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Economics

Subsidiary firms and its impact on labor productivity in manufacturing sector of Pakistan (A panel data analysis)

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Abstract

Multinational enterprises (MNEs) plays a key role in the extension of many developing economies. We analyze how labor productivity in domestic firms in three manufacturing sectors of Pakistan are impacted from the technology spillover from MNEs. Multinational firms play a vital role in global economy, correlating rich and poor economies, diffusing capital and knowledge across borders. Their collaborations with individuals and organization is generating progressive spillovers in the host economy.For this purpose, the study use data of FDI, capital intensity, economies of scale, wage rate and labor productivity from 2012-2019 while utilized panel data econometric methods such as pooled OLS, fixed effect and random effect to examine the subject relationship. The results reveal that economies of scale, FDI and capital intensity increases labor productivity in manufacturing sector of Pakistan. The impact of wage rate though is positive but insignificant. The findings of the study can help practitioners and academician to which factors can increase labor productivity in manufacturing of Pakistan and which don't.

Keywords: Subsidiary firms,labor productivity, manufacturing sector, multinational enterprises, foreign direct investment (FDI).

1. Introduction:

Multinational entities play significant role in promoting manufacturing sector of the economy which in turn has a role in the overall economic development

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through multiplier effect. The extension of the manufacturing sector goes side by side with the GDP growth. Certain characteristics of manufacturing sector confirm this association such as it is characterized as increasing return to scale, it provides jobs to larger part of the labor force, it constitutes about 60 percent of the total exports among others (Anguelov, 2014; Dunning, & Lundan, 2008). This describes why several countries, mainly especially developing and emerging economies, often have certain inducements to attract multinational companies. The expectation is that MNEs will bring advanced technology to the country, and that the technology will trickle over to the domestic firms (Buckley et al. 2010). But technology spillover has been mainlyendorsed by data from developed countries, instead than developing or emerging countries (Meyer and Sinani 2009). The empirical conclusions from developing countries have been mostly inconsequential or negative (Damijan et al. 2013). The explanation for the irrelevant result has been identified as the incapacity of practical studies to test the channels of spillover, rather than treating spillover as a black box (Ben Hamida 2011; Orlic et al. 2018). Another purposefound in empirical studies that affects technology spillover is the nature of the domestic firms' absorptive capacity (Blalock and Simon 2009; Ha and Giroud 2015). Absorptive capability is described as the capacity of national firms to utilize knowledge obtained from MNEs and expand their application of spillovers (Meyer and Sinani 2009; Narula and Marin 2003). Restrictedanalyzes have controlled for the heterogeneity of domestic firms' absorptive capability (Mebratie and Bergeijk 2013).

The presence of multinational firms has a strong influence on the host countries from differentaspects such as investment, efficiency, capital, labor, effect on prices and wages. A plethora of literature exist highlighted the narrative that how FDI influence the market concentration.Some studies document that FDI has positive effect on market concentration while others are of the view that market concentration is negatively affected by FDI (Blonigen et al. 2003; Akbar, & McBride, 2004; Brakman, & Garretsen, 2008; Braconier, et al. 2005; Pitelis, & Teece, 2010; Brakman, & Garretsen, 2008; Markusen, & Maskus, 2002)that existence of foreign investment lessen the market concentration and rise the competition in the host country. On the other hand some are of the view that foreign investment rise the concentration in developing economies while in developed economies it

diminish the concentrationMNEs speed up the concentration in the developing economies because of the MNEs attain the modern technology, firm's specific advantages, and the use of predatory price conduct and mode of entry (green field investment).

Manufacturing sector performance is influenced by many factors where FDI is one of them (Blomstrom, 1986) which in turn is flows to sectors having bright prospective of handsome profit. A number of studies exist, to name a few includes (Alam, 2008; Vu, Gangnes, & Noy, 2008) who investigated the role of FDI on manufacturing sectors of Vietnam, Turkey and Russia for the economic development. According to them FDI plays significant role in increasing labor productivity through technology transfer, research and development effect which leads to innovation. Evidence shows that automobile, textile and other sectors have increased businesses not only because of internal efficiency of businesses due to which they attract the FDI, but also because of the share of these sector in international market. This all helps in labor productivity which influence the economic performance. It is also been observed that the FDI mostly comes in the subsidiary firms and they have role in the economic growth of a country (Helpman, 2006). Similarly, economies of scale help organization in reducing their cost, an opportunity for an organization to update a system that helps them to increase labor productivity. By having more automated system, or highly innovation-based system helps organizations to reduce their cost where this saving can be utilized for labor training which ultimately can increase the performance of an organization (Appelbaum et al. 2000). Literature suggest that as subsidiary firm adopt technology from their parent firms, so it's easy for them to achieve economies of scale and utilize it on other effective ways to increase performance (Fang et al. 2010; Kastalli, & Van Looy, 2013; Park, & Ghauri, 2011).

The capital invested by the business have very important role in drive of firm. Money is considering as a blood of business. As large capital intensity helps businesses to invest in innovation, research and development, employee training, providing them career development programs (Noe, & Kodwani, 2018; Nemet, & Kammen, 2007; Teixeira, & Tavares-Lehmann, 2014). Manufacturing industry in Pakistan have very formal and professional system. They hire skilled employees, train them, provide them carrier path and then get return of their investment in form of increased labor

productivity. Labor productivity helps businesses in getting efficiency and also it can be competitive advantage upon customers. According to Raymond et al,(2014) competitive advantage by the businesses achieved on the basis of resource utilization and managerial skills.

Based on the aforementioned background, the aim of this study is to investigate the impact of foreign direct investment on the performance of the local manufacturing firms. More specifically, whether manufacturing sector of Pakistan is influenced positively or negatively by the subsidiary firms. For this purpose, a panel data analysis is carried out in this study from 2012 to 2019 for three manufacturing sectors of Pakistan i.e. automobiles, textile, and electrical instrument. Results indicate that the effect of subsidiary firms on manufacturing sector is positive.

The rest of the study is organized as follows. Insights from literature are discussed in section 2. Section 3 discusses the detail methodology of the study while results interpretation and discussion are carried out in section 4. Lastly section 5 concludes the study and provide some policy implications.

2. Literature Review

It is well established that technological spill over has serious implications for the economy as a whole and particularly for firms and that productivity of domestic firms in Pakistani is very low. But the literature on the issue is scant in Pakistan. Conflicting evidence can be found on the impact of technological spill over on efficiency of nationalcompanies (Damijan et al. 2003).Most of the studies utilize fixed effect and random effect panel data methods (Olayinka & Loykulnanta, 2019), other used primary data methods to test the hypothesis whether foreign-owned subsidiaries attracting investment into Sweden or not (Holm et al. 2003) and fined that foreign-owned subsidiary is positively impacted by the dynamics of the host-country business environment and play a fundamental role in attracting investment in the host economy. Jude (2016) split the impacts of the distinctnetworks on the efficiency of the local firms and discovered that competition along with demonstration don’t have substantialinfluence on the output of the domestic firms. In contrast employee mobility was unearthed to boostyield of the local firms in Romania.These evidences suggest that different channels of technology spill over is important. Asheghian (2016) analysedthe

comparative efficiencies of Iranian firms and Iranian-American joint venture (IAJV) firms for the period 1971 to 1976 by using inter firm comparison of 11 matched firms. Labour productivity, capital productivity and total factor productivity are used as variables and find that Iranian-American joint venture (IAJV) firms are more productive than Iranian local firms. Nozuko (2016) conducted the study to investigate the effect of the FDI on labour productivity in industrial sector of South Africa from 1995-2013.The outcomes of Johansen co-integration revealed a long run connection between the FDI and labour productivity. Rehman (2016) carried out an empirical analysis using time series data of Pakistan from 1970-2012.The results of VECM showed the positive relation between FDI and labor productivity. Sarfraz (2017) analysed the short run and long run causality between the FDI, labor productivity and education in Pakistan using time series data from 1971-2016 and established that the FDI inflows leads to surge in labor productivity. Three separate channels of technology spill over are examined by Orlic et al. (2018) while using data panel data from 2002 to 2010 where the conclusionsprovision that worker movement is the strongest channel of technology spill over while demonstration effect and competition effect had anadverseinfluence on the yield of the domestic firms.

3.Methodology and Data:

The aim of this paper is to investigate the impact of manufacturing sector on labor productivity in Pakistan over a period of 8 years (2012-2019). The analysis is based on three manufacturing sectors i.e. automobiles, textile, and electrical instrument, while data is extracted from four available sources including data from balanced sheet analysis of joint stock companies of Karachi stock exchange issued by state bank of Pakistan (SBP), Pakistan Economic survey, Board of investment Pakistan and data for FDI collected from world development indicator (WDI). Labor productivity is used as a dependent variable in this study which is supposed to be influenced by inflows of FDI, economies of scale, wage rateas well as capital intensity.

In order to highlight the importance of manufacturing sector on labor productivity, this study utilized the panel econometric methods. The model is based on the work done by (Blomstrome, 1988; Cohen, 1973;Radhu 1973). The study modelled labor productivity as a direct function of FDI inflows,

economies of scale, wage rate, capital intensity and manufacturing sector dummies.

$$LP_{i,t} = \alpha_{i,t} + \gamma_1 FDI_{i,t} + \gamma_2 Escale_{i,t} + \gamma_3 cint_{i,t} + \gamma_4 wrate_{i,t} + \gamma_5 D1\_AM_{i,t} + \gamma_6 D2\_EI_{i,t} + \mu_{i,t} + \varepsilon_{i,t} \quad (1)$$

Where$LP_{i,t}$, $FDI_{i,t}, Escale_{i,t}, cint_{i,t}$, $wrate_{i,t}$is as usual labor productivity, foreign direct investment inflows, economies of scale, wage rate, capital intensityrespectively. Similarly,$D1\_AM_{i,t} = 1$ if the observation belongs to cross-section 2 i.e.automobile and 0 otherwise,$D2\_EI_{i,t} = 1$ if the observation belongs to cross-section 3 i.e. electrical instrument and 0 otherwise. Since we have three cross-sections, we incorporate only two dummies so that to avoid dummy variable trap (Gujarati, 2003). We did not use the dummy for textile sector and treat it as comparison sector.

The general format of the model is specified as follows:

$$y_{it} = \alpha_{it} + \beta_{it} x_{it} + \mu_{it} \quad (2)$$

Where $i = 1, 2, \ldots\ldots\ldots\ldots\ldots\ldots\ldots 3$ which is the total number of manufacturing sectors covered in the study and $t = 1, 2, 3, 4 \ldots\ldots\ldots T$ represent the time index while μ_{it} is the random disturbance term having 0 mean.

Certain assumptions are made to make estimable the μ_{it} (as it is not estimable with $N = n \times T$) such as the assumption of parameter homogeneity i.e. $\gamma_{it} = \gamma$ for all i, t and $\alpha_{it} = \alpha$ for all i, t.

Two types of heterogeneity are captured by the error term in equation (3). The first one is the individual heterogeneity (which is the heterogeneous nature of manufacturing sectors in our case) which is also known as the cross-section effect while the second one is the time effect. In case of individual heterogeneity, the model is named as the unobserved effects and is expressed as follows:

$$y_{it} = \alpha + \beta x_{it} + \mu_i + \varepsilon_{it} \quad (3)$$

In order to capture both the time effect and cross section effect equation (3) is rewritten as follows =:

$$y_{it} = \alpha + \beta x_{it} + \mu_i + \tau_t + \varepsilon_{it} \quad (4)$$

Where $\mu_i$the cross-section is effect and τ_t is the time effect? Which method is appropriate to estimate the above models depends on the properties

of the error components ($\mu_i and\ \varepsilon_{it}$). The second component of the error term i.e.ε_{it} is assumed to be independent of the regressors x_{it} as well as of the second component of the error term i.e. μ_i. In contrast the error component μ_i may or may not be related with the regressorsx_{it}. In case μ_i is correlated with the regressors, the OLS estimators would no longer be consistent. In order to obtained consistent estimates of parameters (β), μ_i is handled as a further set of n parameters to be estimated. This fixed effect model is then estimated via OLS by utilizing transformed (using demeaning) data. In contrast when μ_i is uncorrelated with the regressors, the random effect model is generated in which case the combined ($\mu_i + \varepsilon_{it}$) error is also uncorrelated with x_{it} and as a result the OLS estimator is consistent. The (Hausman, 1978) specification test is used to choose between the two (fixed effect and random effect) models. The Hausman-test, test the null hypothesis of no significant difference between two estimators. The random effects estimator will be chosen if the null hypothesis is accepted and vice versa.

4. Results and Discussions

4.1:*Descriptive Analysis*:

In order to check for the multicollinearity problem, the correlation matrix is computed for all the variables under consideration and is given in table 1. There is no evidence of high multicollinearity problems. The data analyst says that if r≥0.95 then collinearity is problematic. Since the r value for none of the below-mentioned pair of variables is greater than 0.95, so our interpretation of the relationship is correct.

Table 1: Matrix of correlations:

Variables	(1)	(2)	(3)	(4)	(5)
(1) lprod	1.00				
(2) fdi	0.37	1.00			
(3) escale	0.916	0.531	1.000		
(4) wrate	0.638	0.393	0.837	1.000	
(5) cint	0.624	0.163	0.705	0.666	1.000

The results of descriptive statistics including the mean, standard deviation, minimum, maximum, skewness, kurtosis and Jarque-Bera for each variable is provided in table 2. Results show that four out of five variables are negatively

skewed i.e. more of the observations lying to the left of the mean value of the series while one variable is positively skewed. Kurtosis tells us about the peakness of the data. All the variables are platykurtic. Similarly, for some of the variables, the Jarque-Bera test is significant which means the particular series is not normally distributed while some of the series are normally distributed.

Table 2: Descriptive Statistics

Variable	Obs	Mean	Std. Dev.	Min	Max	Skewness	Kurtosis	Jarque_Bera
lprod	180	.514	.306	.008	.985	-0.194517	1.634651	4.86449**
FDI	180	.561	.315	.008	1	-0.066951	1.822192	10.36307*
escale	180	.532	.237	.126	.952	-0.042850	1.743270	1.70203
wrate	180	.384	.29	.079	.917	0.725448	2.051185	2.16443
cint	180	.75	.09	.451	.89	-0.602246	2.557774	2.1419***

Regression Analysis:

4.2:Pooled model:

The pooled model is a regression model in which model parameters is estimated by using OLS and it assumes all the β's equalmeaning no difference in all the firms. So, because of this in pooled model all the firms have same intercept and slope.The result of pooled model and its comparison with fixed effect model are provided in table 3.

The parameter values from pooled OLS shows that all variables are statistically significant and have correct theoretical signs because the probability value is less than 1% significance level. It could be seen from tables 3 that economies of scale, wage rate and FDI have a significant relationship with the labor productivity.

However, the main problem of pooled model is that it considers that all the firms have same labor productivity which is not possible in real because all the firms which have different capital, different wages, different FDI and economies of scale. These differences are called heterogeneity where fixed effect and random effect models control these heterogeneities.

The fixed model assumes that individual effect of firm's heterogeneity and predictor variables are correlated. The fixed effect models were measured by using Least squares dummy variable (LSDV) approach.

It can be analyzed that by controlling the heterogeneity effect, coefficients of the estimates were different from the pooled model coefficients as provided in last column of table 3.This time FDI, economies of scale and capital intensity have statistically significant relationship with labor productivity. However, wage rate in fixed effect model is not statically associated with labor productivity.

Wald test is used to validate whether heterogeneity exists among the firms or not (Akbar et al. 2011). The null hypothesis for the Wald test is that pooled model is valid against the alternative that fixed effect model is better. Since the probability value of F-stat is less than 0.05 which means that our null hypothesis is rejected. So, the fixed effect model is better than pooled model. Results of dummy variables indicate that labor productivity in automobile and electrical instrument sector is lower than the textile sector.

Table 3: Regression results of pooled and fixed effect

Dependent variable (labor productivity)	Pooled OLS	Fixed effect
FDI	0.267 (0.01)	0.277 (0.06)
Wage rate	-0.046 (0.32)	0.042 (0.30)
Economies of scale	0.436 (0.01)	0.023 (0.93)
Capital intensity	0.244 (3.48)	0.280 (0.01)
D1_AM	-1.467 (0.027)	-1.98 (0.036)
D2_EI	-2.08 (0.018)	-3.12 (0.007)
Intercept	4.32 (0.042)	5.097 (0.12)
R-squared	0.904	0.9454
Waldtest	F(8, 41) = 3.83, Probability = 0.0019	

The random effect model assumes that the heterogeneity effect of the firms and the independent variables are not correlated. These are unobserved effect and so is captured by the error term “μ”. The results of random effect model are given in table 4 and is compared again with the pooled OLS results in the same table.It is important to discuss sigma_μ and sigma_e in the output of REM. The sigma_e is usual error terms while the heterogeneity effect iscaptured insigma_μ. If the value of sigma_μ is zero then it would mean that no heterogeneity exists and which means existence of pooled model. The rho represents the total combined error which is 42.15%.

The random effect model and pooled model was compared by using Breusch-Pagan LM test (Akbar et al. 2011). The results of test is given in table 4. The pooled model is supposed to be as null hypothesis and REM as alternative hypothesis.The result indicates a probability value less than 0.05, so null hypothesis is rejected. In result, it concludes that the random effect model is better than pooled model. The next step is to select one model out of the fixed and random effect model. For this purpose, we use the Hausman test.

Table 4: Regression results of pooled and random effect

Dependent variable (labor productivity)	Pooled OLS	random effect
FDI	0.26707 (0.086)	0.259 (0.066)
Wage rate	-0.046(0.325)	-0.049(0.208)
Economies of scale	0.436(0.01)	0.360(0.052)
Capital intensity	0.244(0.001)	0.282(0.001)
D1_AM	-2.617 (0.01)	-3.12 (0.034)
D2_EI	-3.10 (0.061)	-2.34 (0.016)
Intercept	5.21 (0.012)	4.79 (0.013)
R-squared	0.9046	0.9036
Breusch-Pagan LM test	χ^2 = 9.04, Probability = 0.0013	
sigma_u	0.147	
sigma_e	0.172	
Rho	0.421 (fraction of variance due to u_i)	

The Hausman effect measures whether the correlation between predictor and individual effects is significant or not. The analysis in Hausman test is based on measuring the difference of coefficients calculated in the random and fixed effect model. The null hypothesis of Hausman test is that there is no correlation between error term and the explanatory variables i.e. random effect model is better against the alternative that the error term and explanatory variables are correlated i.e. fixed effect model is better.

The important feature of Hausman test is that if the null hypothesis is accepted, thenthe choice of the researcher is to use either FEM or REM because this test is run on the difference of coefficients. Both can be used because bothgives the same results. Whereas REM has more consistent and efficient results as compare to FEM (Akbar et al. 2011). If the alternative

hypothesis accepted than it means that estimated coefficients have significant differences.

Table 5: Choosing between random and fixed effect model: The Hausman test

Dependent variable (labor productivity)	Fixed effect	random effect
Economies of scale	0.023 (0.935)	0.360 (0.052)
FDI	0.277 (0.067)	0.259 (0.066)
Capital intensity	0.280 (0.01)	0.282 (0.001)
Wage rate	0.042 (0.304)	0.049 (0.208)
D1_AM	−0.523 (0.009)	−0.438 (0.036)
D2_EI	−0.021 (0.248)	−0.589 (0.001)
Intercept	4.62 (<0.001)	3.43 (<0.001)
R-squared	0.8852	0.9036
Hausman test	χ^2 = 2.83, Probability = 0.5867	
sigma_u	0.279	0.147
sigma_e	0.172	0.17274
Rho	0.724	0.42151485

4.3:Results of Hausman test:

The result of Hausman test shows the acceptance of random effect model because of Probability value of chi-square is greater than 0.05. As a result, we accept the random effect model. The R-square of the random effect model is 0.9036 or 90.36% which shows the total variance in labor productivity explained by the economies of scale, FDI, wage rate and capital. Our first hypothesis states “There is significant influence of economies of scale on manufacturing sector labor productivity”. The results revealed that 1% increase in economies of scale increase labor productivity by 36.02%. This relationship is significant because p-value is less than 0.05. It means that manufacturing businesses were producing goods in bulk and achieving economies of scale.Second hypothesis of this study states“There is relational ship between FDI and manufacturing sector labor productivity” The results shows that a 1% increase in FDI increases labor productivity by 25.98% which is statistically significantat 10% because p-value is less than 0.10. It shows that foreign direct investment in different manufacturing businesses

also have an increasing significant effect on the labor productivity. Third hypothesis of the study states “There is positive impact of capital intensity on manufacturing sector labor productivity”. The coefficient value of capital indicates that that a 1% increase in capital, increases labor productivity by 28.23. The p-value is less than 0.01 showing the significance of the relationship. Last hypothesis of the study states “There is positive influence of wage rate on manufacturing sector labor productivity”.However, this hypothesis is not validated from the study results as the relationship between the two is not significantly significant.

5. Conclusion

The aim of this study is to analyze the relationship between subsidiary firm and its impact on economy of the host economy in manufacturing sectors. To achieve this purpose, the role of subsidiary firms was analyzed in the manufacturing sector by using labor productivity. The labor productivity is predicted by different variables which includes economies of scale, wage rate, capital intensity and foreign direct investment.

The results revealed that the FDI in the country on manufacturing sector has positive effect on the performance of subsidiary firms which in turn has the role of economic stability in the country. The FDI helps to uplift the concerned sector because it facilitates the firms to adopt innovation, spent amount on the labor training to specialize them in their respective fields. By having specialized skilled labor, it ultimately boosts the labor productivity and firm performance. The role of capital intensity of the subsidiary firm is also similar with the effect of the FDI. It also increases the resources of the firm which helps it out to invest on the supporting fields so that labor productivity increases. So, when firms have investment or high capital, they can pay profit to their shareholders which depends upon profits. Just in case of preference shareholders they have to pay profit. To other shareholders they can pay share instead of cash. So capital intensity helps the subsidiary firms in terms of profit. High profit means more interest of businessman in the concerned manufacturing sectors. It will increase the FDI and capital intensity in the concerned manufacturing industry. All these business activities have effect on the economic stability of the country. The role of economies of scale also have positive influence on the subsidiary firm

performance but reducing fixed cost by producing products in bulk due to innovative system at low cost.

This study has implications for the practitioners by providing them information regarding the most recent time span. It will help them to make policies to attract the FDI in the manufacturing sector that will increase production, which will count as GDP and ultimately enhance the economic stability. This study also has implications for the academics. It provides them platform to further investigate the role of subsidiary firms in the economic growth of the country.

References

Adam, R. and Khalifah, N. (2009), "Foreign presence and market concentration in Malaysian manufacturing industries; a simultaneity test" (PERKEM) vol. IV, pp. 413 -432.

Ahmad, N., Hayat, M. F., Luqman, M., & Ullah, S. (2012). The causal links between foreign direct investment and economic growth in Pakistan. *European Journal of Business and Economics*, *6*.

Alvarez, R., & Görg, H. (2009). Multinationals and plant exit: Evidence from Chile. *International Review of Economics & Finance*, *18*(1), 45-51.

Amess, K. and Roberts, B. (2005), "The Impact of Foreign and State Ownership on post-Transition industrial concentration: The Case of polish Manufacturing", Economic change, vol. 38, pp. 211-225.

Anguelov, N. (2014). Does the Presence of Multinational Corporations Affect a Country's Gross Domestic Product? *Global Economy Journal*, *14*(1), 11-30.

Anwar, S. and Sun, S. (2012), "FDI and market entry /exit evidence from china Journal of ASIAN economics" vol.23, pp. 487-498.

Akbar, Y. H., & McBride, J. B. (2004). Multinational enterprise strategy, foreign direct investment and economic development: the case of the Hungarian banking industry. *Journal of World Business*, *39*(1), 89-105.

Asheghian, P. (1982). Comparative efficiencies of foreign firms and local firms in Iran. *Journal of International Business Studies*, *13*(3), 113-120.

Akbar, A., Imdadullah, M., Ullah, M. A., & Aslam, M. (2011). Determinants of Economic Growth in Asian Countries: A Panel Data Perspective. *Pakistan Journal of Social Sciences (PJSS)*, *31*(1).

Brakman, S., & Garretsen, H. (Eds.). (2008). *Foreign direct investment and the multinational enterprise*. Mit Press.

Backer, K. and Sleuwaegen, L. (2003), "Does Foreign Direct Investment Crowd Out Domestic Entrepreneurship?", Review of industrial organization, vol. 22, pp. 67-84.

Blonigen, B. A., Davies, R. B., & Head, K. (2003). Estimating the knowledge-capital model of the multinational enterprise: Comment. *American Economic Review*, *93*(3), 980-994.

Barrios, S. Gorg, H. and Strobl, E. (2005), "Foreign Direct Investment, Competition and Industrial Development in the Host Country", European Economics Review, vol. 49, pp.1761-1784.

Braconier, H., Norbäck, P. J., & Urban, D. (2005). Multinational enterprises and wage costs: Vertical FDI revisited. *Journal of International Economics*, *67*(2), 446-470.

Brakman, S., & Garretsen, H. (2008). Foreign direct investment and the multinational enterprise: An introduction. *Foreign direct investment and the multinational enterprise*, 1-10.

Demeti, A., & Rebi, E. (2014). Foreign direct investments (FDI) and Productivity in Simona, B. U. T. A., George, P., GOGONEA, M. R., KAJANUS, M., PIZAM, &PEDREIRA, D. V. Executive editor: Adrian Liviu SCUTARIU Editors: Elena HLACIUC, Carmen CHAŞOVSCHI, Florin BOGHEAN, Mariana LUPAN, Eugenia IANCU.

Forte, R. and Sarmento, P. (2012), "Foreign Presence and Market Concentration: The Case of Portuguese Manufacturing Industries".

Fang, Y., Jiang, G. L. F., Makino, S., & Beamish, P. W. (2010). Multinational firm knowledge, use of expatriates, and foreign subsidiary performance. *Journal of Management Studies*, *47*(1), 27-54.

Görg, H., & Strobl, E. (2003). Multinational companies, technology spillovers and plant survival. *Scandinavian Journal of Economics*, *105*(4), 581-595.

Kazuma, E. Hearing, L. et al. (2011). “The overseas subsidiary activities and their impact on the performance of Japanese parent firm”. Research institute of economy trade and industry.

Kosova, R. (2010). Do foreign firm crowd out Domestic firm? Evidence from the Czech Republic. The review of economics and statistics.

Kastalli, I. V., & Van Looy, B. (2013). Servitization: Disentangling the impact of service business model innovation on manufacturing firm performance. *Journal of operations management*, *31*(4), 169-180.

Lawana, N. (2016). *The impact of foreign direct investment on labour productivity of the automotive sector in South Africa* (Doctoral dissertation, University of Fort Hare).

Levin, A., Lin, C.-F., & Chu, C.-S. J. (2002). Unit root tests in panel data: asymptotic and finite-sample properties. Journal of econometrics, 108(1), 1-24.

Mahmood, H., & Chaudhary, A. R. (2012). Impact of sector-specific FDI on sector-specific labor productivity in Pakistan. *World Applied Sciences Journal*, *19*(4), 566-574.

Markusen, J. R., & Maskus, K. E. (2002). Discriminating among alternative theories of the multinational enterprise. *Review of international economics*, *10*(4), 694-707.

Nor, N. G. M., Osman, Z., Abdullah, A. Z., & Chin, Y. J. (2000). Trends in the Malaysian industrial market structures. *Journal Ekonomi Malaysia*, *34*, 3-20.

Noe, R. A., & Kodwani, A. D. (2018). *Employee training and development, 7e*. McGraw-Hill Education.

Katkalo, V. S., Pitelis, C. N., & Teece, D. J. (2010). Introduction: On the nature and scope of dynamic capabilities. *Industrial and corporate change*, *19*(4), 1175-1186.

Nemet, G. F., & Kammen, D. M. (2007). US energy research and development: Declining investment, increasing need, and the feasibility of expansion. *Energy Policy*, *35*(1), 746-755.

Park, B. I., & Ghauri, P. N. (2011). Key factors affecting acquisition of technological capabilities from foreign acquiring firms by small and medium sized local firms. *Journal of World Business*, *46*(1), 116-125.

Rehman, N. U. (2016). FDI and economic growth: empirical evidence from Pakistan. Journal of Economic and Administrative Sciences, 32(1), 63-76.

Serfraz, A. (2017), "Analyzing short-run and long-run causality between FDI flows, Labor productivity and education in Pakistan". NO 61.

Singh, J. (2011), "Inward investment and Market Structure in an Open Developing Economy: A case of India's Manufacturing Sector", Journal of Economics and Behavioral Studies, 2(6), pp,286-297.

Tintin, C. (2012). Foreign direct investment, productivity spillovers and labor quality international Journal of Economics and Finance studies Vol 4, No. 2.

Teixeira, A. A., & Tavares-Lehmann, A. T. (2014). Human capital intensity in technology-based firms located in Portugal: Does foreign ownership matter? *Research Policy*, *43*(4), 73

Wooldridge, J. M. (2016). Introductory econometrics: A modern approach: Nelson Education.