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Foreign Direct Investments in Jordan

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ABSTRACT

Inspired by the current literature in the area of foreign investments, this study attempts to understand what firm characteristics attract foreign investors into the Amman Stock Exchange (ASE), and whether foreign ownership enhances the productivity of the manufacturing companies listed on the ASE. The findings show that foreign direct investments pumped into the ASE are more likely to be received by companies with large size, low dividend yield and low liquidity. Furthermore, it is found that when mining and extraction engineering and construction companies are included in the study sample, the productivity of the companies is positively affected by foreign ownership. However, when the sample is composed only of manufacturing companies, it is found that productivity is unaffected by foreign ownership. The latter finding questions the effectiveness of foreign investments channelled through the stock exchange market into the manufacturing sector in Jordan.

JEL Classifications: *G15, F23, D24*

Key words: *foreign ownership; FDI; productivity; manufacturing companies; ASE*

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I. INTRODUCTION

Foreign direct investment (FDI) is essential for economic growth (Laureti and Postiglione, 2005) and, in particular, foreign capital inflows are vital for the economic development of developing countries (Aggarwal et al., 2005). Foreign equity investment is important for such countries as it enhances the liquidity of the markets and makes firms more globally competitive (Aggarwal et al., 2005) by lowering cost of capital (Bekaert and Harvey, 1997; Aggarwal et al., 2005). Lower cost of capital results in long-term investments by foreign companies, which in turn increases economic growth (Bekaert and Harvey, 1997). Therefore, economic development is driven by equity market development where the latter is enhanced by foreign equity investments (Errunza (2001) cited by Thapa and Poshakwale (2011)). Notwithstanding the above arguments in support of a favourable impact of foreign capital on the economy, Aitken and Harrison (1999) reported that although foreign ownership positively affects Venezuelan manufacturing companies' productivity, especially small companies, it negatively affects domestic companies. In another study, it was found that FDI to the manufacturing sector positively affects the economic growth while there is a negative (no-clear) effect on the primary (service) sector (Alfaro, 2003). Some reveal that for a country to achieve economic growth induced by foreign inflows, its financial system has to attain a certain level of development (Durham, 2004; Azman-Saini et al., 2010; Bekaert and Harvey, 1997; Alfaro et al., 2004[1]; Lee and Chang, 2009). Furthermore, equity portfolio inflow is attracted by highly developed credit markets while FDI inflow requires a lesser degree of development (Sakuragawa and Watanabe, 2010)[2]. Interestingly, Sakuragawa and Watanabe found that liberalizing the financial markets in the emerging countries brings in FDI, while it reduces equity portfolio investment.

On the driving forces of foreign inflows into a country, it was found that foreign investors prefer emerging equity markets that better protect shareholders and investors and employ accounting policies that keep them informed (Aggarwal et al., 2005). In addition, foreign equity portfolio is attracted by more developed equity markets characterised by more efficiency, larger size, lower cost and more liquidity (Thapa and Poshakwale, 2011). For firm-level driving forces, foreign investors prefer firms with better disclosure policies (Aggarwal et al., 2005)[3] and firms with larger size, higher turnover rate and lower dividends (Dahlquist and Robertsson, 2001). Dahlquist and Robertsson (2001) argued that turnover rate and dividend policy reflect the importance that foreign investors place on stock liquidity and tax consideration, respectively.

In light of the above and to get more understanding of the driving forces of foreign investments and their impact on companies listed on one of the MENA markets, Amman Stock Exchange, this paper addresses two important issues. First, what firm characteristics attract foreign investors to obtain a controlling share in the ASE? Second, has the productivity of the manufacturing companies listed on the ASE been enhanced by foreign direct investments? This paper contributes to the literature by examining the relationship between foreign investment and firm characteristics in the ASE as an individual market rather than as a part of a larger sample as in other studies. Investigating the case of the ASE will be an interesting topic due to the high importance of this market as it is among the largest Arab markets and also due to its importance in the Jordanian economy evidenced by its 77% market capitalization to GDP ratio (the Office of King Hussein I of Jordan website)[4]. As a second contribution, this paper

investigates the impact of foreign ownership on the productivity of the manufacturing companies listed on the ASE.

The rest of the paper is organised as follows. Section II provides an overview of foreign investment activities in Jordan/ASE. Section III sets out the data and discusses the econometric methodology. The testing and estimation results are presented in Section IV and section V concludes.

II. AN OVERVIEW OF FOREIGN INVESTMENTS TO THE AMMAN STOCK EXCHANGE

Although Jordan started to promote foreign capital inflows in the late nineties (Laureti and Postiglione, 2005), it is among the top-three MENA countries in terms of attracting FDI inflows (Mohamed and Sidiropoulos, 2010), with a stable increasing trend (Khrawish and Siam, 2010). In addition, Arab FDI in Jordan represents a major component of FDI and the average growth in FDI in Jordan is among the highest in the region (Al-Muhtaseb, 2009). Nevertheless there has been variation in these inflows which was attributed basically to the unrest in the region (Al-Abdulrazag and Bataineh, 2007).

Several explanations were provided for the increase in FDI to Jordan, including: Investors' confidence in the economy (Al-Halalmeh and Sayah, 2010); Privatization (Bakir and Alfawwaz, 2009; Mishal and Abulaila, 2007; Al-Qudsi et al., 2007 and 2008; Al-Muhtaseb, 2009; Mansur, 2008), which includes cement, transportation and telecommunication companies (Isik et al., 2005); Qualified Industrial Free Zone (Bakir and Alfawwaz, 2009; Al-Muhtaseb, 2009); Iraqi capital flows in years 2003 and 2004 (Mishal and Abulaila, 2007); Jordan Investment Promotion Law (Khrawish and Siam, 2010; Al-Qudsi et al., 2007 and 2008; Al-Muhtaseb, 2009; Al-Nuemat, 2009); Regional events (Mansur, 2008), ASE's ability; unrest and regional economic growth (Al-Qudsi et al., 2007 and 2008); Jordan economic policies (Al-Abdulrazag and Bataineh, 2007) and attractive investment climate (Al-Muhtaseb, 2009).

However, Jordan performance in FDI inflows compared to its potentials is below other MENA countries (Mansur, 2008). In fact, investment environment in Jordan still needs to be improved (Al-Nuemat, 2009), and financial institutions development is indispensable (Khrawish and Siam, 2010). Interestingly, Singh and Weisse (1998) argued that the use of equity finance in emerging markets is counter-theoretical and privatization, along with other factors, played a role in expanding such stock markets. Furthermore, Prasad et al. (2006) pointed out that privatization has been behind the poor countries receiving FDI inflows.

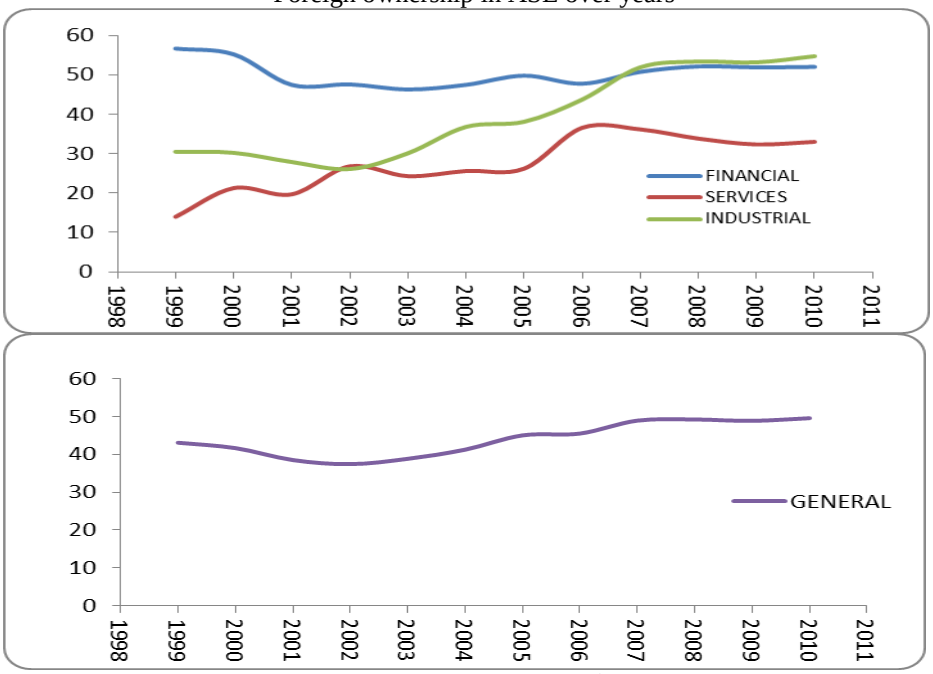
Omran and Bolbol (2003) reported that Jordan was, for a period extended up to 1999, among the top Arab countries in terms of income growth and inflows of FDI. They indicated that foreign investments were efficiency-seeking and directed to tourism as well as manufacturing sectors. However, FDI inflows to the MENA countries are driven in part by economic growth and not by financial development or market infrastructure, a result that could be explained by the undeveloped infrastructure in these countries (Mohamed and Sidiropoulos, 2010). From their side, Prasad et al., (2006) reported that developing countries of low growth enjoyed more capital inflows than those of their group with higher growth. However, FDI and portfolio inflows

received by emerging markets as a percentage of GDP are increasing and decreasing, respectively (Sakuragawa and Watanabe, 2010).

The percentage of foreign ownership in the Jordanian companies listed on the ASE was reported 15%, with the industrial companies making up half of the sample, and foreign blockholder (10% or more) ownership is one of the main forms of blockholder ownership (Omran et al., 2008). High foreign ownership in the ASE reflects its ability to attract such investment which is basically due to the good economic and investment environment in Jordan (Al-Qudsi et al., 2007 and 2008). Unsurprisingly, Arab ownership was higher than non-Arab ownership in the industrial companies in the ASE over the period 1996 - 2002 where both ownerships had on average a non-monotonic increasing trend (Al-Shiab and Abu-Tapanjeh, 2005). In November, 2009 foreign ownership in ASE was 48.3% split between Arab and other foreign investors, 33.3% and 15% respectively (Al-Halalmeh and Sayah, 2010).

Figure 1 indicates that foreign ownership in the industrial sector has overtaken that of the banking sector over the period 2007-2010 and has increased from approximately 30% in 1999 to around 55% in 2010. Furthermore, except for the year 2000, foreign ownership percentage in the industrial sector exceeds that of the service sector[5]. In fact, increasing foreign ownership seems to be an international trend. Dahlquist and Robertsson (2001) reported an increasing trend of the total value owned

Figure 1
Foreign ownership in ASE over years

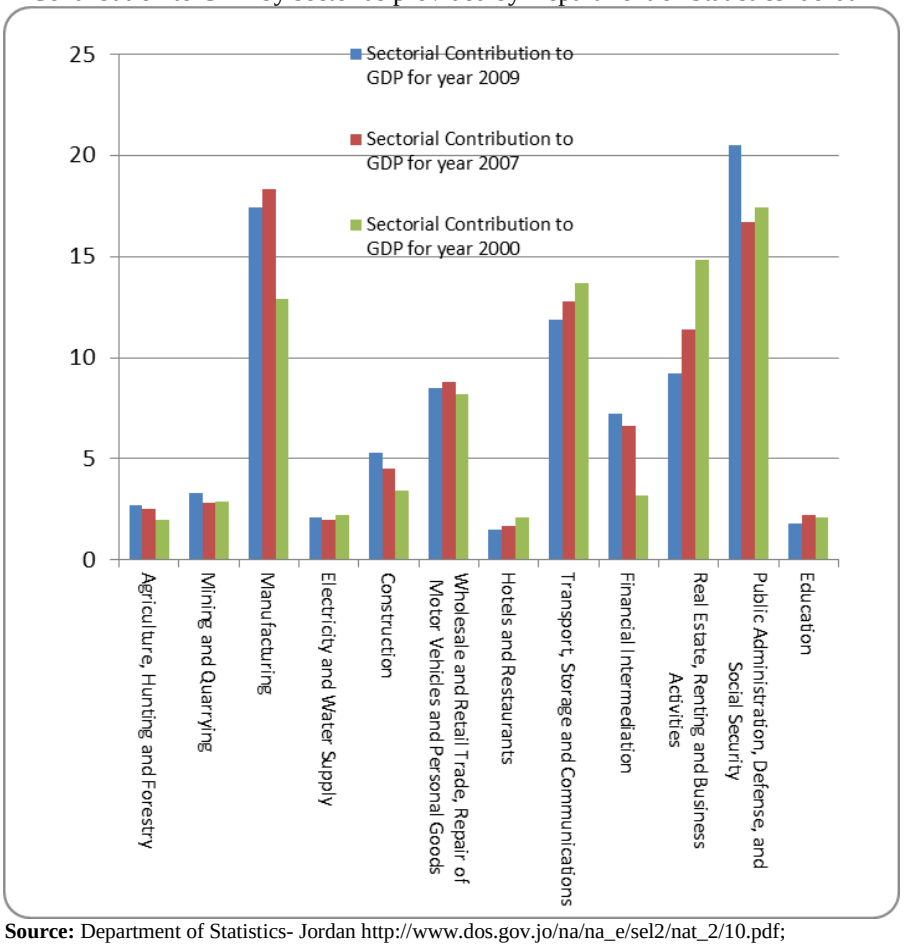


Source: ASE website; http://www.ase.com.jo/en/printpdf/percentage-non-jordanian-ownership-shareholding-companies-0 (until 2009) & http://www.ase.com.jo/en/bulletins/monthly_statistical/2010-12-01 (for 2010): Monthly Statistical Bulletin of Amman Stock Exchange December, 2010, Variable names according to the source.

by foreigners and the number of companies with foreign ownership in the Stock Exchange of Sweden. They attributed this increase in part to the favourable changes in the regulations toward foreigners. In addition, Aitken and Harrison (1999) indicated that the percentage of foreign ownership changed substantially for Venezuelan manufacturing companies across time and sectors.

Figure 2 shows that the manufacturing sector was a main contributor to the GDP in years 2000, 2007 and 2009. This development makes the second question of this paper even more interesting.

Figure 2
Contribution to GDP by sector as provided by Department of Statistics- Jordan



Source: Department of Statistics- Jordan http://www.dos.gov.jo/na/na_e/sel2/nat_2/10.pdf; Variable names according to the source.

The findings of the benefits of foreign ownership to listed firms on the ASE have been mixed and tilt more toward no effect. Although FDI to the ASE positively affects share prices (Al-Halalmeh and Sayah, 2010), it was also reported that foreign ownership adversely affects the company's value (Zeitun and Tian, 2007; Zeitun, 2009). Furthermore, foreign and Arab ownerships have no effects and negative effects, respectively, on the ASE largest industrial companies' performance (Al-Shiab and Abu-Tapanjeh, 2005). In addition, it was reported that conditional on the performance measure used, foreign ownership has either insignificant or negative significant relation with the ASE companies' performance (Zeitun and Tian, 2007; Zeitun, 2009). Moreover, Isik et al. (2005) found using production models, that Jordanian banking sector efficiency is adversely influenced by foreign ownership which they attributed to a lack of control ownership by these foreigners and to be mainly Arab nationals. From their side, Salameh et al. (2011) illustrated that companies' foreign ownership in the ASE has no bearing on companies' corporate governance and argued that this indicates that foreigners behave as insiders. Omran et al. (2008) reported that company's market value is positively affected by foreign ownership in several Arab countries including Jordan, while foreign investors have no effect on company's performance.

III. DATA AND METHODOLOGY

A. Data

In our database, our aim was to collect the data required to examine the two main questions of this paper: what firm characteristics attract foreign direct investors to the ASE? And has the productivity of the manufacturing companies listed on the ASE enhanced by foreign direct investments? In order to examine the first question, we started by checking data availability for the entire set of all companies listed on the ASE. Following Dahlquist and Robertsson (2001), a number of variables were obtained for all companies; these variables are: the highest foreign ownership percentage, company's industry, dividend yield, market capitalization, market value to book value, and turnover by value. The highest foreign ownership percentage that exceeds 1% was obtained for each company from the ASE' website[6] on the 5th and the 6th of July 2011 (ranged between zero and 98.577 %). The company's industry sector of 2010, as classified by the ASE, was obtained from the Companies' Guide downloaded from the ASE website[7]. The last four variables for year 2010 were downloaded from Datastream. After assessing the availability and the quality of the data, we arrived at a sample of 251 stocks of which 222 stocks were used to estimate the first specification of equation (1) below, and then out of these stocks, 73 stocks were used to estimate the second specification of equation (1).

In order to examine the second question, the following annual variables, following Aitken and Harrison (1999), were obtained for all the manufacturing companies listed on the ASE. The variables obtained are: percentage of foreign ownership, labour (this paper, similar to Isik et al. (2005), uses total number of employees as a measure of labour input due to the inability to get data on its components), inventory, fixed assets[8], sales, cost of goods sold, company's industry subsector (For the years that no such classification appeared in the Companies' Guide, obtained from the ASE website, the company was assumed to remain in the same

industry and this resulted in companies between 2000 and 2006, had they appeared for the first time in the Companies' Guide, to be automatically dropped out from the sample), annual implicit deflator for GDP for Manufacturing, and GDP deflator for Jordan. The first seven variables were obtained from the Companies' Guide downloaded from the ASE website. [9] Annual implicit deflator for GDP for Manufacturing was obtained from Jordan- Department of Statistics website[10] and GDP deflator for Jordan was obtained from the World Bank database, World Development Indicators and Global Development Finance.[11] These variables were needed to construct foreign ownership; output; labour; material costs; and capital, as explained in details in Aitken and Harrison (1999), in order to estimate equation number (2) below. After assessing the availability and the quality of these data for the manufacturing companies, we arrived at a sample of 57 companies for the period 2000-2008.

B. Descriptive Statistics

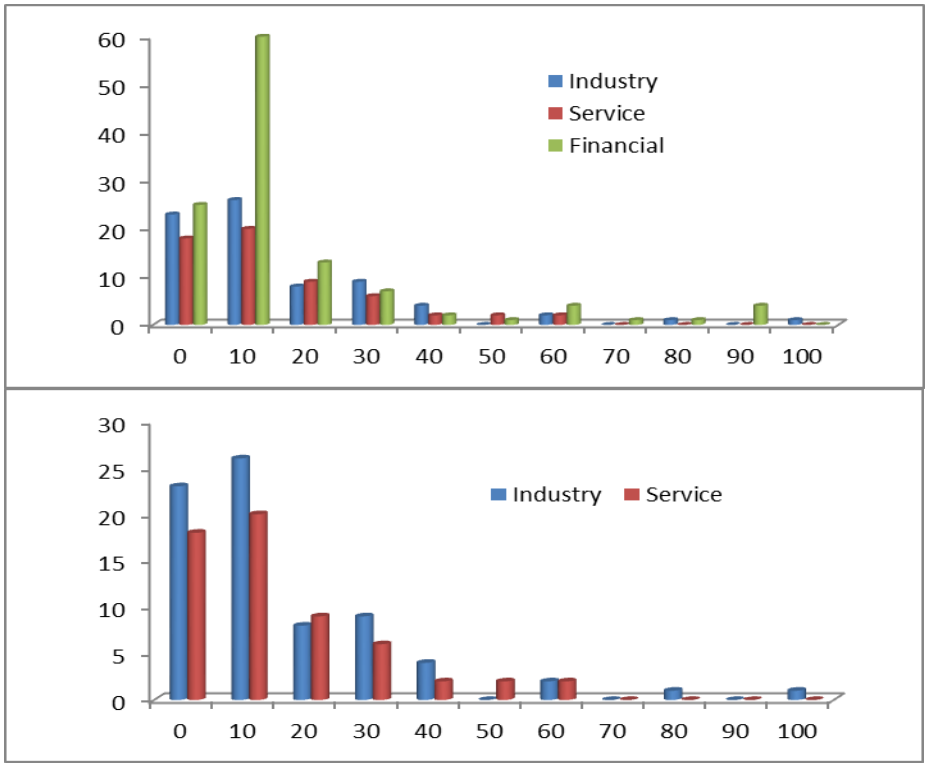
The distribution of the highest foreign ownership percentage is shown in Table 1 and Figure 3. It can be seen that the number of companies, for most ranges of ownership, in the industry sector dominates the number of companies in the service sector. Furthermore, the average foreign ownership percentage and its standard deviation are higher than the corresponding values for the service sector. As for the financial sector, the average foreign ownership is 12.49% in 2011. This result is not similar to the findings of Dahlquist and Robertsson (2001) who reported an average foreign ownership, in the financial sector of Sweden stock exchange in 1997, of about 2.3 times that of the ASE, and with a much smaller number of companies. Furthermore, the lowest sectoral average ownership they reported was still higher than the highest average foreign ownership in the ASE sectors. The discrepancies in the results between Jordan and Sweden strongly indicate the huge work that still needs to be done by the ASE to attract foreign investments. These findings for Jordan are supportive of the finding that the Jordanian stock market is underdeveloped (Isik et al., 2005) and that the MENA stock markets are still lacking behind and should be developed (Naceur et al., 2008).

Table 1
Distribution of the highest percentage of foreign ownership that exceeds 1%

	Foreign Ownership			Companies with FDI		
	Average	Standard Deviation	Maximum	Total No. Of Companies in the Sectors	No. Of Companies	Their Percentage of Total No. Of Companies in the Sector
Financial	12.49	19.84	88.62	118	33	27.97%
Service	10.88	14.20	53.23	59	21	35.59%
Industry	11.78	18.16	98.58	74	25	33.78%

Source of data is: http://www.ase.com.jo/en/equities, and from there for each individual listed company, information on shareholders was obtained.

Figure 3
Frequency of the highest percentage of foreign ownership that exceeds 1%



Source of data: http://www.ase.com.jo/en/equities, and from there for each individual listed company, information about shareholders can be obtained. Zero represent that there is no foreign ownership that exceeds 1% in this company.

Table 2[12] shows that the total market capitalization of the 78 companies, with FDI-equity investment, represents 49% of the total market capitalization of all listed companies on the ASE. Foreign investors own 61% of the total market capitalization of these companies which consequently represents 30% of the market. The total market capitalization of the four companies in the mining and extraction industries which received FDI represents 96% of the total market capitalization of all listed companies in this sub-sector and foreign investors own around 63% of these companies. Our results do not agree with the results of Bakir and Alfawwaz (2009) that Jordanian transportation and mining were comparatively poor sectors in terms of receiving FDI. However, our results confirms those of Zeitun (2009) who reported that steel, mining and heavy engineering has the highest average foreign ownership among the ASE sectors.

Table 2
Companies with FDI ownership

Industry	Total market capitalization of companies with FDI (as a percentage of the sector)	Total value owned by foreign investors; FDI plus other equity investments	No. of companies with FDI based on data used in Table 1
Banks	3,853,793,968 41%	2,515,185,810	10
Diversified Financial Services	101,641,298 20%	46,930,066	6
Insurance	160,340,000 43%	69,165,080	10
Real Estate	87,750,000 12%	27,245,750	7
Commercial Services	32,758,500 9%	26,581,215	4
Hotels and Tourism	421,394,217 62%	148,872,050	7
Transportation	192,016,862 74%	65,557,673	7
Food and Beverages	132,900,000 63%	86,271,600	4
Educational Services	67,040,000 22%	21,117,600	1
Health Care Services	34,300,000 51%	8,047,900	2
Glass and Ceramic Industries	2,040,000 49%	569,160	1
Mining and Extraction Industries	4,724,467,874 96%	2,994,936,781	4
Engineering and Construction	100,203,782 85%	37,185,500	5
Electrical Industries	96,900,000 82%	43,009,200	3
Pharmaceutical and Medical Industries	46,385,000 27%	17,750,860	3
Paper and Cardboard Industries	8,425,000 38%	2,972,450	2
Printing and Packaging	4,600,000 42%	2,760,000	1
Chemical Industries	3,360,000 4%	722,400	1
Total % of all Sectors	10,070,316,501 49%	6,114,881,096 30%	78

Source of data: ASE's Monthly Statistical Bulletins (from 2011-04-03 to 2011-04-28), available at: http://www.exchange.jo/en/bulletins/monthly_statistical/2011-04-03 last accessed on 01/08/2011

Furthermore, the mining and extraction sector followed by the financial sector have the highest weights in foreign investors' portfolio in the ASE, of about 49% and 43% respectively. This is consistent with Bakir and Alfawwaz (2009) who stated that the Jordanian banking sector is among those sectors that received FDI along with the communication and construction sectors. The appeal of the financial sector to foreign investors seems to be a worldwide phenomenon as Dahlquist and Robertsson (2001) reported that the engineering sector has the highest weight in foreign investors' portfolio in the Swedish market and financial sector has the third place.

C. Methodology

In this paper we focus on estimating two models; the first model is a regression equation with two specifications used to investigate the firm characteristics that attract foreign direct investors to the ASE. The first specification is estimated as a logit model and the second specification is estimated as a multiple regression. The second model is a log linear production function estimated using OLS to investigate the impact of foreign ownership on the productivity of the manufacturing companies listed on the ASE.

To examine what firm characteristics attract foreign direct investors to the ASE, we follow Aggarwal et al. (2005) and Dahlquist and Robertsson (2001) and regress firm's foreign ownership on a number of firm characteristics as follows (Dahlquist and Robertsson, 2001, Eq. 1, p. 426):

$$FO_{it} = f\ (\delta_{1t}, \delta_{2t}, ..., \delta_{nt}) \quad (1)$$

where δ_{it} represents CLMC (log of company's market capitalization), CDY (company's dividend yield), BVTMV (company's book to market value) and CTOR (company's turnover rate), respectively, n is the number of firm's characteristics that will be included in the specification, and t is 2010 for firm characteristics and 2011 for FO. The equation includes an intercept[13]. Firm's size could signal foreigners' awareness of the firm as well as its stock liquidity (Dahlquist and Robertsson, 2001; Aggarwal et al., 2005), turnover rate measures stock liquidity and book to market value is a measure of valuation (Dahlquist and Robertsson, 2001).

In the first specification of equation (1), which follows Aggarwal et al. (2005), the dependent variable, FO, is a dummy variable which assumes a value of one if above 10% of the firm's equity value is owned by a single foreign investor (the firm should have a foreign ownership that is in the form of FDI to be assigned a value of one; i.e., ownership percentage is 10 or more according to the OECD[14] and the UNCTAD websites[15,16] definition of FDI), and assumes zero otherwise. This equation, following Aggarwal et al. (2005), was estimated as a logit model with industry dummies.

In the second specification of equation (1), the dependent variable, FO, is the foreign direct ownership percentage. This second specification is estimated, following Aggarwal et al. (2005) and Dahlquist and Robertsson (2001), as a multiple regression with industry dummies and heteroscedasticity correction.

In order to examine whether the productivity of the manufacturing companies listed on the ASE has been enhanced by foreign direct investments, we used the

following company's log-linear production function (Aitken and Harrison, 1999, Eq. 1, p. 607):

$$\text{Output}_{it} = f(\lambda_{it,}\ \Upsilon_{FO}) \quad (2)$$

where $\text{Output}_{it,}$ is the log of the company's output, $\lambda_{it,}$ includes $\lambda_{1t,}$ $\lambda_{2t,}$ and $\lambda_{3t,}$ which are the inputs: capital, labour and material cost, respectively (all three variables in log form), and Υ_{FO} represents total foreign ownership percentage in the company. The equation also includes an intercept. The above equation, following Aitken and Harrison (1999), was estimated for a panel set of manufacturing companies using OLS with time dummies, with and without dummies for industry type, and with heteroscedasticity correction.

IV. RESULTS AND DISCUSSION

Table 3 presents the results of estimating the first specification of equation (1). The results show that the type of sector is not a driving force of FDI to the ASE; only firm's size is statistically significant and has a positive effect on the FDI. These results are supported by the findings of Dahlquist and Robertsson (2001) and Aggarwal et al. (2005) who also pointed out that firm's size could signal foreigners' awareness of the firm as well as its stock liquidity. Our results are also supported by the finding of Salameh et al. (2011) which indicated a significant positive correlation between firm's size and foreign ownership for Jordanian companies listed on the ASE.

Table 3 shows that the coefficient of firm's dividend yield has a negative but statistically insignificant sign. This result is consistent with the finding of Aggarwal et al. (2005), but it is not supported by Dahlquist and Robertsson (2001) who reported a significant negative relationship between the firm's dividend yield and its foreign ownership. However, Dahlquist and Robertsson (2001) support our findings in Table 4 that shows that the relationship between the firm's dividend yield and FDI ownership is negative and statistically significant at 10%.

Table 3
FDI ownership (highest percentage) and firm's characteristics (1A)

Variable	Coefficient	P-Value of Chi-Square
Intercept	-3.5342	0.0007
Sector_1 1	-0.3955	0.2695
Sector_1 2	-0.0684	0.8637
CLMC2010	0.2952	0.0038
CDY2010	-0.0005	0.9844
BVTMV2010	0.1386	0.4927
CTOR2010	0.0020	0.9167

Sector_1 1, and Sector_1 2 are dummy variables for financial and service sectors respectively. CLMC, CDY, BVTMV and CTOR are log of market capitalization, dividend yield, book to market value and turnover rate respectively. The dependent variable is dummy variable for FDI ownership (first specification of Eq.1) which is estimated as logit model. Ownership as on either 5th or 6th of July, 2011 and the other variables are for 2010.

Table 4
FDI ownership (highest percentage) and firm's characteristics (1B)

Variable	Coefficient	P-Value
DD1	44.44	0.0175
DD2	34.82	0.0350
DD3	36.79	0.0158
CLMC2010	-0.57	0.6745
CDY2010	-0.40	0.0869
BVTMV2010	-0.19	0.9680
CTOR2010	-0.52	0.0087

DD1, DD2, and DD3 are dummy variables for financial, service and industry sectors respectively. CLMC, CDY, BVTMV and CTOR are log of market capitalization, dividend yield, book to market value and turnover rate respectively. The dependent variable is FDI ownership percentage (second specification of Eq.1) which is estimated as a multiple-regression with heteroscedasticity correction. Ownership as on either 5th or 6th of July, 2011 and the other variables are for 2010.

Table 4 reports the results of the second specification of equation (1). It shows that the firm's size is not relevant within this group of companies. However, firms with higher turnover rate have less FDI ownership. This could be attributable to foreigners having control ownership in such companies which reduces the turnover. However, the negative relationship between FDI-percentage of ownership and turnover rate is inconsistent with Dahlquist and Robertsson's (2001) findings, who reported that the turnover has a negative sign for a sub-category of foreign owners (Nordic countries). Nevertheless, our results are supported by Aggarwal et al.'s (2005) finding of a negative, although insignificant, coefficient for the turnover. Furthermore, the table shows that FDI investors are attracted to companies with low dividend yield, which this is consistent with Dahlquist and Robertsson's (2001) findings for the Swedish Stock Exchange.

Table 5 presents the results of estimating equation (2). The results indicate that foreign ownership has positive but statistically insignificant impact. This means that there is no effect of foreign ownership on firm's productivity which is in disagreement with the finding of Aitken and Harrison (1999). Our finding is also inconsistent with the finding of Mishal and Abulaila (2007) regarding the relationship between FDI and the Jordanian economy productivity at the aggregate level. Yet, more in line with our results; Laureti and Postiglione (2005) reported an insignificant FDI effect (while significant adverse portfolio equity-flows effect) on the country's economic growth for the Mediterranean countries. Laureti and Postiglione (2005) attributed the adverse effect partially to the weak industrial sectors in these countries. In addition, it was reported, using a production function, that neither Jordan's economic growth (Al-Muhtaseb, 2009; Louzi and Abadi, 2011) nor its total factor production and gross capital formation have been enhanced by the FDI (Al-Muhtaseb, 2009)

Table 5
Manufacturing companies' productivity (I)

Estimation	Capital	Labour	Material Cost	Foreign Owner
Estimated with time dummies	-0.0188	0.0879**	0.9680***	0.0005
Estimated with time dummies and industry dummies.	-0.0097	0.0174	1.0051***	0.0006

** at 5% and *** at 1% Estimation of Equation (2) with log of company's output regressed against the explanatory variables which are capital, labour, material cost, all three in log forms, foreign ownership percentage, time dummies and industry dummies, with heteroscedasticity corrected for. The sample period covers from 2000 to 2008.

Interestingly, Aitken and Harrison (1999) wondered if developing countries show similar results to theirs. The case of the ASE shows that foreign ownership may not be as beneficial as expected. However, it is worth mentioning that Table 2 clearly shows that a relatively good number of companies which attracted FDI and are classified as "industry" sector companies according to the ASE classification, do in fact belong to the mining & extraction industries and the engineering & construction[17]. Indeed, Al-Muhtaseb (2009) points out that FDI in Jordan that is directed to the extraction industry, phosphate and potash, represents a major part of FDI. Motivated by this, equation (2) was re-estimated on a sample of companies that includes the manufacturing companies along with these two sub-sectors to make a sample size of 80 companies. The results which are reported in Table 6 show the foreign ownership coefficient (0.0015) is positive and statistically significant at 5% level, even though the magnitude is small compared to the one reported by Aitken and Harrison (1999). Furthermore, all industry dummies became significant with positive coefficient. Moreover, pharmaceutical and medical industries group has the largest coefficient followed by that of the mining and extraction industries and both have the highest significance level among all industry dummies.

Table 6
Manufacturing companies' productivity (II)

Estimation	Capital	Labour	Material Cost	Foreign Owner
Estimated with time dummies.	-0.0384	0.1027***	0.9572***	0.0013**
Estimated with time dummies and industry dummies.	-0.0516**	0.0548	0.9858***	0.0015**

** at 5% and *** at 1% Estimation of Equation (2) with log of company's output regressed against the explanatory variables which are capital, labour, material cost, all three in log forms, foreign ownership percentage, time dummies and industry dummies, with heteroscedasticity corrected for. The sample period covers from 2000 to 2008.

The above results could be explained by Mansur (2008, p. 1) who pointed out that "flows of FDI to Jordan have been sporadic and, for the most part, externally or privatization driven, regional in origin, and focused on real estate investment" and he indicated that Jordanian companies in mining and utility sectors undergone privatization. Furthermore, Al-Qudsi et al. (2007 and 2008) indicated that Jordan's potash along with phosphate enjoyed high price lately and the price variability of these two commodities has significantly affected ASE's volatility.

V. CONCLUSION

In this paper we have contributed to the existing literature on foreign investment, by studying what firm characteristics drive foreign investors to invest in the ASE as an individual market and what is the role of foreign ownership (both FDI and equity investment) in enhancing the productivity of the manufacturing companies listed on the ASE. These include, in particular, estimating two models; the first model is a regression equation with two specifications used to investigate the firm characteristics that attract foreign direct investors to the ASE, and the second model is a log linear production function estimated using OLS to investigate the impact of foreign ownership on the productivity of the manufacturing companies listed on the ASE.

As far as the two estimated model equations are concerned, the results reveal that large companies are more likely to be a target for FDI as well as companies with low dividend yield and low turnover rate, while the type of sector, i.e., financial, service or industrial, seems not to be a relevant factor when considering investing in the ASE by foreign investor. Furthermore, the findings revealed that foreign ownership did not enhance the productivity of the manufacturing companies in the ASE, nevertheless, when mining and extraction industries and engineering & construction companies are included in the sample, a positive effect of foreign ownership on companies' productivity exists. Overall, we can argue that foreign equity flows, either as FDI or portfolio investment, have no clear strong effect at company level in the ASE.

ENDNOTES

1. See Alfaro et al. (2004) for more on the benefits of FDI including productivity increase.
2. Available at https://www1.gsec.keio.ac.jp/imgdata/working/30_pdf.pdf, last accessed on 19/08/2011, Jordan was in their sample
3. Aggarwal et al. (2005) conducted firm level analysis across all emerging markets including Jordan.
4. According to the Office of King Hussein I website- Jordan- Keys to the kingdom- Economy – Legislative and Regulatory Reforms available at: http://www.kinghussein.gov.jo/economy3.html last accessed on 20/10/2012
5. Similar trends for foreign ownership for the different ASE's sectors and for the overall market were shown by Khrawish and Siam (2010)
6. These represent the most recent ownership percentages available at the time the data was collected from the Amman Stock Exchange website http://www.ase.com.jo/en/equities and from there for each individual company

listed, information about shareholders can be obtained. Last accessed on 06/07/2011.

7. Amman Stock Exchange website Companies Guide http://www.ase.com.jo/en/node/543.
8. OECD Glossary of Statistical Terms (2007 p.346 and p.514) defined gross (net) capital stock as total (net) fixed assets; available at: http://stats.oecd.org/glossary/download.asp; last accessed on 24/08/2011
9. Available at: http://www.ase.com.jo/en/node/543. last accessed on 01/08/2011.
10. Available at: http://www.dos.gov.jo/na/na_e/sel2/nat_2/19.pdf last accessed on 12/01/2011
11. Available at http://databank.worldbank.org/ddp/home.do and more specifically at http://databank.worldbank.org/ddp/home.do?Step=2&id=4&DisplayAggregation=N&SdmxSupported=Y&CNO=2&SET_BRANDING=YES.
12. For an interesting comparison between ASE – as an emerging market and the Swedish Stock Exchange – as a developed market, see Dahlquist and Robertsson's (2001) Table 1, which reports similar summary of foreign ownership in the Swedish exchange market.
13. For more details about the definitions of these variables and other variables used by Dahlquist and Robertsson (2001) and Aggarwal et al. (2005), please consult their papers. The reason that not all the firm's characteristics used by these studies are included in the current research is that some of these variables as Dahlquist and Robertsson (2001) indicated are proxy for others and for the rest of the variables it would be interesting to be included in the analysis, however we leave them for a future research.
14. *OECD Benchmark Definition of Foreign Direct Investment* (1996 and 1999), Third Edition, available at http://www.cmfb.org/pdf/1995%20July%20BD3.pdf. Last accessed on 02/08/2011
15. Available at: http://www.unctad.org/templates/Page.asp?intItemID=3146&lang=1, last accessed on 29/07/2011
16. As it can be seen below, above 10% is used in the current research to identify FDI ownership rather than 10% or above, as a conservative approach to make sure all companies that are considered to have FDI ownership have passed the cut-off point. As a result of this only five companies excluded. Sakuragawa and Watanabe (2010) point out that according to IMF and OECD, FDI should exceed 10% of ownership of voting shares.
17. Mining and Extraction and Engineering and Construction subsectors are not manufacturing based on the classification of Department of Economic and Social Affairs, Statistics Division (2008) "International Standard Industrial Classification of All Economic Activities, Revision.4", obtained from the United Nations Statistical Division website, Available at http://unstats.un.org/unsd/cr/registry/isic-4.asp?prn=yes , last accessed on 24/08/2011 and http://unstats.un.org/unsd/cr/registry/regcst.asp?Cl=27, last accessed on 12/10/2011.

REFERENCES

Aggarwal, R., L. Klapper, and P. Wysocki, 2005, "Portfolio Preferences of Foreign Institutional Investors," *Journal of Banking and Finance*, 29, 2919–2946.

Aitken, B., and A. Harrison, 1999, "Do Domestic Firms Benefit from Direct Foreign Investment? Evidence from Venezuela," *The American Economic Review*, 89(3), 605-618.

Al-Abdulrazag, B., and T. Bataineh, 2007, "Forecasting Foreign Direct Investment Inflow in Jordan: Univariate ARIMA Model," *Journal of Social Sciences*, 3(1), 1-6.

Al-Halalmeh, M., and A. Sayah, 2010, "Impact of Foreign Direct Investment on Shares Market Value in Amman Exchange Market," *American Journal of Economics and Business Administration*, 2(1), 35-38.

Al-Muhtaseb, B., 2009, "The Impact of Foreign Direct Investment on the Economic Growth of Jordan (1990-2006)," *Dirasat: Administrative Sciences*, 36(2), 316-331. (Arabic)

Al-Nuemat, A., 2009, "Obstacles and Solutions Facing Foreign Direct Investment in Jordan," *European Journal of Social Sciences*, 9(2), 323-328.

Al-Qudsi, S., S. Obeid, F. Numan, and A. Kaloti, 2007/2008, "Amman Stock Exchange: A Blooming Rose in the Backyard of the Jordanian Economy. *The Arab Bank R E V I E W*," 9 (Special Issue), 30-50.

Al-Shiab, M., and A. Abu-Tapanjeh, 2005, "Ownership Structure and Firm Performance: The Case of Jordan," *Journal of Business Administration*, 1(2), 1-27.

Alfaro, L., 2003, "Foreign Direct Investment and Growth: Does the Sector Matter?" *Working paper*, Harvard Business School.

Alfaro, L., A. Chanda, , S. Kalemli-Ozcan, , and S. Sayek, 2004, "FDI and Economic Growth: the Role of Local Financial Markets," *Journal of International Economics*, 64, 89–112.

Azman-Saini, W.N.W, S. Law, and A. Ahmad, 2010, "FDI and Economic Growth: New Evidence on the Role of Financial Markets," *Economics Letters*, 107, 211–213.

Bakir, A., and T. Alfawwaz, 2009, "Determinants of Foreign Direct Investment in Jordan," *International Management Review*, 5(2), 66-73.

Bekaert, G., and C. Harvey, 1997, "Capital Markets: An Engine for Economic Growth," *Working paper*, *Stanford University and Duke University and National Bureau of Economic Research*.

Dahlquist, M., and G. Robertsson, 2001, "Direct Foreign Ownership, Institutional Investors, and Firm Characteristics," *Journal of Financial Economics*, 59, 413- 440

Department of Economic and Social Affairs, Statistics Division, 2008, "International Standard Industrial Classification of All Economic Activities, Revision.4" obtained from the United Nations Statistical Division website; Available at http://unstats.un.org/unsd/cr/registry/isic-4.asp?prn=yes, last accessed on 24/08/2011 and http://unstats.un.org/unsd/cr/registry/regcst.asp?Cl=27, last accessed on 12/10/2011.

Durham, J., 2004, "Absorptive Capacity and the Effects of Foreign Direct Investment and Equity Foreign Portfolio Investment on Economic Growth," *European Economic Review*, 48, 285 – 306.

Errunza, V.R., 2001, "Foreign Portfolio Equity Investments, Financial Liberalization, and Economic Development, "*Review of International Economics*, 9, 703-726.

Isik, I., L. Gunduz, and M. Omran, 2005, "Impacts of Organizational Forms, Stock Performance and Foreign Ownership on Bank Efficiency in Jordan: A Panel Study

Approach," *Working paper*, Rowan University, Beykent University and Arab Academy for Science and Technology and Arab Monetary Fund. Presented at ERF 12th Annual Conference: Reform - Made to Last, Cairo, Egypt 19 December 2005 -21 December 2005. Available at http://www.erf.org.eg/cms.php?id=conferences_details&conference_id=3 and http://www.erf.org.eg/CMS/uploads/pdf/1184492030_Isik_Gunduz_Omran.pdf. Last accessed on 19/08/2011.

Khrawish, H., and W. Siam, 2010, "Determinants of Direct Foreign Investment: Evidence from Jordan," *BEH-Business and Economic Horizons*, 1(1), 67-75.

Laureti, L., and P. Postiglione, 2005, "The Effects of Capital Inflows on the Economic Growth in the Med Area," *Journal of Policy Modeling*, 27, 839-851.

Lee, C., and C. Chang, 2009, "FDI, Financial Development, and Economic Growth: International Evidence", *Journal of Applied Economics*, 12 (2), 249-271

Louzi, B., and A. Abadi, 2011, "The Impact of Foreign Direct Investment on Economic Growth in Jordan" *IJRRAS- International Journal of Research and Reviews in Applied Sciences*, 8(2), 253-258.

Mansur, Y., 2008, "Overcoming Barriers to Foreign Direct Investment in Jordan". *Discussion Paper*, International Research Foundation of Oman and the Fraser Institute of Canada (www.freetheworld.com).

Mishal, Z., and Z. Abulaila, 2007, "The Impact of Foreign Direct Investment and Imports on Economic Growth: The Case of Jordan," *Journal of Economic and Administrative Sciences*, 23(1), 1-31 (Arabic).

Mohamed, S., and M. Sidiropoulos, 2010, "Another Look at the Determinants of Foreign Direct Investment in MENA Countries: An Empirical Investigation," *Journal of Economic Development*, 35(2), 75-95.

Naceur, S., S. Ghazouani, and M. Omran, 2008, "Does Stock Market Liberalization Spur Financial and Economic Development in the MENA Region?" *Journal of Comparative Economics*, 36, 673-693.

Organisation for Economic Co-Operation and Development, 1996/1999, "OECD Benchmark Definition of Foreign Direct Investment," Third Edition, available at http://www.cmfb.org/pdf/1995%20July%20BD3.pdf. Last accessed on 02/08/2011.

OECD Glossary of Statistical Terms, 2007, available at: http://stats.oecd.org/glossary/download.asp; last accessed on 24/08/2011.

Omran, M., and A. Bolbol, 2003, "Foreign Direct Investment, Financial Development, and Economic Growth: Evidence from the Arab Countries," *Review of Middle East Economics and Finance*, 1(3), 231–249.

Omran, M., A. Bolbol, and A. Fatheldin, 2008, "Corporate Governance and Firm Performance in Arab Equity Markets: Does Ownership Concentration Matter?," *International Review of Law and Economics*, 28 , 32-45.

Prasad, E., R. Rajan, and A. Subramanian, 2006, "Patterns of International Capital Flows and Their Implications for Economic Development," *Working Paper* (Research Department –IMF).

Sakuragawa, M., and Y. Watanabe, 2010, "Foreign Direct and Portfolio Investments in the World," *Working Paper*, Keio University and The Global Security Research Institute of Keio University: Available at https://www1.gsec.keio.ac.jp/imgdata/working/30_pdf.pdf, last accessed on 19/08/2011.

Salameh, H., K. Al-Zubi, and B. Al-Zu'bi, 2011, "The Impact of Direct Investment and Other Control Variables on Corporate Governance in ASE," *European Journal of Economics, Finance and Administrative Sciences*, 32, 33-47.

Singh, A., and B. Weisse, 1998, "Emerging Stock Markets, Portfolio Capital Flows and Long-Term Economic Growth: Micro and Macroeconomic Perspectives" *World Development*, 26(4), 607-622.

Thapa, C., and S. Poshakwale, 2011, "Country-Specific Equity Market Characteristics and Foreign Equity Portfolio Allocation," *Working paper*, Stirling School of Management and Cranfield School of Management.

The Office of King Hussein I website- Jordan- Keys to the kingdom- Economy – Legislative and Regulatory Reforms available at: http://www.kinghussein.gov.jo/economy3.html last accessed on 20/10/2012.

UNCTAD available at: http://www.unctad.org/templates/Page.asp?intItemID=3146&lang=1, last accessed on 29/07/2011.

Zeitun, R., 2009, "Ownership Structure, Corporate Performance and Failure: Evidence from Panel Data of Emerging Market the Case of Jordan," *Corporate Ownership and Control*, 6(4), 96-114.

Zeitun, R., and G. Tian, 2007, "Does Ownership Affect a Firm's Performance and Default Risk in Jordan?" *Corporate Governance*, 7(1), 66-82.