# The Determinants of Private Construction Investment in Jordan: An Empirical Study (1972-1996)

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## Abstract

The purpose of this paper is to empirically investigate the impact of the Jordanian government investment on construction activities along with a set of economic variables on construction sector investment. The empirical results showed a positive but statistically insignificant impact of government investment in construction on construction sector investment. Since the elasticity of government investment variable is less than one, the result indicates that government investment does not completely crowd-in construction sector's investment. It only increases the construction sector investment by 0.113 of the change in government expenditures on investment activities. The rest of the explanatory variables showed a positive and a significant impact on construction investment.

# I. Introduction

**T**he issue of the determinants of private investment has attracted a considerable volume of economic literature in terms of theoretical and empirical prospective during the last three decades. Among the set of the determinants of interest is the government capital formation (investment). The considerable absolute and relative size of government capital expenditures has become the source of great concern to economists, policy-makers and the public. There are many reasons for all people involved to be concerned. Among them is the possibility that government spending will have an adverse impact on private investment activities. This concern must be regarded as the most important, because of policy implications for lower growth and living standards in the future (Valintino 1990, p339). In sum, the central point of this concern lies on the question whether or not government capital spending "crowds-out" private investment.

**T**his paper addresses a set of economic variables that are expected to influence investment activity of private construction sector. Its purpose is mainly to empirically investigate the quantitative impact of government capital expenditures on construction activities on the Jordanian private construction sector investment. The importance of this paper arises due to the controversy on the crowding-out effect of government capital expenditures on private sector investment and the construction sector in particular. To investigate the quantitative influence of government capital expenditures on construction activities along with a set of other variables (that are expected to have influence) on the private construction sector investment, a multiple regression model is utilized to achieve this task. The Ordinary Least Squares technique (OLS) is used to obtain the estimated parameters of the independent variables. The data on variables included in the model were obtained from Central Bank of Jordan Bulletins and the publications of department of statistics.

**T**his paper is in six parts: part one is the introduction, part two provides an overview of construction sector in Jordan, part three presents a review of literature on factors influencing the private construction sector investment, part four describes the economic model used to investigate the determinants of private construction sector investment, part five presents the analysis of the empirical results, and part six concluded the paper and provides policy implication.

# 2- The Jordanian Construction Sector

The study of the private construction sector over the study period can be traced out through two major indicators. First, through its contribution to Gross Domestic Product (GDP) and employment opportunities. Second, through the number of building licenses issued, and the construction area.

Appendix (A-1) presents the contribution of construction sector to GDP measured in millions of Jordan Dinars as a percentage of GDP, and the percentage change of construction sector contribution over the study period. The growth rate of value added of construction sector over the 1968-1997 equals 12.9%, where the value added increased from JD 9.7 millions in 1968 to JD 368.3 millions in 1997. The construction sector can be better viewed by investigating its performance over the sub-periods as in table (1). _

Table (1): The growth rate and the %Δ of Employment and output in cons. sector

| | **output** | | | **employment** | | |
|---|---|---|---|---|---|---|
| | **construction** | | **GDP** | **construction** | | **total** |
| period | Average | %Δ | % | Average | %Δ | %Δ |
| 1973-1968 | 6.01 | -0.88 | 5.73 | 9.28 | 3.14 | 2.75 |
| 1974-1983 | 8.6 | 28.58 | 19.8 | 11.8 | 4.9 | 3.4 |
| 1984-1990 | 5.9 | -6.73 | 4.34 | 10.6 | -0.22 | 1.9 |
| 1991-1997 | 6.54 | 16.59 | 10.12 | 9.4 | 10.4 | 11.5 |
| 1968-1997 | 6.98 | 12.9 | 11.95 | 10.5 | 4.98 | 4.9 |

source: calculated using data in Appendix (A-1) & Appendix (A-2)

**N**ote that construction sector contribution to the GDP showed an increasing pattern over the periods 1975-1983 and 1990-1993. This pattern was due to the sizable volume of remittances of the Jordanian working in oil rich countries in both periods which was spent mainly on construction activities. In addition, the second period witnessed the Gulf War in 1990 which resulted in a large influx of Jordanian with their families working in Gulf countries mounted up to 300,000 people (approximately 10% of total population).

**A**ppendix (A-2) presents the employment pattern of the construction sector and its contribution to the total employment in Jordan economy. The employment opportunities in the sector fluctuated over the study period reflecting the changing pattern in construction output. Employment increased from 23.9 thousands in 1968 to 97.9 thousands in 1996, with a compound growth rate equals 10.5% as shown in table (1). The contribution of the sector to employment as a percentage of the total working force in the economy was the highest during the 1978-1982 period at an average of 12.5%. This high percentage was due to the increased flow of remittance resulted in an increase in demand for construction activities. Once again in 1992 the percentage was high after a continuos decline due to Gulf War resulted in the considerable volume of remittances and a sudden increase in population of Jordan. This event put tremendous pressure on the construction sector to meet the excess demand for construction activities. Table (1) also shows the development of employment opportunities over the sub-periods of the study period. It can be noticed that the 1974-1984 period achieved the highest growth rate.

**A**ppendix (A-3) presents data on both the total construction area measured in thousands of squared meters and the number of construction license issued in Jordan between 1968 and 1997 period. One can notice that total constructed area has fluctuated over the study period, where it increased from 392.5_$M^2$ in 1968 to 4496.9 $M^2$ in 1997 with a compound growth equals 8.5% over the period. Meanwhile, the construction area for residential purpose only and other purposes achieved a compound growth rate equal to 8.9% and 7.1% consequently. The number of construction licenses issued provides another indicator of the construction sector performance. Like the total construction area, the number of licenses varied over the 1968-1997 period. The number of licenses issued increased from 3685 licenses in 1968 to 14838 licenses in 1997, recording an annual growth rate equals 4.7. Meanwhile, the number of licenses for residential purpose only and other purposes achieved a compound growth rate equal to 4.9% and 3.7% respectively

**Table** (2) shows the growth of total area and number of licenses over the whole and the sub-periods of the study period. Regarding area of construction, the 1968-1973 period showed that most of the construction activities were directed towards residential purposes, with a positive growth rate, while other purposes showed a negative growth rate. On the other hand, the 1974-1983 period achieved a high growth rate in construction activities equals 19.3%.

Table (2): The growth rate and the %Δ of Area and # of licenses

| | Area | | | # licenses | | |
|---|---|---|---|---|---|---|
| period | **Total** | **Residential** | **Others** | **Total** | **Residential** | **Others** |
| 1973-1968 | 10.2 | 10.6 | -3.8 | 4.3 | 1.5 | 4.7 |
| 1974-1983 | 19.3 | 19.3 | 19.2 | 6.7 | 1.5 | 7.5 |
| 1984-1990 | -1.45 | -0.6 | -9.11 | 7.3 | -18.9 | 8.4 |
| 1991-1997 | 0.4 | -2.5 | 35.4 | -2.1 | 51.7 | -0.37 |
| 1968-1997 | 8.5 | 8.9 | 7.1 | 4.7 | 3.7 | 4.9 |

source: calculated using data in Appendix (A-3)

Contrary to the 1974-1983 period, in the 1984-1990 period the construction sector witnessed a negative growth rate in all types of construction area activities. This situation was due to the worldwide economic turndown. The growth rate of licenses issued fluctuated over the period of study following the pattern of the area of construction.

## 3- Review of Literature

Construction sector in Jordan has been the focus of interest of economists and the public for its important role in Jordan's economy. The literature focuses to a large degree on the estimation of the production function of the construction sector (Hammad, 1994b; Bani-Hani and Shamia, 1989; Al-Jalodi, 1996). Their work tried to estimate the construction's output elasticities with respect to factors of production (labor and capital) and the impact of technological change. Another focus of interest concentrated on the determinants of the demand for construction activities in Jordan (Abdelrazag and Mansur, 1996, Tawfiq 1987, Al-Fandi 1990, Al-Rawabdeh, 1988, Nadir 1997, Jalodi 1998, and Awasherah 1994). Another approach focused on estimating construction multiplier (Servet and Mrayan 1987, Malkawi and Otum 1998).

The only work that discussed the determinants of construction activities in Jordan (to the best of my knowledge) is the work of Hammad (1994a). However, the analysis of his work was mainly based on theoretical and descriptive approach over the 1972-1993 period. Therefore, it is obvious that the issue of the

determinants of the construction sector investment was not discussed by the work mentioned above. However, in general, there was a considerable work on the impact of government capital expenditures on capital investment in the private sector in the economy (Ashuaer, 1989, 1985; Buiter, 1977; kormedi, 1983; Vector, 1982; Vitaliano, 1990).

In his (1998) study, Al-Badry constructed a private investment function in Jordan, using a time series data over (1968-1994) period. The private investment, government investment, exports, and credit variables, were as a ratio of GDP. His findings showed a negative impact of real interest rate, real exchange rate, and government investment (crowding-out effect). While exports, the growth rate of real GDP and the credit facilitating have a positive impact on the private investment. Moreover, the explanatory variables have a significant impact on private investment in Jordan as shown by the t-ratio.

Hussein & Mahmoud (1997), investigated a private investment function for the Egyptian economy over the 1960-1990 period. The private investment as a ratio of income is used as the dependent variable. The investment function is influenced by a set of macro-economic variables, such as real interest rate, real GDP, the ratio of public investment to income. The empirical results showed that private investment is negatively influenced by the real interest rate and positively by both real GDP and public investment. The positive impact of public investment indicates that public investment does not crowd-out private investment. In fact a complementary ration can be assumed between them, which implies that increasing public investment increases private investment.

# 4- Theoretical Framework

According to economic theory there are three major types of investment: First, residential construction investment, which reflects the use of investment by homeowners. Second the changes in business inventories. This type of investment is characterized to be the most volatile component. Firms happened to use changes in business inventories as buffers against variations in the sale of goods and services. Changes in business inventories are very sensitive to the overall level of economic activity, especially to fluctuations in aggregate demand. Finally, fixed business investment includes expenditure on nonresidential construction and producers' durable equipment.

In this section, the author tries to construct a theoretical framework to explain the role of set of variables that affect the private construction sector investment construction sector investment is expected to be influence by a set of economic variables described as the following:

According to economic theory, Gross Domestic Product (GDP) influences private construction investment. The growth rate of gross domestic product (Yg) is taken into analysis and is expected to have a positive impact on the level of the private construction sector investment. This expectation is due to the positive relation between income and investment according to the acceleration principle.

**A**nother factor that has an influence on private construction investment is the flow of remittances, since the flow represents an increase in personal income which in turn increases the purchasing power of durable goods, which constitutes an increase in aggregate demand. The remittances ***(RT)*** variable is expected to have a positive influence on the private construction sector investment level. This positive relation is due to the fact that a high portion of remittances of expatriates is directed to real estate activities, (Saket, 1986, 1984; Share, 1991, 1987, and Zaglul, 1986). Zaglul (1986) found a positive linear relation (the estimated coefficient equals 0.52) between the volume of remittances and the aggregate investment. Since construction investment is considered to be one of the aggregate investment expenditure components, it is affected by the volume of remittances. Therefore, the increased demand put pressure on construction sector to increase the supply of construction in order to meet the increased demand for apartments and housing.

The real interest rate plays a crucial role in the behavior of investment function, since it reflects the cost of investment. The real interest rate variable **(RR)** is expected to have a negative impact on investment. This negative relation can be explained through the following: an increase in the interest rate increases the real cost of loans and depreciates the stock value. The influence of real interest rate can be seen through its impact on the expected profit. The greater the real interest rate is the smaller the expected profit, and hence, the lower the private investment will be.

**T**he banks' credit plays an important role in the performance of the private construction sector by providing the necessary fund. This variable ***(BC)*** is expected would have a positive impact on private construction sector investment.

**A**s for the government capital expenditure (government investment) on construction activities variable ***($G_I$)***, it is expected to have a positive influence on private construction sector investment, since most if not all construction activities demanded by government are executed by private construction sector. The sign of this variable would provide us with information on the crowding-out effect of government investment, a positive sign meanthat government spending crowds-in while the negative means that government investment crowds-out private construction sector investment.

The Jordanian population grew at annual Average rate of 3.5% and it is considered one as of the highest growth rate in the world (Hammad, 1994a). The increasing rate of population puts a demand pressure not only on the construction sector to supply the required construction activities on housing and other uses, but also on the infra-structure. **T**he population variable ***(POPg)*** is expected to have a positive impact on private investment in construction activities. This is due to the fact that the increase in population size causes an increase in the demand for housing units.

**F**or the last fifty years the region witnessed several unrest periods due to Arab-Israeli conflict and the Gulf crises. This course of action resulted in a political and an economic unrest. Jordan's economy, in general, and the construction sector in particular experienced major waves of economic fluctuations during periods of unrest. The dummy variable ***(D1)*** which is used to reflect the political stability in Jordan and within the region. During the unrest periods the demand for construction declines and hence the supply by firms decline accordingly and the opposite happened in periods of stability. The dummy variable is expected to have a negative impact since it takes the value one ***(D=1)*** in periods of unrest and zero otherwise.

**A** time series data collected over the period (1966-1994). Suggested that all variables were real and in logarithmic form. Private construction sector investment is measured by the gross capital formation in that sector. The variables were deflated by the consumer price index where the year 1992 is the base year.

## The Econometric Model and Variable description

**I**n this section the author will deal with the impact of government (public) investment on construction activities along with other set of economic variables on the private construction sector investment. Mainly, the purpose of this section is to

construct an economic model to investigate empirically along with a set of variables whether or not government investment expenditures are substitute or complementary to private investment the field of construction activities. In other words, does government construction investment crowd-out or does it crowd-in private construction investment. In general, according to the economic theory, there is a kind of a relationship between government investment spending and private capital formation; and this relationship is a controversial one. Some of the most recent economic research on this topic support the negative impact of government investment on private investment, while others support the positive impact; and some support the neutrality of government investment.

**A** macro-economic model is designed to investigate the quantitative impact of government capital formation (government capital spending) along with other factors on construction activities on private construction capital formation (investment). The econometric tools that we have emphasized include a multiple regression estimation. The model consists of a single equation describing factors that are expected to have an influence on private construction sector investment ***($P_I$)*** as follows:

$$P_I = I(Yg, RT, ,(gec)\ BC, POPg, RR, D_1, P_{I-1}, ) \qquad (1)$$

where:

***Yg*** is the growth rate of gross domestic product.

***RT*** is the flow of remittances.

***BC*** is the banks' credit.

***POPg*** is the population growth rate.

$D_1$ is a dummy variable for political stability (D=1 unrest period, zero otherwise).

**RI** real interest rate.

**GEC** government investment spending on construction activities.

$P_{I-1}$ the lagged variable of the private investment.

The private investment in construction sector (the dependent variable) is measured as the gross fixed capital formation of construction. The real interest rate variable is calculated as $(i_d-\pi^e)$, where $i_d$ is the nominal interest rate on banks' loans

and $\pi^e$ is the expected rate of inflation. Since we assuming the rational expectations, the expected rate of inflation is equal to its actual value. The government investment is calculated as the difference between government total expenditures and government consumption (GE-GC). Al-Zu'bi and Adainat (1997), revealed that government investment equals to 52% of government capital spending, and hence, using government expenditures to represent government investment involves a bias in estimating the impact of government investment on the selected variables. Therefore, to be more accurate, the author will be using government investment spending on construction and real estates activities to represent the government investment spending variable (GEC). The (GEC) variable values was taken from Al-Zu'bi and Adainat (1997) for the 1976-1991 period. The rest of the targeted period was calculated by subtracting the spending on real estate from total spending on land and construction, the value of land for the rest of the period was estimated using the compound growth rate of land spend over the 1976-19991 period which equals to 7.7%. The variable RT is the flow of remittances from Jordanians abroad which can be considered as saving. The credit availability variable is taken credit banks offer to construction sector.

## 5- The Analysis of the Empirical Results

Before starting the estimation process, it is necessarily to point out the problem of data limitation.

***First***:: As for data on investment variable in construction sector, the updated data published by CBJ is up to year 1996.

***Second***: Including all suggested independent variables led to the multicollinearity problem. Therefore, the step-wise method was utilized to choose the appropriate variables that affecting the investment function.

**The** empirical results of construction investment function as appearing in equation (1) are as follows:

$$\mathbf{LNIC=-3.55 + 0.078RI + 1.09\ LN\ POP + 0.34LNIC_{t-1} + 0.17GY + 0.113LNGEC} \quad \mathbf{(2)}$$

**(-3.6) (2.65) (5.03) (3.5) (4.7) (0.76)**

**$R^2$= 0.97, Adjust. $R^2$= 0.96, F - ratio = 103.6 DW=1.73**

Equation (2) illustrates the quantitative impact of the set of the economic variables on the private investment in construction as a ratio of GDP. The estimation results show that all independent variables have the expected positive sign and the significant impact on construction sector investment. The variables included in the model explain 97% of the variation in the private sector investment as can be seen from the value of the coefficient of determination $R^2$, and the F-Ratio indicates that the overall model is significant. The estimation process is free of the Autocorrelation problem as the DW coefficient indicates.

The elasticity of construction investment with respect to GDP growth variable of is 0.17, and that a 1% increase in the GDP growth increases construction investment by 0.17%; that is to say construction investment is positively related to GDP growth but this relation is not one-to-one bases, construction investment increase is less than GDP increase. In economic jargon it means that construction investment is inelastic with respect to the growth of income. Real interest rate is expected to have a negative impact on investment demand function as the economic theory reveals, since the rate of interest is the cost of borrowing funds. However, the results show that real interest variable has a positive and significant impact on construction investment. A 1% increase in the real interest rate will cause a 0.078 increase in the construction investment. This result would assert that interest rate is a complementary.

Equation (2) incorporates the impact of government investment on construction investment. The regression results show that government investment has a positive and insignificant impact on construction investment. This result indicates that government expenditure and the construction investment are complements. The elasticity of construction investment with respect to government investment is 0.113. Therefo, a 1% increase in GEC increases construction investment by 0.113%.

The crowding-out concept means that government expenditures crowds-out private investment; however, the results indicate that government expenditures have a net positive impact on construction investment. It is obvious that government investment does not crowds-out private construction investment, i.e the former is a complement for the latter. Therefore; GEC has a positive impact on aggregate demand which supports the keynesian's proposition that government investment increases the level of output.

Population plays a positive and a significant role in simulating the demand for construction, since the increase in population would put a pressure on the construction activities. The elasticity of construction investment with respect to the population is 1.09, which indicates that construction sector response to population variable is elastic, where a 1% increase in population will increase the construction demand by 1.09%. The lagged variable of the dependent variable has a positive and a significant impact on construction investment. Since investors in construction sector will make their expectation on the last period investment. A 1% increase in the last period investment would increase the current investment by a 0.34%.

# CONCLUSION

The purpose of this paper was to shed light on the determinants of the private construction sector investment function. The impact of government investment, measured as its capital expenditures on construction activity, as a determinant of the private construction sector investment function has been a controversial one. Economists are divided among themselves on the subject of the impact of government capital expenditure on the investment behavior of the private sector.

The argument for Jordanian private construction sector supports the notion of incomplete crowding-in effect of government spending on construction activities. The empirical results show that a 10% increase in government expenditure reduces the level of private investment by 1.13%, which is less than the percentage increase in government construction expenditures. This result would encourage government to increase its expenditures to stimulate the private sector investment on construction. The real interest rate proved to be a complement to the investment decision by private construction sector, which shows a positive relation between the two variables. This result contradicts the wisdom of the economic theory, where a negative relation between the two variables exists. As for the remaining

determinants, they show a positive and a significant impact on construction investment function.

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**Appendix (A)**

(A1)

The contribution of Construction Sector to GDP (JD. Mill)

| Year | Economy* | Const | % | %Δcons |
|---|---|---|---|---|
| 1968 | 189.6 | ٩,٧ | 5.12 | * |
| 1969 | 222.8 | 10.7 | 4.8 | 10.3 |
| 1970 | 211.8 | 7.7 | 3.64 | -28.0 |
| 1971 | 226.2 | 7.4 | 3.27 | -3..9 |
| 1972 | 251.6 | 9.2 | 3.66 | 24.3 |
| 1973 | 265.2 | 15.2 | 5.73 | 65.7 |
| 1974 | 300.4 | 16.8 | 5.59 | 10.53 |
| 1975 | 379.1 | 19.2 | 5.06 | 14.29 |
| 1976 | 512.1 | 44.1 | 8.61 | 129.96 |
| 1977 | 624.6 | 50.3 | 8.05 | 14.06 |
| 1978 | 767.9 | 69.5 | 9.05 | 38.17 |
| 1979 | 914.6 | 92.1 | 10.07 | 32.52 |
| 1980 | 1151.2 | 110.9 | 9.63 | 20.41 |
| 1981 | 1426..3 | 136.2 | 9.55 | 22.81 |
| 1982 | 1701.1 | 164.0 | 9.64 | 20.41 |
| 1983 | 1828.7 | 188.0 | 10.28 | 14.63 |
| 1984 | 1981.4 | 177.6 | 8.96 | -5.53 |
| 1985 | 2020.2 | 155.7 | 7.71 | -12.33 |
| 1986 | 2163.6 | 144.3 | 6.67 | -7.32 |
| 1987 | 2208.6 | 126.0 | 5.70 | -12.68 |
| 1988 | 2264.4 | 118.4 | 5.26 | -6.03 |
| 1989 | 2372.1 | 106.7 | 4.5 | -9.88 |
| 1990 | 2668.3 | 111.6 | 4.18 | 4.59 |
| 1991 | 2855.1 | 125.7 | 4.4 | 12.63 |
| 1992 | 2493 | 215.3 | 8.65 | 71.6 |
| 1993 | 3801.7 | 283.7 | 7.46 | 31.53 |
| 1994 | 4201.3 | 300.2 | 7.15 | 5.82 |
| 1995 | 4654.6 | 327.8 | 7.04 | 9.19 |
| 1996 | 5146.7 | 341.1 | 6.63 | 4.06 |
| 1997 | 5606.3 | 368.3 | 6.57 | 7.97 |

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(A-2)
The Employment level in construction sector (Ths)

| YEAR | Economy | Construction | % | Δ% |
|---|---|---|---|---|
| ١٩٦٨ | ٢٥١,٦ | ٢٣,٩ | ٩,٥ | * |
| ١٩٦٩ | ٢٥٥,٣ | ٢٤,٠ | ٩,٤ | ٠,٤ |
| ١٩٧٠ | ٢٥٨,٩ | ٢٣,٦ | ٩,١٢ | ١,٧- |
| ١٩٧١ | ٢٦٧,٨ | ٢٤,١ | ٩,٠ | ٢,١ |
| ١٩٧٢ | ٢٧٦,٩ | ٢٤,٧ | ٨,٩٢ | ٢,٥ |
| ١٩٧٣ | ٢٩٦,٠ | ٢٨,٨ | ٩,٧٣ | ١٢,٥ |
| ١٩٧٤ | ٣١٦,٤ | ٣٢,٥ | ١٠,٢٧ | ١٢,٨ |
| ١٩٧٥ | ٣٣٨,١ | ٢٦,٢ | ١٠,٧١ | ١٩,٤- |
| ١٩٧٦ | ٣٦١,٣ | ٣٩,٦ | ١٠,٩٦ | ٥١,١ |
| ١٩٧٧ | ٣٧١,٠ | ٤٣,٤ | ١١,٧ | ٩,٥ |
| ١٩٧٨ | ٣٨٠,٩ | ٤٧,٠ | ١٢,٣٤ | ٨,٣ |
| ١٩٧٩ | ٣٩١,١ | ٥٠,٨ | ١٢,٨٨ | ٨,٠ |
| ١٩٨٠ | ٤٠٥,٣ | ٥٠,٩ | ١٢,٥٦ | ٠,١ |
| ١٩٨١ | ٤١٨,٤ | ٥٢,٥ | ١٢,٥٥ | ٣,١ |
| ١٩٨٢ | ٤٣١,٨ | ٥٢,٦ | ١٢,١٨ | ٠,١ |
| ١٩٨٣ | ٤٤٥,٣ | ٥٢,٧ | ١١,٨٣ | ٠,٢ |
| ١٩٨٤ | ٤٥٨,٥ | ٥٢,٧ | ١١,٤٩ | ٠ |
| ١٩٨٥ | ٤٧٢,٣ | ٥٢,٠ | ١١,٠١ | ١,٣- |
| ١٩٨٦ | ٤٩٢,٥ | ٥٤,٢ | ١١,٠١ | ٤,٢ |
| ١٩٨٧ | ٥٠٩,٣ | ٥٣,٤ | ١٠,٩ | ١,٥- |
| ١٩٨٨ | ٥٢١,٨ | ٥٢,٢ | ١٠,٠ | ٢,٣- |
| ١٩٨٩ | ٥٢٣,٥ | ٥٠,٨ | ٩,٧ | ٢,٧- |
| ١٩٩٠ | ٥٢٤,٢ | ٥١,٩ | ٩,٩ | ٢,٢ |
| ١٩٩١ | ٥٢٥ | ٥٤ | ١٠,٣ | ٠,١ |
| ١٩٩٢ | ٦٠٠ | ٦٠ | ١٠ | ١٤,٣ |
| ١٩٩٣ | ٨٥٩,٣ | ٦٠,٢ | ٧ | ٤٣,٢ |
| ١٩٩٤ | ٩٤٩ | ٩٠,١ | ٩,٥ | ١٠,٤ |
| ١٩٩٥ | ٩٦٠ | ٩٦ | ١٠ | ١,٢ |
| ١٩٩٦ | ١٠١٠ | ٩٧,٩ | ٩,٧ | ٥,٢ |

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(A-3)

Area constructed and Number of licenses issued by Construction sector

| | Area (Ths. $M^2$) | | | | (Number 0f Licenses | | | |
|---|---|---|---|---|---|---|---|---|
| Year | Residential | Othrs | Total | Δ*% | Residential | Othrs | Total | Δ*% |
| ١٩٦٨ | ٢٧٦,٧ | ١١٥,٨ | ٣٩٢,٥ | * | ٣١٣٥ | ٥٥٠ | ٣٦٨٥ | * |
| ١٩٦٩ | ٣٢٩,١ | ٩٠,٧ | ٤١٩,٢ | ٦,٨ | ٢٧٩٢ | ٣٤٢ | ٣١٣٤ | ١٤,٩- |
| ١٩٧٠ | ٢٥٧,٠ | ٧٢,٢ | ٣٢٩,٢ | ٢١,٥- | ٢٤٤١ | ٣٦٦ | ٢٨٠٧ | ١٠,٤- |
| ٩٧١ | ٢٢٨,٦ | ٥٥,٦ | ٢٨٤,٢ | ١٣,٧- | ٢٤٣٨ | ٤٥٣ | ٢٨٩١ | ٠,٦ |
| ١٩٧٢ | ٤٣٩,٨ | ٩١,٦ | ٥٣١,٤ | ١٦,٦ | ٤٠٧٦ | ٦٢٩ | ٤٧٠٥ | ٦٣,٧ |
| ١٩٧٣ | ٥٠٥,٤ | ١٤٣,٩ | ٦٤٩,٣ | ٩٥,٩ | ٤١٤٧ | ٦٠٣ | ٤٧٥٠ | ٠,٩٦ |
| ١٩٧٤ | ٤٠٨,٠ | ١٠٩,٣ | ٥١٧,٣ | ٢٠,٣- | ٢٩٥١ | ٥٥٤ | ٣٥٠٥ | ٢٦,٢- |
| ١٩٧٥ | ٥٧٦,٣ | ١١٠,٩ | ٦٨٧,٢ | ٣٢,٩ | ٤٧٤٧ | ٦٢٨ | ٥٣٧٥ | ٥٣,٣ |
| ١٩٧٦ | ٩٢٠,٤ | ١٤٩,٠ | ١٠٦٩,٤ | ٥٥,٦ | ٦٥١٥ | ٥٦٦ | ٧٠٨١ | ٣١,٧ |
| ١٩٧٧ | ٩٦٥,٣ | ١٧٣,٢ | ١١٣٨,٥ | ٦,٥ | ٧٠٧٤ | ٧٠١ | ٧٧٧٥ | ٩,٨ |
| ١٩٧٨ | ١٠١١,٤ | ١٩٥,١ | ١٢٠٦,٥ | ٥,٩ | ٦٦٢٧ | ٧٨٤ | ٧٤١١ | ٤,٧- |
| ١٩٧٩ | ١٥١٤,٥ | ٢١٩,٦ | ١٧٣٤,١ | ٤٣,٨ | ٧٤١٠ | ٩٨٧ | ٨٣٩٧ | ١٣,٣ |
| ١٩٨٠ | ١٦٧١,٧ | ٢٧٧,٧ | ١٩٤٩,٤ | ١٢,٤ | ٦٥٩٤ | ٩٨٦ | ٧٥٨٠ | ٩,٧- |
| ١٩٨١ | ٢١٦٣,٢ | ٣٠٩,٥ | ٢٤٧٢,٧ | ٢٦,٩ | ٦٤٣٢ | ١١٤٤ | ٧٥٧٦ | ٠,٠٥- |
| ١٩٨٢ | ٢٣٦٩,٨ | ٧٥٢,٧ | ٣١٢٢,٥ | ٢٦,٣ | ٦١٣٥ | ٧٨٢ | ٦٩١٧ | ٨,٧- |
| ١٩٨٣ | ٢٣٧٨,١ | ٦٣٢,٣ | ٣٠١٠,٤ | ٣,٦- | ٦١١٥ | ٦٤٥ | ٦٧٦٠ | ٢,٣- |
| ١٩٨٤ | ٢٥٩١,٥ | ٣٥٣,٦ | ٢٩٤٥,١ | ٢,٢- | ٦٦٣٨ | ٥٦٣ | ٧٢٠١ | ٦,٥ |
| ١٩٨٥ | ١٧٨٢,٧ | ٤٢٧,٧ | ٢٢١٠,٤ | ٢٤,٩- | ٦٠٦٦ | ٧١٢ | ٦٧٧٨ | ٥,٩- |
| ١٩٨٦ | ١٧٨١,٩ | ٤٨٤,٧ | ٢٢٦٦,٦ | ٢,٥ | ٦٢٩٢ | ٨٢٠ | ٧١١٢ | ٤,٩ |
| ١٩٨٧ | ١٦٦٧,١ | ٣٩٩,٩ | ٢٠٦٧,٠ | ٨,٨- | ٦٧٧٢ | ٨٢٣ | ٧٥٩٥ | ٦,٨ |
| ١٩٨٨ | ١٨٥٨,٧ | ١٩٥,٥ | ٢٠٥٤,٢ | ٠,٦- | ٩٩٨٩ | ١٨٠ | ١٠١٦٩ | ٣٣,٩ |
| ١٩٨٩ | ٢١٣٠,٤ | ٢٩٣,٩ | ٢٤٢٤,٣ | ١٨,١ | ٩٤٢٧ | ١٥٤ | ٩٥٨١ | ٥,٨- |
| ١٩٩٠ | ٢٤٧٧,٥ | ١٨١,٠ | ٢٦٥٨,٥ | ٩,٦ | ١١٦٩١ | ١٣٠ | ١١٨٢١ | ٢٣,٤ |
| ١٩٩١ | ٤٢٦١,٥ | ١١٠,٢ | ٤٣٧١,٩ | ٦٤,٥ | ١٧١٦٠ | ٨٩ | ١٧٢٤٩ | ٤٥,٩ |
| ١٩٩٢ | ٦٤٥٩,٠ | ٣٧,٥ | ٦٤٩٦,٥ | ٤٨,٦ | ٢١١٨٠ | ١١ | ٢١١٩١ | ٢٢,٩ |
| ١٩٩٣ | ٣٠٧١,٥ | ١١٣٤,٠ | ٤٢٠٥,٥ | ٣٥,٣- | ١٤٢٨٥ | ٢١٨٤ | ١٦٤٦٩ | ٢٢,٣- |
| ١٩٩٤ | ٣٦٨٣,٨ | ١١٩١,٣ | ٤٨٧٥,١ | ١٥,٩ | ١٦٠٠٠ | ٢٣٥١ | ١٨٣٥١ | ١١,٤ |
| ١٩٩٥ | ٤٠٢٠,٧ | ١١٢٤,٢ | ٥١٤٤,٩ | ٥,٥ | ١٦٤٣٠ | ٢١٢٨ | ١٨٥٥٨ | ١,١٣ |
| ١٩٩٦ | ٤٣١٥,١ | ١١٥٦,٠ | ٥٤٧١,١ | ٦,٣ | ١٤٩٦٦ | ١٨٣٧ | ١٦٨٠٣ | ٩,٥- |
| ١٩٩٧ | ٣٥٧٦,١ | ٩٢٠,٨ | ٤٤٩٦,٩ | ١٧,٨- | ١٣١٩٥ | ١٦٤ | ١٤٨٣٨ | ١١,٧- |

| | | | | | | ٣ | | |
|---|---|---|---|---|---|---|---|---|

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Received, 31 May 2000