the overwhelming influx of Chinese products has sustained in collapsing most manufacturing companies in the country. Further, Chinese manufacturing companies have gained the upper hand in competition pushing the indigenous firms out of business. *So, is the FDI from a country like China on the mission to collapse the manufacturing sector even having made significant impact?* To this end, indigenous investors lose confidence in the sector and find it difficult to establish manufacturing businesses while emerging firms run into bankruptcy resulting from stiffer competition and higher production cost.

These findings attract essential policy implication where the government of Ghana must revisit policies relating to FDI and trade liberalization. Without discrediting the impact of FDI on the economic growth of the country and on other sectors of the country, the manufacturing sector would not see 'light at the end of the tunnel' with the current policies relating to FDI. In order to limit the extreme competition faced by the manufacturing sector, government must embark on restrictive measures aimed at limiting the inflow of manufactured goods especially ones that can be locally manufactured. The habit of using made-in-Ghana goods must be encouraged by government. Again, government must strengthen existing and emerging manufacturing firms through easy access to credit, tax incentives, and less cumbersome company registration processes. This would position these firms to withstand 'fair' competitions from imports or foreign firms. As a matter of urgency, the dwindling value of the local currency (which causes increased cost of production for manufacturing firms) must be arrested with policies by government. This would ensure a reduced production cost reflecting on increased profit and return on shareholders' equity. The current situation of erratic power supply must as well be tackled by the government of Ghana in order to revive the dying manufacturing companies which would improve the manufacturing sector directly impacting on sustainable development and economic growth. Having used FDI as a proxy for globalization, this study has provided basis for further studies and it is therefore suggested that researchers can focus on other proxies like trade openness and financial sector liberalization as well as different sectors within the Ghanaian or a developing country's economy.

REFERENCES

Abdulai, I., 2005. Sectoral analysis of foreign direct investment in Ghana. *Bank of Ghana Working Series*.

Ackah, C. and Aryeetey, E., 2012. Globalization, trade and poverty in Ghana. *IDRC*.

Ackah, C., Adjasi, C. and Turkson, F., 2014. Scoping study on the evolution of industry in Ghana. *WIDER Working Paper* No. 2014/075.

Alfaro, L., 2003. Foreign direct investment and growth: Does the sector matter. *Harvard Business School*, 1-31.

Aluko, M.A.O., Akinola, G.O. and Fatokun, S., 2004. Globalization and the manufacturing sector: A study of selected textile firms in Nigeria. *Journal of Social sciences*, 9(2):119-130.

Antwi, S., Mills, E.F.E.A., Mills, G.A. and Zhao, X., 2013. Impact of foreign direct investment on economic growth: Empirical evidence from Ghana. *International Journal of Academic Research in Accounting, Finance and Management Sciences*, 3(1):18-25.

Aryeetey, C., Barthel, F., Busse, M., Loehr, C. and Osei, R., 2008. Empirical study on the determinants and pro-development impacts of foreign direct investment in Ghana. *Study on behalf of the German Ministry for Economic Cooperation and Development and the German Technical Cooperation(GTZ),* GTZ Working Paper.

Aryeetey, E., Osei, T.A.A.B., Twerefou, D., Laryea, A., Baah-Boateng, W., Turkson, E. and Codjoe, E., 2001. Globalization, Employment and Poverty in Ghana. *Growth*, 2002, 2003.

Aslanoğlu, E. 2000. Spillover effects of foreign direct investments on Turkish manufacturing industry. *Journal of International Development*, *12*(8):1111-1130.

Baah-Nuakoh, A. and Teal, F., 1993. Economic Reform and the Manufacturing Sector in Ghana. *Africa Regional Program on Enterprise Development. Technical Department, Africa Region.* Washington, DC: World Bank.

Barthel, F., Busse, M. and Osei, R., 2011. The characteristics and determinants of FDI in Ghana. *The European Journal of Development Research.* 23(3):389-408.

Cetin, R. and Ackrill, R., 2006. Foreign investment and the export behaviour of foreign and local firms: an analysis of Turkish manufacturing.*Discussion Papers In Applied Economics And Policy, Nottingham Trent University,* No. 2006/2.

Djokoto, J. G.&Dzeha, G. C., 2012. Determinants and Effects of Foreign Direct Investment in Ghana–Review of Literature. *Developing Country Studies*, 2(11/12):25-35.

Elmas, F. 2009. The Micro Effects of the Foreign Direct Investment in the Turkish Manufacturing Industries. *Journal of Money, Investment and Banking.* Issue 11:79-89.

Fatima, S.T., 2016. Productivity spillovers from foreign direct investment: evidence from Turkish micro-level data. *The Journal of International Trade & Economic Development*, 25(3):291-324.

Fillat, C. and Woerz, J., 2011. Good or bad? The influence of FDI on productivity growth. An industry-level analysis. *The Journal of International Trade & Economic Development.* 20(3):293-328.

OECD (1996). OECD Benchmark Definition of Foreign Direct Investment: 3rd edn. Paris.

Sönmez, A. and Pamukçu, M.T., 2013. Foreign direct investment and technology spillovers in the Turkish manufacturing industry. In *Industrial Dynamics, Innovation Policy, and Economic Growth through Technological Advancements*. IGI Global. 30-51

Srour, I., Taymaz, E. and Vivarelli, M., 2014. Globalization, Technology and Skills: Evidence from Turkish Longitudinal Microdata (No. 1405). *ERC-Economic Research Center*, Middle East Technical University.

Tsikata, D., Fenny, A. P.&Aryeetey, E. 2010. Impact of China Africa Investment Relations: An In-depth Analysis of the Case of Ghana. *Institute of Statistical, Social and Economic Research*. University of Ghana.

Tybout, J.R., 2000. Manufacturing firms in developing countries: How well do they do, and why?. *Journal of Economic literature*, *38*(1):11-44.

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