
The Impact of Construction Sector on Palestinian Economy - Case Study : (Gaza Strip)

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Abstract:

The construction sector has a significant impact on Palestinian economy and the tool through which a society achieves its goal of economic growth and development. Share of the construction sector in Palestine GDP and construction sector VAD has fluctuated throughout the study period specially for Gaza Strip. The performance of construction sector is affected by some independent variables, such as, investment, foreign aid and other variable. Performance of the construction sector will affect GDP growth rate and the share of construction sector VAD in Palestine GDP. Results of time series data analysis, show that, first, there is a significant effect of investment and foreign aid on Palestine construction sector, and therefore the sector has a positive effects on GDP and value added . Second, Gaza Strip results shows that, there is a significant effect of investment on construction and very limited effect of foreign aid on construction sector in Gaza Strip.

Keywords: Construction sector, Investment, Foreign aid, GDP, VAD, Palestine, G.S.

1 Introduction:

Construction sector has been always considered as one of the most important sectors in the economies of all countries for its broad and intense linkages with other sectors which stimulate economic development in the country as a whole is a major generator of jobs and constitutes an important component of gross domestic product (GDP). However, added-value. The industry becoming increasingly more complex partly because the complexity of the construction process itself, and the large number of parties involved including clients, users, designers, regulators, contractors, suppliers and others. The industry's fortunes tend to fluctuate with the general economy, and it has a cyclical nature and quick response to the changes in the economy (Olomolaiye et al.1998).

Construction sector has a significant impact on Palestinian economy and the tool through which a society achieves its goals of economic growth and development. The sector has played a crucial role in extending job opportunities for Palestinian labor force. Expansion of the construction activity in both the West Bank & Gaza Strip (WBGs) and State of Israel has generated a lot of jobs for skilled, semiskilled and unskilled construction workers. The absolute number of domestic construction labor has increased from 12.8 thousands in 1970 to reach 40.3 thousands in 1996 (PECDAR, 1997).

The contribution of housing sector is considered as an important element in the formation of the GDP in the Palestinian economy. The share of housing in to (GDP) was about 5.3% of the total GDP in the West Bank in 1966, while it was about 6.2% in the Gaza Strip [Gharibeh, 1985]. However this share was dropped in the West Bank to about 3.5% in

1968 due to the 1967 war. Thereafter, it increased to about 15.1% in 1975, and reached to about 16.7% in 1982 [ICBS, 1988]. Concerning the Gaza Strip, the housing sector share of the gross domestic product was ranged between 3.4% as a minimum in 1968 to 19.1% as a maximum in 1979 (Sabri, 1999)..The construction sector in Palestine witnessed different phases. First, it have experienced a considerable growth in the aftermath of 1967; its share of Gross Domestic Product(GDP) increased from less than 9 % in 1985 to about 26% in 1994. During that period the sector's contribution fluctuated in an upward long-run trend bounded by 9 % and 19 % from 1970 to 1980, and by 15.2 % 26 % from 1989 to 1994 (PECDAR, 1997). Due to increased demand from the first Intifada, and to accommodate Palestinian returnees from the Gulf following the first Gulf War, the construction sector experienced a steady increase from 1991 onwards. Second ,the 1994 peace process accelerated this increase, particularly after the return of many Palestinians with the Palestinian National Authority (MAS, 2001).

Table 1: Construction sector share in GDP for the WBGS. Million US\$

Item years	GDP	Construction share%
1972	276.2	9
1974	548.7	12
1976	650.5	16
1978	695.4	16
1980	1044	16
1982	1002	19
1984	998.8	18
1986	1536.7	16
1988	1789.9	16.7
1990	2220	21.6
1992	2486.6	22.4
1994	2975.3	26

Source: ICBS, National Accounts of Judea and Samaria 1968-1996 (PECDAR, 2007).

The third phase, prior to the Israeli re-occupation of the Palestinian territories on September 28, 2000, construction sector used to employ an average of 22.3% of Palestinian labor force volume. By 2001, the sector employs 10.8% of the labor force volume only, thus constituting a decrease in the labor force volume as a direct consequence of the Israeli forces occupation and blockade to WBGS (PCU, 2003).

2 Literature review:

The role and importance of construction sector in the economy has been addressed by number of researchers and international bodies, many of whom have focused on developing countries . Turin, 1973; Ball 1981; World Bank, 1984; Wells, 1986; Ofori, 1990). provided the importance role of construction in economic development. Bon (1992) analysed the changing role of the construction sector at various stages of economic development and presented a development pattern for the industry based on the stage of development of a country's economy. The main aspects of the proposition were that, in the early stages of the economic development, the share of construction in gross domestic product (GDP) increases but

ultimately declines in industrially advanced countries. Early studies of the relation between construction and economic development were implicitly or explicitly based on Keynesian economic philosophy. Strassmann (1970) and Turin (1978) provided statistical correlations between measures of construction output (such as value added in construction and employment) and per capita national income.

Lopes (1998) addressed the great flexibility of construction industry activity in adjusting to different framework conditions that in particular makes this sector of the economy a major contributor to the process of development. Han and Ofori (2001) concluded that, construction sector has played an important role in development of the Chinese economy. The study revealed that, the rapidly growing construction sector contributed to higher proportion of GDP in the Western and central province than the coastal province. Lopes et al. (2002) Shows that the direct relationship between the share of construction in gross output and economic growth is consistent only with a downturn economy.

Hosein and Lewis (2005) pointed, since the demand in the construction sector is elastic, then the contribution of construction sector to value added (VAD) is greater if the industry is flexible. Furthermore, the contribution of construction industry to other sectors of the economy is greater if the techniques that are chosen favor the use and development of local resources in terms of manpower and materials. Ramezdeen (2004) shown that the trend of the input and output profiles of construction are correlated to the economic policy regime in operation. Wu and Zhang (2005) results of input and output tables shows that, the pull effect of the construction sector is greater and greater so, it is a power in Chinese economy. The role of push effect of the construction sector are still weak in the Chinese economy.

Ruddock and Lopes (2006) demonstrated that the inverse U shaped patterns hold, for the share of construction in the national economy. That is the share of construction sector in total output first goes up and then comes down with economic development. Ruddock and Lopes, believe that Bon's (1990) analysis – which concerned the period 1970 -1985, which was certainly influenced by the recessive period, (1973 -1982), which was characterized by two oil shocks, and that followed the period (1960 -1973) the golden age of the world economy. Wong et al. (2008) passed the time series data in Hong Kong, the analysis show that particularly the infrastructure sector derives the growth of general economy, and not vice versa. Khan (2008) showed that there is strong casual relationship between aggregate economy and the construction sector of Pakistan.

Lopes et al. (2011) used time series data and indicated that, the Granger Causality test shows that GDP growth leads the growth in the construction sector with a 6 years lag. Also causality from GDP to construction is not statically rejected at 10% significance level, means that, there is, in the long-run, a weakly uni-directional relationship between the GDP growth rate and the construction growth rate in Cape Verde. Choy et al. (2011) addressed the positive relationship between property investment and construction activities on economic growth.

Eltallala and Hens (2010) pointed that, aid pledged by international donors to reconstruct Gaza Strip is sizable, but its effect on the economy is limited, they predict that, spending the aid will give a modest 3% temporary boost to GDP. The effect is limited because much of the aid is spent on imported materials, the donors aid to Palestine may benefit State of Israel more than Palestine. Khaldan (2010) found that the Palestinian construction sector has a significant correlation at the 0.05 levels with the following economic

sectors; agriculture and fishing, household and retail trade and GDP by amounts of 0.61, 0.464, and 0.898 respectively. It is also found that the construction sector has a significant correlation with the economic sectors more than any other sector. Enshassi et al. (2006) identified factors that have the potential to cause contractor's business failure in the Gaza Strip. Contractors have ranked the following factors as highly influential with huge potential to cause contractor's business failure: (A) delay in collecting debt from donors; (B) border closure; (C) dependence on bank loans and paying high interest rate; (D) lack of capital; (E) lack of experience in the line of work; (F) cash flow mis-management; (G) segmentation of the Gaza Strip; (H) low margin of profit due to competition; (I) lack of experience in contracts; and (J) award contracts to the lowest bid price. Elkarriri et al. (2011) border closure, political uncertainty and interruption, bankrupting, or insolvent of clients, limitation on imports and others, were shown as critical factors and drivers of contract terminations.

Another point in this context related to foreign aid and how it affects economic growth needs to be discussed here. There is highly controversy about the role of foreign aid and sustainable economic development. Tartir (2012) studied aid and development in Palestine, Tartir made comprehensive survey and mentioned there are three perspectives about foreign aid. The first perspective argues that aid has no effect/undermine development and growth (c.f. Mosely et al. 1987; Rajan and Subramanian 2008); while the second perspective argues that a positive relationship between aid and economic development exists however, with diminishing returns with or without qualifications (c.f. Hansen and Trap 2000, 2001; Durberry 2004; Dalgarrd et al. 2004); while the third perspective which became the conventional wisdom among donors argues that aid works best or only works with the presence of certain conditions, such as good fiscal, monetary, and trade policies, i.e. the post-Washington Consensus prescription (c.f. World Bank 1998, 2002; Burnside and Dollar 2000; Collier and Dollar 2002).

3 Objectives:

The present study aims to assess the weight of the construction sector in the Palestine economy, and the impact of the construction sector on GDP growth and construction VAD, at the same time a similar assessment will be made for the Gaza Strip, this is important because of the increased poverty and unemployment rate in the Gaza Strip. The study will suggest some recommendations that might lead to more contribution of the construction sector to the Palestine economy.

4 Methodology;

In order to achieve the research objective, a descriptive analytical approach will be used, in this context the needed secondary data had been collected from different reliable resources (relevant literature and publications related to the construction sector, statistical and time series data from, the Palestinian Central Bureau of Statistics (PCBS), the Ministry of Planning (MOP), the World Bank (WB), and other international bodies). It is assumed that the independent variable (construction sector) will be affected by some independent variables, (Gross Investment and Foreign Aid), in other words Gross Investment and Foreign Aid will affect the role of the construction sector in the Palestinian economy. Therefore time series data of foreign aid and investment for the period 1995 - 2011 will be collected and analyzed to show their

effects on the role of construction sector on the dependent variables that's, (Construction VAD and GDP Growth).

5 Economic Performance and Construction Sector in Palestine.

Up to date, the Palestinian economy has failed to achieve self-sustained development, Table 2 clearly show that both agriculture and manufacturing sectors are in a sharp decline, agriculture share to the GDP went down from 11.9% in 1998 to only 5.6% in 2009. Manufacturing sector also share decreased from 22.3% in 1998 to only 14.3% in 2009, On the other hand non-productive sector continued to grow throughout the period. Economic slowdown, high unemployment and poverty rate, government policies, border closures and other factors had exerted a passive effect on the performance of the sectors and the economy as whole.

The data shows that the construction sector's share in the GDP decreased from 9.6% in 1994 to 3.3% in 2009, the sector was exposed to many external shocks which affected not only construction but also the entire economic sector and social conditions in Palestine. During that period the contribution of construction had fluctuated, several factors had contributed to the decreasing role of the construction sector during that period, in fact the most important is border closures, that severely restricts the importation of construction materials into Gaza strip and resulted in shortages of these materials in the local market and prolonged delays in delivering any construction project. This is an important factors that leads to business failure mainly in Gaza Strip.

Table 2: Percentage Contribution to GDP by Economic Activity for the Years 1994-2009 at Constant Prices : 2004 is the Base Year

Economic Activity	Palestinian Territory*															
	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Agriculture and Fishing	11.9	11.1	10.3	9.5	8.7	7.9	7.1	6.3	5.5	4.7	3.9	3.1	2.3	1.5	0.7	0.9
Mining, Manufacturing, Electricity and Water	22.3	21.5	20.7	19.9	19.1	18.3	17.5	16.7	15.9	15.1	14.3	13.5	12.7	11.9	11.1	10.3
Mining and Quarrying	0.8	0.7	0.6	0.5	0.4	0.3	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Manufacturing	9.9	8.8	7.7	6.6	5.5	4.4	3.3	2.2	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Electricity and Water Supply	1.6	1.3	1.0	0.7	0.4	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Construction	7.2	5.4	6.9	6.3	7.1	1.2	7.2	4.2	2.9	3.8	5.7	6.8	7.2	6.6	6.4	7.4
Wholesale and Retail Trade	9.1	6.2	1.7	2.1	1.1	7.0	2.0	0.2	2.6	0.4	9.9	9.4	9.6	9.7	1.0	0.0
Transport, Storage and Communications	5.0	4.7	4.4	5.7	6.6	7.7	7.7	7.7	7.7	6.5	6.6	5.8	6.6	7.4	7.7	7.3

Financial intermediation	1.1	1.9	2.0	2.5	3.0	3.5	4.1	3.3	3.9	3.8	3.6	4.4	4.3	6.0	5.7	5.1
Services	2.5	2.8	2.1	2.2	2.2	2.1	3.3	3.5	4.4	2.3	3.9	0.6	4.4	2.0	0.7	2.1
Real Estate, Renting and Business Services	1.3	1.7	1.8	1.3	1.8	9.9	1.9	1.3	1.9	1.2	1.4	1.3	7.0	7.4	7.5	7.8
Community, Social and Personal Services	0.5	0.4	0.4	0.4	0.4	0.4	0.5	0.5	0.8	0.9	0.9	1.2	1.1	1.3	1.5	1.7
Hotels and Restaurants	2.0	1.7	1.5	1.7	1.8	1.7	1.2	0.7	0.4	0.7	0.7	0.8	0.9	0.8	0.7	0.8
Education	6.1	5.6	5.9	6.4	6.4	6.4	6.4	7.8	8.7	8.3	7.8	8.2	7.9	8.2	8.2	8.1
Health and Social Work	3.7	3.4	3.3	2.4	2.6	2.8	2.6	2.8	3.3	3.2	3.0	2.5	2.7	2.7	2.8	2.8
Public Administration and Defense	7.8	9.7	1.0	9.8	8.9	9.0	9.9	1.5	4.4	0.2	1.3	4.4	5.1	4.7	4.5	4.3
Households with Employed Persons	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.0	0.1	0.1	0.1	0.1
Public owned Employed persons	0.0	0.0	0.9	2.2	2.6	3.2	4.3	2.5	3.2	4.1	3.7	3.4	4.5	4.1	2.6	2.1
FISIM	0.7	1.1	1.9	2.2	2.5	2.8	3.6	2.9	2.9	2.9	2.8	2.6	3.0	5.6	5.6	4.4
Customs Duties	0.0	2.0	6.8	8.3	8.4	5.6	5.6	3.1	5.2	5.4	5.9	5.7	6.7	6.1	6.7	6.6
VAT on Imports, net	0.6	5.9	6.2	7.1	7.1	5.4	6.4	6.4	6.5	7.7	7.6	7.1	7.9	9.1	1.0	1.1
Total	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0

Source: www.pcbs.org.gov

On the other hand, the PCBS statistics shows that the value added of the construction sector in the Gaza Strip has declined from US\$ 130.1 million in 2005 to US\$ 38.5 million in 2009, this is due to the general ban on the import of basic construction materials has been in place since the imposition of the Gaza blockade in 2007. During the period of 2010 - 2011 the contribution of construction sector in the GDP has increased gradually from 7.4% in Q1-2010 to 11.3% in Q3-2011 (MAS 2011). The rise contribution of the construction sector in GDP was mainly due to the significant growth in the construction sector in the Gaza Strip during 2010 - 2011. This growth was spurred by the Israeli's relative ease of the siege in terms of partially allowing construction materials into the Gaza Strip.

Moreover, according to Portland Trust (2012) indicated that, the decline in food prices during 2010 – 2011 in the Gaza Strip led to a reduction in the profit margin and consequently abated the attractiveness of these markets to tunnel traders - driving them to shift to new markets such as construction materials, cement and iron, with better yields. The price of tunnel imported cement per metric ton is \$200-300, while its price in Egypt is \$ 90, which means a profit of more than 100%. This shift led to the reviving of the construction

sector, since State of Israel continues to ban cement and steel except for supplies to international institutions that work on the reconstruction of Gaza. World Bank (2012) mentioned that the high growth rate in Gaza reflects the low base from which it is starting and can be attributed to a combination of aid inflows, easing of restrictions on entry of goods from State of Israel, and increased imports through tunnels from Egypt. In particular, construction was the driver of growth, with construction output estimated to have increased by more than 141 percent in the first three quarters of the year.

Gaza has experienced a high rate of growth in 2011, driven primarily by the construction sector, and leading to a reduction in unemployment rates. A forthcoming World Bank report assesses the potential for job creation through infrastructure investments in the MENA region and finds that infrastructure investment can not only serve as a potential source of immediate jobs, but also boost long-term growth and employment, in addition, spending on construction of roads and bridges is found to generate more than twice as many direct jobs as the same amount of spending in any of the other infrastructure sectors, with construction of water and sewage infrastructure as the second most job-intensive activity relative to spending. (World Bank, 2012).

The other important factor that affect the performance of the Palestinian economy is foreign aid, foreign or international aid can be defined “as a voluntary transfer of resources or liquid money, equipment or services from one country to another, given at least partly with the objective of benefiting the recipient country” (Todaro, 2008).

Aid received by the Palestinian people can be classified within the international community policy aimed to finance peace-making in the region, as an evidence, before the signing of the Oslo agreement the international aid was modest compared to the post-agreement, this indicates that economic development is not the main objective of aid to poor countries, it is subject to politic considerations rather than development (Lazensky, 2006). This initial financial support was developed subsequently even further, it came to be referred to as peace dividend in the literature of supporters of the peaceful settlement to the Arab Israeli conflict and push the coexistence forward. The total of 2.4 billion dollar was committed to PNA began to flow after three months of Washington donor’s conference, this aid allocated to the reconstruction and developing the Palestinian economy and the destroyed infrastructure in the five years plan after Oslo agreement took place (Mas, 2005).

6 Statistical analysis and results. In order to test the research hypothesis, (The impact of construction sector on GDP and construction sector VAD growth, is affected by the amount of foreign aid gross investment). Literature review showed that, generally there is a positive relationship between the construction sector and national economy, Palestinian construction sector is not exceptional. It was very difficult to collect data regarding investment and foreign aid to the construction sector, if data were available, analysis will be more accurate, to overcome data problem, gross time series data for the period 1995 - 2011 was collected and analyzed to show the impact of construction sector (independent variable) on the dependent variables that’s, (Construction VAD and GDP Growth). Regression analysis will be made separately for Palestinian territories presented by Palestine and for Gaza Strip using the statistical program EViews.

Regression Analysis for variables affecting GDP (Palestine)

Stepwise regression used, and obtain the following results:

Adjusted determination coefficient, R-Square = 0.794. This means 79.4% of the variation in Palestine GDP is explained by foreign Aid and investment.

The Analysis of Variance for the regression model shows that F-statistic =33.68 with Sig. <0.0001, so there is a significant relationship between the dependent variable Palestine GDP and both of the independent variables is explained by foreign Aid and Investment in Palestine.

Table (3) shows the regression coefficients and their P-values. Each of the independent variables is statistically significant since the p-value is smaller than 0.05 level of significance. In addition, based on the t-statistic, the most significant independent variable is the total Aid because t- value associated with total Aid is greater than that for Investment in Palestine. The estimated regression equation is:

$$\text{GDP (Palestine)} = 743.5909 + 0.785996 * \text{AID} + 2.182235 * \text{INV}$$

Table (3): The Regression Coefficients for GDP (Palestine)

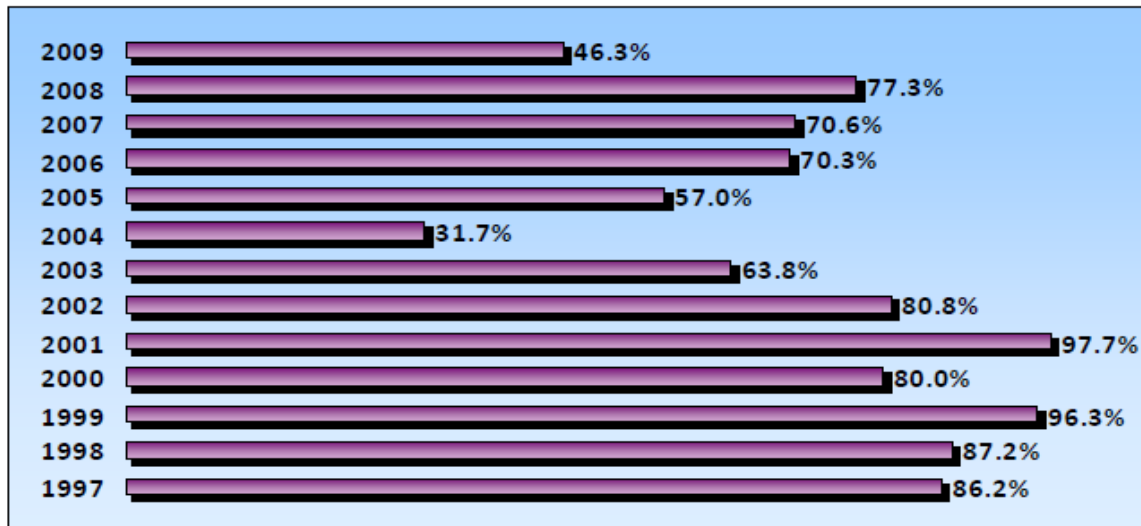
Variable	Coefficient	Std. Error	t-Statistic	P-value
(Constant)	743.5909	489.2700	1.519797	0.1494
AID (Palestine)	0.785996	0.132627	5.926385	0.0000*
INV (Palestine)	2.182235	0.376226	5.800335	0.0000*

* The variable is statistically significant at 0.05 level

Assessing the Assumptions of the Regression Model (Ordinary Least Squares (OLS) Assumptions)

- Based on White test for testing Homoskedasticity, N*R-squared Test = 9.176871 with p-value equals 0.0102 which is greater than 0.01 05 level of significance, and then the assumption of Homoskedasticity is satisfied.
- For testing normality assumption, Jarque-Bera test equals 2.77 with p-value 0.25, which is greater than 0.05 level of significance, then assumption of normality is satisfied.
- For testing uncorrelated residuals assumption, Breusch-Godfrey Serial Correlation LM Test equals 4.09 with p-value 0.1294, which is greater than 0.05 level of significance, then assumption of uncorrelated residuals is satisfied.
- We use Variance Inflation factor (VIF) to check the Multicollinearity among the independent variables. Multicollinearity exists if VIF is greater than 10. In this case VIF equals 1.000434, so the problem of Multicollinearity does not exist.
- Therefore, the OLS assumptions are satisfied.

Statistical results shows that 79.4% of the variation in Palestine GDP is explained by Aid and investment, this is true because of many economic and political difficulties, Palestinian people depends highly on foreign aid, table (7), clearly show the value of foreign aid is continuously increasing in term of the GDP, international aid disbarments to Palestinians totaled around US\$ 20.4 Billion between 1993 – 2011, this size of foreign aid will increase the significance of aid to the economy. Foreign aid is slightly more significance than investment to GDP because, the amount of foreign aid according the Palestinian Ministry of Planning and International Cooperation 2001, estimates that about 3.8 Billion US\$, allocated to the reconstruction and developing the Palestinian economy (infrastructure, social sector, institution building and others). The outbreak of the intifada 2000-2005, State of Israel imposed many restriction policies against Palestinian economy, caused lower and fluctuated GDP growth rate and higher rate of unemployment and poverty rates, according to these condition most of foreign aid become humanitarian and budget support aid. The ration of development aid to emergency aid was 7:1 before intifada and shifted to 1:5 (MAS 2005). Government use aid for budget support and to pay salaries to the government employees and current expenditures, these incomes and expenditures will increase the aggregate consumption, thousands of government employees will be able to receive bank loans to be used in building new houses and other things related to construction sector, all such activities will cause positive impact on the GDP, in addition, part of foreign aid used to finance development projects .figure (1) present the percentage budget support to foreign aid. It's important here to mention that investment is very important factor that lead to GDP growth, the 79.4% of the variation in Palestine GDP is explained almost equally between foreign Aid and investment. **Figure (1): Percentage of budget support to foreign aid 1997 – 2009**



Source: MOP and ministry of finance data

Regression Analysis for variables affecting construction Value added in Palestine.

We use Stepwise regression, and obtain the following results:

Adjusted determination coefficient, R-Square = 0.770. This means 77.0% of the variation in construction value added in Palestine is explained by foreign aid and investment.

The Analysis of Variance for the regression model shows that F-statistic =29.39 with Sig. <0.0001, so there is a significant relationship between the dependent variable construction value added in Palestine and both of the independent variables is explained by aid and investment.

Table (4) shows the regression coefficients and their P-values. Each of the independent variables is statistically significant since the p-value is smaller than 0.05 level of significance. In addition, based on the t-statistic, the most significant independent variable is investment because t- value associated with investment is greater than that for aid in Palestine. The estimated regression equation is:

$$\text{Construction Value added (Palestine)} = -380.6900 + 0.072437 * \text{AID} + 0.502256 * \text{INV}$$

Table (4): The Regression Coefficients for Construction Value added (Palestine)

Variable	Coefficient	Std. Error	t-Statistic	P-value
(Constant)	-380.6900	91.39754	-4.165211	0.0008
AID (Palestine)	0.072437	0.024775	2.923767	0.0105*
INV (Palestine)	0.502256	0.070280	7.146463	0.0000*

* The variable is statistically significant at 0.05 level

Assessing the Assumptions of the Regression Model (Ordinary Least Squares (OLS) Assumptions)

- Based on White test for testing Homoskedasticity, N*R-squared Test = 3.59 with p-value equals 0.1657 which is greater than 0.01 05 level of significance, and then the assumption of Homoskedasticity is satisfied.
- For testing normality assumption, Jarque-Bera test equals 4.66 with p-value 0.098, which is greater than 0.05 level of significance, then assumption of normality is satisfied.
- For testing uncorrelated residuals assumption, Breusch-Godfrey Serial Correlation LM Test equals 5.20 with p-value 0.0741, which is greater than 0.05 level of significance, and then assumption of uncorrelated residuals is satisfied.
- We use Variance Inflation factor (VIF) to check the Multicollinearity among the independent variables. Multicollinearity exists if VIF is greater than 10. In this case VIF equals 1.000434, so the problem of Multicollinearity does not exist
- Therefore, the OLS assumptions are satisfied.

Measuring effects of the independent variables on construction value added, gross investment is more significance than foreign aid, so whenever there is an increase in investment we expect there must be an increase in construction value added. In this context foreign aid also significance, but much lower than investment, this result support the economic controversial that foreign aid is very important to Palestinian people, but unfortunately the foreign aid don not lead to sustainable economic growth, because as

mentioned before that more than 90% of foreign aid goes to support government budget and humanitarian aid.

Regression Analysis for variables affecting GDP (Gaza)

We use Stepwise regression, and obtain the following results:

Adjusted determination coefficient, R-Square = 0.380. This means 38.0% of the variation in Gaza Strip GDP is explained by foreign aid and investment.

The Analysis of Variance for the regression model shows that F-statistic =6.21 with P-value equals 0.0108, so there is a significant relationship between the dependent variable GDP (Gaza) and both of the independent variables is explained by foreign aid and Investment .

Table (5) shows the regression coefficients and their P-values. Each of the independent variables is statistically significant since the p-value is smaller than 0.05 level of significance.

In addition, based on the t-statistic, the most significant independent variable for Gaza Strip is investment because t- value associated with investment is greater than that for aid, The estimated regression equation is:

$$\text{GDP (Gaza)} = 820.5611 + 0.777543 * \text{AID} + 0.669686 * \text{INV}$$

Table (5): The Regression Coefficients for GDP (Gaza)

Variable	Coefficient	Std. Error	t-Statistic	P-value
(Constant)	820.5611	144.1282	5.693272	0.0000
AID (Gaza)	0.777543	0.375992	2.067976	0.0282*
INV (Gaza)	0.669686	0.300752	2.226703	0.0209*

* The variable is statistically significant at 0.05 level

Assessing the Assumptions of the Regression Model (Ordinary Least Squares (OLS) Assumptions)

- Based on White test for testing Homoskedasticity, N*R-squared Test = 7.935543 with p-value equals 0.0189 which is greater than 0.01 05 level of significance, and then the assumption of Homoskedasticity is satisfied.

- For testing normality assumption, Jarque-Bera test equals 1.046 with p-value 0.593, which is greater than 0.05 level of significance, then assumption of normality is satisfied.

- For testing uncorrelated residuals assumption, Breusch-Godfrey Serial Correlation LM Test equals 1.008684 with p-value 0.6039, which is greater than 0.05 level of significance, then assumption of uncorrelated residuals is satisfied.

- We use Variance Inflation factor (VIF) to check the Multicollinearity among the independent variables. Multicollinearity exists if VIF is greater than 10. In this case VIF equals 1.070644, so the problem of Multicollinearity does not exist. Therefore, the OLS assumptions are satisfied.

Results shows that investment and foreign aid are both significance to Gaza Strip GDP, that's mean, 38.0% of the variation in Gaza Strip GDP is explained by foreign aid and investment. in the case of Palestine GDP aid was more significance than investment, here, in Gaza Strip there is an opposite result, were investments are more significance than aid. Figure (1) showed that most of foreign aid given to Palestinians came in form of budget support, constituting about 72.7% of total foreign aid during 1997 – 2009, which implies that aid to

Palestinians are consumed and not invested. since more than 90% of aid goes for government budget support and humanitarian aid, the critical economical situation of higher poverty and unemployment in Gaza Strip explain the largest amount of aid is humanitarian and this aid increased during periods of closures. Figures (2) and (3) can clearly explain this situation.

Figure (2): Uses of distributed foreign aid during 2005-2009

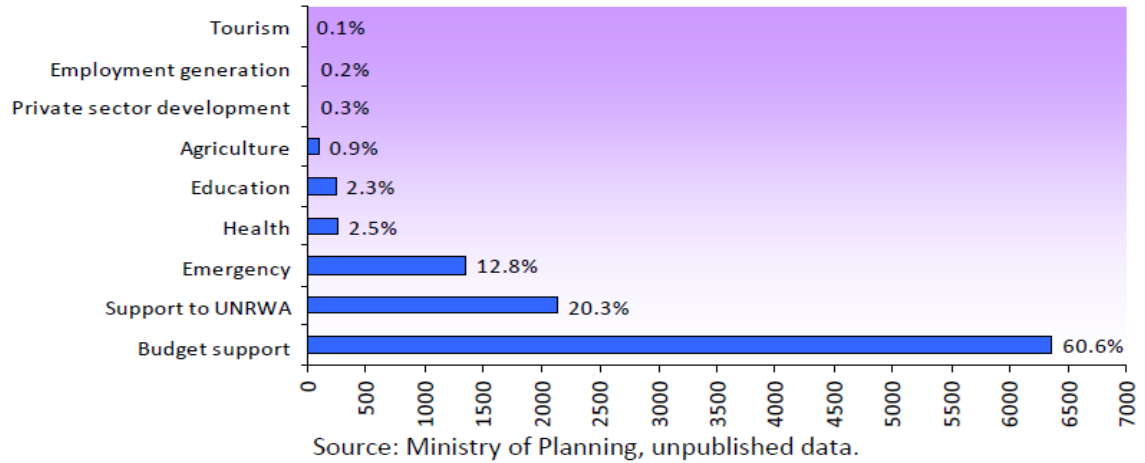
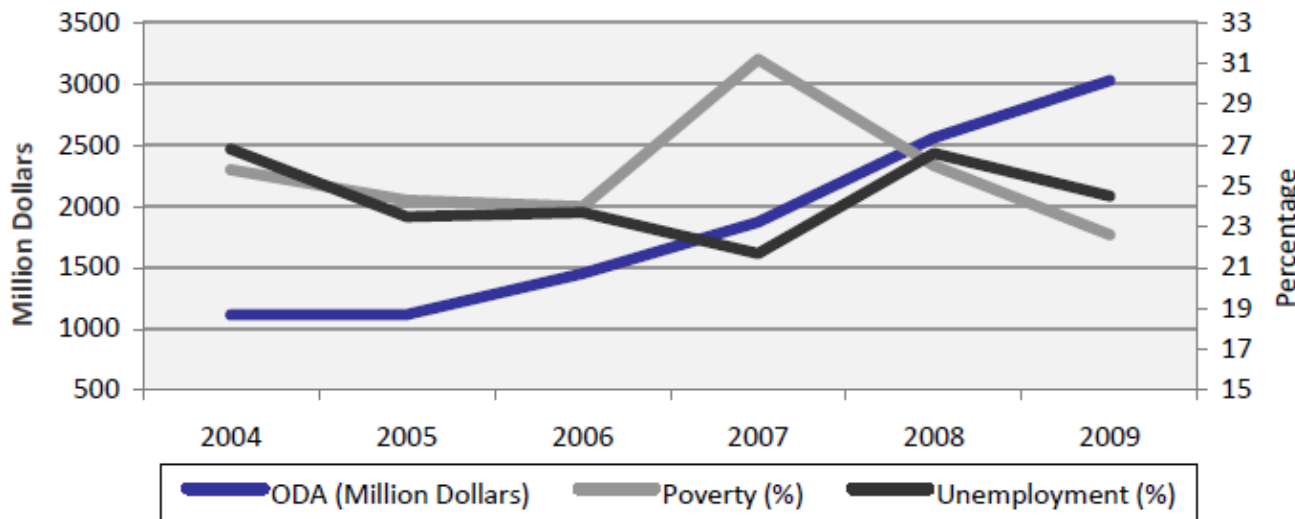


Figure (3): ODA, unemployment and poverty rates 2004-2009



Regression Analysis for variables affecting Value added (Gaza)

The assumption of normality is not satisfied, Jarque-Bera test equals 32.31 with p-value <0.0001, which is smaller than 0.05 level of significance. We use Log transformation for the value added to achieve normality. After transformation, Jarque-Bera test equals 0.339 with p-value 0.8442, which is greater than 0.05 level of significance

We use Stepwise regression, and obtain the following results:

- Foreign aid (Gaza) variable is not significant; p-value equals 0.6759 which is greater than 0.05 level of significance.
 - We perform simple regression for Log of construction Value added on foreign aid (Gaza). The determination coefficient, R-Square = 0.012387. This means 1.2% of the variation in construction value added is explained by foreign aid (Gaza).
 - We perform simple regression for Log of construction Value added on investment (Gaza) and obtain the following results:
 - Determination coefficient, R-Square = 0.487. This means 48.7% of the variation in construction sector construction value added is explained by investment (Gaza)
- Table (6) shows the regression coefficients and their P-values. Investment (Gaza) is statistically significant since the p-value is smaller than 0.05 level of significance.

The estimated regression equation is:

$$\text{Value added (Gaza)} = 3.456793 + 0.002733 * \text{INV (Gaza)}$$

Table (6): The Regression Coefficients for Value added (Gaza)

Variable	Coefficient	Std. Error	t-Statistic	P-value
(Constant)	3.456793	0.247289	13.97876	0.0000
INV (Gaza)	0.002733	0.000660	4.141735	0.0008*

* The variable is statistically significant at 0.05 level

Assessing the Assumptions of the Regression Model (Ordinary Least Squares (OLS) Assumptions)

- Based on White test for testing Homoskedasticity, N*R-squared Test = 0.390444 with p-value equals 0.5321 which is greater than 0.01 05 level of significance, and then the assumption of Homoskedasticity is satisfied.
- For testing normality assumption, Jarque-Bera test equals 4.66 with p-value 0.098, which is greater than 0.05 level of significance, then assumption of normality is satisfied.
- For testing uncorrelated residuals assumption, Breusch-Godfrey Serial Correlation LM Test equals 0.530466 with p-value 0.7670, which is greater than 0.05 level of significance, and then assumption of uncorrelated residuals is satisfied. Therefore, the OLS assumptions are satisfied.

since foreign aid variable is not significant; and the p-value equals 0.6759 which is greater than 0.05 level of significance, this evidence prove again that most of aid supported by donors countries do not lead to sustainable economic growth, the insignificant value of foreign aid means also, job creation and decreasing the unemployment rate will not be able to achieved successfully by Palestinian contractors because of the low profit opportunities.

7 Conclusions and Recommendations:

In summary, the performance of Palestinian economy fluctuated throughout the study period, construction sector share to GDP dropped from 9.6% in 1994 to 3.3% 1n 2009, the partial removal of border restriction on Gaza Strip increased the share of the sector to 11% in 2011.

statistical analysis proved the vital role of gross investment to the economy, investment has a positive significant correlation with the growth rate of GDP and construction VAD for the Palestine economy and the case study area (Gaza Strip). the above finding indicate that investment in the construction sector would be a major generating of income and jobs for skilled, semiskilled and unskilled labour force. Its recommended that government and financial sectors must support and increase the role of the private sector in the economy.

Statistical results showed that foreign aid was more significant than investment to GDP growth in Palestine, but smaller than investment in Gaza Strip. in term of construction VAD, foreign aid was less significant than investment, in other words, changing in construction value added is attributed mainly to investment. Foreign aid was insignificant in Gaza Strip results. It is very important to mention in this situation that foreign aid is vital and critical to the economy. To gain the fruitful benefits of foreign aid Palestinian National Authority must move towards economic development programs, by negotiating and convincing the donor countries the critical need of aid for economic development, meanwhile donor countries must understand that aid for economic development much better than aid for poetical situation. This process will help GDP growth and thus creating more jobs and poverty alleviation.

Construction sector depend mainly on imports of cement, gravel, iron and most of other materials, during periods boarder closures, the quantity of imports sharply decrease, this situation causes the prices of construction materials increase sharply with excess demand and shortage supply, the cost of production increase sharply, many firm lay of labour, this is a critical factors and drivers of contract terminations. In reality there is a critical need to open the boarders and allowing Palestinian importers to import freely without any restriction from any party the construction materials and other materials from any country in the world.

Table (7)

Year	Total AID/Pales **	INV/Pales	GDP/Pales	Construction VAD/Pales	INV/Gaza	GDP/Gaza	Construction VAD/Gaza
1994	460	943.3	3038.4	218.6	316.5	1083.4	103.50
1995	498	955.3	3212.4	173.9	334.9	1110.7	66.10
1996	548	1037.9	3292.8	225.8	370.7	1128.9	94.20
1997	603	1173.4	3744	236.2	409.3	1251.1	80.80
1998	607	1368.6	4197.7	303.5	439	1379.8	108.7
1999	516	1857.4	4534.9	526.1	515.9	1385.8	150.5
2000	637	1386.7	4146.7	298.4	398.5	1218.7	98.4
2001	869	992.3	3810.8	161.1	266.5	1194.8	62
2002	863	841.7	3301.4	94.4	262.1	1067.4	32.3
2003	972	1063	3800.5	144	393.7	1348.6	48.7
2004	1161	1022.3	4198.4	238.4	362.9	1391	88.6
2005	1118	1265.7	4559.5	310.2	463.4	1682.8	130.1

2006	1452	1347.2	4322.3	312.3	566.4	1344.6	94.7
2007	1873	1122.9	4554.1	299.1	169.5	1236.9	72.6
2008	2562	1060.5	4878.3	314.4	102.7	1161.6	40.5
2009	3026	1137.3	5241.3	387.7	49.2	1169.8	38.5
2010	1589	1455.2	5754.3	557.9	423.98	1504.8	121.1
2011	1467	1580.6	6323	708.2	458.4	1850.6	260.8

Source: www.pcbs.gov.ps

** Palestinian Ministry of Planning and International Cooperation.

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