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Investment in Housing Sector, an Input- output Approach

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Abstract

The Housing sector can be considered both the exchange of intermediate goods and the investment goods for the manufacturing sectors. The housing sector is the buyer of intermediate goods such as brick, cement, iron etc from one side, and uses the investment goods such as crane etc from other side. Furthermore, it uses the labour force. Thus, the housing sector has three types of buying which includes intermediate goods, investment goods and labour force.

In addition to the above case, the housing sector is also a supplying sector. From this stand, it produces the intermediate inputs, to the manufacturing sectors. On the other side it produces investment goods, which is bought by other economic sectors. The latter can be named as the investment in housing, which is a considerable amount and can be said that it is equal to the total investment of private sector in the housing. The above discussion can be stated in an input-output framework. To simplify and summarize, the whole economy is divided into two sectors of housing and other sectors. It is obvious that other sectors include, manufacturing sector as well.

Keywords: Housing Sector, Input-Output, Investment

1- Input-Output Table of Housing Sector

In the table (1), the exchanges between the housing sector and other manufacturing sectors have been stated in two forms. These exchanges include the exchange of intermediate goods Xij and exchange of investment goods of Iij.X12 indicate the buying of other sectors from the housing sector which utilize it as intermediate goods.

However, I_{12} shows the amount of buying from housing sector by other sectors and the usage of it as investment goods to produce goods or services. Thus I_{10} is equal to total investment in housing, investment in the housing sector is equal to total buying of investment goods by housing sector. In table (1), this

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Table 1- Input – output Table

Output / Input	Intermediate Demand		Total	Components of final demand					
				Investment expenditure			Rest of final demand	Aggregate final Demand	Aggregate demand
	Housing sector	Other sectors		Housing sector	Other sectors	Total			
Housing sector	X_{11}	X_{12}	X_{10}	I_{11}	I_{12}	I_{10}	$\overline{Y}_1$	Y_1	X_1
other sector	X_{21}	X_{22}	X_{20}	I_{21}	I_{22}	I_{20}	$\overline{Y}_2$	Y_2	X_2
Total	X_{01}	X_{02}	X_{00}	I_{01}	I_{02}	I	$\overline{Y}$	Y	X
Pay to labour force Pay to other Manufacturing factors	W_1 r_1	W_2 r_2	W r						
Added value	V_1	V_2	V						
Imports	m_1	m_2	M						
Net indirect taxes	t_1	t_2	t						
Aggregate supply	X_1	X_2	X						

figure is equal to I_{01}. Therefore, we are faced with two concepts, i.e. investment in housing and investment in housing sector. The first includes the sales of housing sector to manufacturing sectors as the final goods or investment goods or generating wealth and the second include buying the investment goods from other manufacturing sectors ranging from spade and pick up to advanced constructional machineries such as crane by housing sector.

2- The Estimation of Technical Coefficients in the Housing Sector

The technical coefficient indicate the technology of production from one side and the needs of one sector to intermediate goods or the needs of other sectors to the goods of the concerned sector from other side . These needs or coefficients include direct and indirect coefficients. Due to the multiplicity of the number of these coefficients, and in some cases their worthless negligible amount, the comparison was done only for the buying of housing sector from industry sector whose results have been summarized in table (2). These figures

show the amount needed of the products of industry sector to produce one thousand Rial products at housing sector. The figures in table (2) show that the technical coefficient for the purchase of housing sector from industry sector has varied extensively. The figure for 1968 is about 0.212 and 0.484 in 1993, i.e. it has doubled.

In other words, the technology of manufacturing in housing sector had gone under changes and gradually has become dependent more on industry that sector. This indicates the increase in industrialization of manufacturing in the housing sector and move from traditional construction method to industrial construction method, which has caused improving quality in the newly established buildings, and increase in the useful life of residential units.

Table (2): Technical Coefficient in of Construction Sector

Year	The coefficient of purchase of construction sector from industry sector
1948	0.21149
1983	0.2190
1984	0.26413
1985	0.37139
1987	0.39128
1988	0.39923
1989	0.43854
1990	0.45714
1991	0.47576
1992	0.48432

Collected and calculated from Input-Output tables for different years

2-1- The Direct Technical Coefficients of production in the Housing Sector

Table (3) shows the technical coefficients of production for the residential and, non-residential sectors as well as and other constructional operations. Each

of these coefficients shows how much the housing sector in order to produce one thousand Rials of its products needs to buy of the intermediate goods from each of the sub-sector of economy. According to Table (3), the difference between the technical coefficients of production in the residential and non-residential sectors in many cases is very small. However, the difference between the technical coefficients of production in other constructional operation and residential and non-residential units is very high. These coefficients indicate the combination of the inputs being used in housing sector. In fact, the production technology in the housing sector or the structure of production in the housing sector dictates such combination. In the other side, the figures of table (3) indicate the dependence of housing sector to the intermediate Inputs. As an example, the highest dependency is on transportation. The transportation sector has the highest impact on housing sector in such a way that to produce one thousand Rials in the housing sector, 103.88 Rials should be paid for transportation, which is about 19.25 percent of total cost of housing sector. But if the combinations of the intermediate cost of housing sector presented in four main groups then 36.08 percent are of non metal products, 32.7 percent of metal products 30.75 percent of services and 0.46 percent of others.

2-2 Technical Coefficients of Production Necessary in Manufacturing Sectors to the Products of Housing Sector

These needs indicate the needs of each of manufacturing sectors to the products of housing sectors in order to produce one thousand Rials of their products; the sector of residential constructions includes residential production, main repairs and trivial fixing services. Thus buying from the sector of residential construction includes these three categories. With regard to the table 4, the highest coefficient is related to the sector of oil products. The considerable point is related to the second column of table (4) i.e. the portion of purchase from the sector of residential construction to the total intermediate cost. That is what is the percentage of total intermediate cost of each sector of buying from residential construction sector. These ratios was less than 3% for all sectors except, crude oil and natural gas (11.93 percent), production of oil products (11.6%) manufacturing industry of professional and scientific tools (3.41%), irrigation sector (6.87%), hotel (3.6%) insurance services (8.7 %) and renting real estates (6.82%) and occupation (6.85%). In other words, for most of

Table (3): Technical Coefficients of Production in the Sectors of Residential, Non-Residential and other Construction Operations in 1988

	Residential Constructions	Non- residential Constructions	Other constructional operations
Producing of carpet and Gelim	5.47	5.45	4.85
Producing wood and timber	18.58	35.04	13.12
Wooden products	0.15	1.64	0.25
Furniture and wooden equipment	0.06	0.65	0.1
Paper and paper products	0.55	0.58	0.65
Paint and polishing material	6.02	6.52	7.11
Oil products	1.29	1.28	0
Different products of oil and coal	7.02	7.07	5.79
Porcelain and ceramics vessels	3.41	3.26	2.56
Glass and glass products	7.15	6.06	4.13
Earthen products of constructions	71.03	79.31	68.80
Cement, chalk and lime	28.24	29.01	50.85
Other nonmetal mineral products	45.71	72.73	73.07
Main products of iron and steel	86.89	114.42	113.75
Fabric metal products	14.95	12.75	13.08
Constructional metal products	31.18	20.69	13.89
Other metal products except machinery	33.32	29.41	28.44
Machinery and non electrical industrial tools	2.27	3.11	1.87
Electrical industrial tools and machinery	0.9	0.53	0.5
Other electrical tools	7.01	4.15	3.87
Transportation and storekeeping	103.88	128.67	145.58
Business	62.03	71.98	68.19
Other products	2.46	2.34	2.17
Total	539.57	636.65	622.64

Source: Extracted from the input-output tale of 1988.

Table (4): The Needs of the Manufacturing Sectors to the Products of Residential Sector or Allocation of the Products of Residential Sector to the Manufacturing Sectors (in 1988)

Activity	Needs of manufacturing sectors to the residential construction (Rial in lieu of one thousand Rials production)	Share of buying from construction sector of the total intermediate costs percent	Share of manufacturing sectors from buying of products of residential sector percent
Agriculture	0.34	0.15	1.13
Crude oil and natural gas	3.83	11.93	2.83
Producing meat product	1.06	0.13	0.09
Dairy products	0.62	0.09	0.05
Fruit and vegetables preservation	2.19	0.39	0.24
Oil (cooking)	2.54	0.35	0.33
Flour making and rice cleaning	2.03	0.22	1.48
Bread, cookies and chocolate	0.23	0.03	0.11
Sugar	5.45	0.80	0.59
Other food products	4.51	0.69	0.43
Producing soft drinks	11.84	2.14	0.49
Tobacco products	2.03	0.1	0.09
Spinning and weaving	4.51	0.83	3.53
Textiles	12.62	2.6	0.36
Knitwear	1.26	0.22	0.07
Producing carpet and Gelim	9.22	2.23	1.59
Other textiles	1.5	0.29	0.02
Clothes	2.95	0.53	0.75
Leather and fur	5.66	0.67	0.4
Products of leather and fur	16.6	2.67	0.94
Shoes	3.0	0.57	0.59
Wood and timber	6.52	1.18	1.3

Table (4): The Needs of the Manufacturing Sectors to the Products of Residential Sector or Allocation of the Products of Residential Sector to the Manufacturing Sectors (in 1988)

Producing paper and paper products	7.44	1.25	0.54
Printing and publishing	15.66	3.2	1.31
Producing of chemical main materials	1.76	0.33	0.03
Chemical fertilizer and poison	3.34	0.89	0.07
Paint and polishing materials	6.93	1.05	0.12
Medicine and medical materials	5.88	1.67	0.41
Detergent materials	8.56	1.28	0.75
Producing oil products	31.47	11.16	8.41
Miscellaneous oil and coal products	2.51	0.65	0.04
Rubber	4.81	0.99	0.22
Plastic materials	5.08	0.89	0.75
Industry of ceramic and earthenware vessels	5.34	1.74	0.11
Glass industry and glass products	0.28	0.1	0.02
Industry of construction clay materials	5.55	2.26	1.08
Cement, chalk and lime	4.46	1.08	0.47
Other non-metal products	3.83	0.79	0.58
Industry of main products of iron and steel	2.22	0.54	0.5
Industry of non-metal main products	5.47	1.07	0.58
Industry of fabric metal products	3.98	0.67	0.45
Construction metal products	8.51	1.45	1.23
Other products made of metal	10.22	1.59	2.8
Engine and Turbine industry	12.91	2.07	0.49
Producing Tractor and agricultural machinery	6.18	1.19	0.38

Table (4): The Needs of the Manufacturing Sectors to the Products of Residential Sector or Allocation of the Products of Residential Sector to the Manufacturing Sectors (in 1988)

Non- electrical industrial machinery ad tools	3.51	0.55	0.57
Producing radio and telecommunication tools	5.18	1.06	0.24
Other electrical tools and equipments	4.01	0.93	0.50
Vehicles production	5.47	1.04	0.51
Production of motorcycle and bike	9.42	1.94	0.11
Industry of producing professional and scientific tools	18.53	3.41	0.3
Other manufacturing industries	12.44	2.13	0.61
Electricity	3.23	0.61	1.02
Gas	3.67	1.04	0.2
Water	13.81	6.87	0.89
Transportation and storekeeping	0.45	0.1	0.97
Communication	2.54	2.10	0.33
Business	4.54	2.7	19.73
Hotel management	12.83	3.6	0.85
Financial services	7.41	2.54	1.68
Insurance services	6.7	8.7	0.13
Rental estates	8.07	6.82	5.28
Computational estates	6.79	6.85	2.31

Source: Extracted from the input-outputs table of 1988.

manufacturing sector, the ratio of purchase from the sector of residential construction compared with their total intermediate cost is relatively small. Another point from table (4) is the allocation of the products of the sector of residential constructions to economic sectors. According to these figures, the commerce sector has allocated the greatest portion from intermediate demand for the products of residential construction sector (19.73 %). The portion of the rented real estates and acquired ones amounts to 7.59% , This figure for other sectors such as manufacturing of oil products is (8.41%)) spinning and weaving (3.53%)) crude oil and natural gas (2.83%) and other products made of metals (2.8%) . For other manufacturing sectors, the mentioned figure is less than 2 %.

2-3- The Direct and Indirect Technical Coefficients

The technical coefficients of production or direct coefficients show the amount of intermediate goods at sector i to produce one thousand Rials goods in sector j. On the other hand, the direct and indirect coefficients show that if the final demand of one thousand Rials to be increased, then in what rate, the products of other sectors should be increased? Concerning the housing sector, one can say that if the final demand for housing to be increased, one thousand Rials, then what should be of the rate of the products of other sectors?

In table (5), the direct and indirect needs of the sector of residential construction toward the manufacturing products of the sectors of economy and needs of manufacturing sectors toward the products of the sector of residential constructions have been summarized. The first column of this table shows that if the final demand for the products of the sector of residential constructions to be increased by one thousand Rials then to what rate the products of other sectors must be increased.

With regard to the table, if the demand for residential construction sector goes up one thousand Rials then 1909.4 Rials of intermediate goods are needed. In other words the multiplier effect of increase in housing demand by one thousand Rials is 1909.4.

By comparing the direct and indirect needs (table 5) with direct needs (table 3), it is observed that there is much difference between these two. This is due to the close link between housing sector and other sectors. What can be induced from comparison of these two tables is that, those products which are mainly used by the housing sector and also the link between the manufacturing sectors of these goods with other sectors is low, in this state there is no considerable difference between the direct and total needs. The second column of table (5) indicates that if the final demand for the products of each of the manufacturing sectors to be increased by one thousand Rials, what would be its impact on the production of the residential construction sector? In other words, it indicates the multiplier of coefficient of increase in demand for the products of manufacturing sectors on housing. According to these figures, if the final demand to be increased for one thousand Rials, the production of housing sector will be increased by 1807.76 Rials. This impact is related to the increase in the final demand for all manufacturing sector including the residential constructions sector itself. However, if we disregard the residential construction sector, the increase of manufacturing of the residential construction sector will be equal to 803.84 Rials.

Table (5): Direct and Indirect Coefficients of Manufacturing in Housing Sector
increase in final demand by one thousand Rials

Activity	Direct and Indirect needs of residential construction sector to the products of manufacturing sector	Direct and Indirect needs of manufacturing sectors to the products of residential construction sector
Agriculture	5.71	1.37
Animal Husbandry	4.24	0.93
Forestay	5.64	0.4
Fishing	0.05	2.5
Crude oil and natural Gas	1.6	4.07
Coal mines	3.95	4.5
Other mines	24.43	1.51
Producing food products	0.47	2.97
Dairy products	0.35	3.23
Preservation of Fruit and vegetable	0.65	5.2
Preservation of sea foods	0.09	4.47
(Cooking) oil	0.44	7.01
Flour making and rice cleaning	1.04	4.55
Bread, sweets, chocolate	0.27	4.29
Sugar	1.78	9.36
Other food products	0.52	7.61
Producing sift drink	1.03	15.77
Cigarettes, tobacco	0	2.9
Spinning and weaving	4.97	7.63
Textiles except clothes	0.4	16.24
Knitwear	0.07	6.34
Producing carpet and Gelim	5.63	12.37
Other textiles	0.22	6.33
Clothes except shoes	0.53	7.59
Leather and skin	0.39	8.74
Products of leather and skin	0.16	21.7

Table (5): Direct and Indirect Coefficients of Manufacturing in Housing Sector

Shoes except of rubber and plastic shoes	0.15	7.88
Wood and Timber	20.56	8.96
Wooden products	0.24	5.88
Making furniture and household furniture	0.56	5.36
Producing paper and paper products	5.36	15.23
Printing and publication	1.74	20.96
Chemical main materials	9.3	5.32
Chemical fertilizer	1.63	5.71
Synthetic fibers and plastic materials	4.88	4 .11
Paint and polishing materials	12.39	12.56
Medicine and materials to produce medicine	0.97	8.89
Soap, detergents and similar products	4.06	13.57
Producing oil products	17.27	34.61
Producing miscellaneous products of oil and coal	8.01	6.05
Exterior and interior tires and similar products	7.4	8.0
Producing plastic products	1.44	8.38
Industry of ceramic and pottery tools	3.55	6.85
Glass industry and glass products	9.18	1.62
Industry of clay construction products	72.5	7.45
Cement, chalk and lime	31.62	7.64
Other non metal mineral products	47.67	6.21
Industry of main products of Iron and steel	123.45	4.6
Industry of main products of non-Iron metals	8.31	9.41
Industry of metal fabrics products	19.63	8.5

Table (5): Direct and Indirect Coefficients of Manufacturing in Housing Sector

Constructional metal products	33.12	12.72
Other materials made of metal except machinery	43.18	15.3
Industry of engine and turbine	3.56	18.01
Tractor and agricultural machinery	1.78	10.52
Non electrical industrial tools and machinery	8.73	8.87
Electrical industrial tools and machinery	2.53	3.27
Radio, T.V. and telecommunication tools	1.7	8.82
Home electrical tools	1.05	4.25
Other electrical tools	13.66	7.23
Shipbuilding and tools of railway and airplane	3.86	4.8
Means of transportation	9.71	9.69
Motorcycle and Bicycle	0.34	13.2
Industry of producing professional and scientific tools	1.24	23.71
Other manufacturing industries	2.62	16.49
Electricity	8.31	7.76
Gas distribution	1.5	7.58
Water	0.37	15.45
Residential units	1003.92	1003.92
Non- Residential	0.85	4.41
Other constructional operation	0.06	4.18
Transportation and storekeeping	144.01	5.23
Communication	2.48	3.6
Business	98.85	5.97
Restaurant	2.93	2.28
Hotel management	1.19	15.02
Financial services	5.02	10.22

Table (5): Direct and Indirect Coefficients of Manufacturing in Housing Sector

Insurance services	1.19	7.4
Rental estates	6.92	9.0
Computational estates	0	7.57
Business and law services	5.84	2.7
Fare of machinery and tools	0.17	2.73
Law education	1.03	31.66
Governmental education	0.22	3.89
Private health	1.41	1.89
Governmental health	0	14.01
Defence	0	2.64
General affairs	0.23	13.1
Recreational and cultural services	0.28	3.28
Religious organization	0.03	5.03
Professional and social trade association	0.03	36.05
Repair shops services	12.26	3.09
Other personal and home services	0.82	3.24
Office tools and stationary	3.57	12.44
Packing tools	2.25	11.91
Total	1909.4	1807.76

Source: Extracted from the İnput-Output table of 1988.

3- The combination of the Inputs used in the Housing Sector in the Categories of Domestic and Imported goods

Up to here, the origin of procuring the intermediate inputs in the housing sector from the standpoint of domestic and imported goods has not been distinguished. The intermediate goods bought by the housing sector from domestic manufactures, forms about 34% of the values of the manufactures of this sector. Therefore, in lieu of per one thousand Rials increase in housing production about 340 Rials of intermediate goods produced inside the country were consumed by housing sector. Out of domestic products, the ratio of non-metal mineral products was about 23%. While the share of these goods in the total intermediate costs (either domestic or imported) was about 17.4%. This indicates that the main parts of these goods were produced inside the country and their imports were nil. In the same manner, the share of transportation and storekeeping is about 14% and following that, there comes the metal products used in the constructions with 12.6%.

The next rank is of wooden products, which form a figure equal to 11.5% of total domestic intermediate cost of housing sector. The domestic manufacturing of major products of steel and steel mill, which allocate 8.8% of total domestic intermediate housing sector, is in the fifth rank. While the share of the major products of steel and steel mill in procuring total intermediate cost of housing sector was about 24% which allocate the first rank among all manufacturing sectors. The above five sectors procured about 70 percent of total domestic intermediate costs of housing sector.

The share of intermediate purchases of housing sector from importing goods to the total value of production of housing sector forms a figure equal to 12.7%. In other words, to produce one thousand Rials products in the housing sector there is a need to 127 Rials of importing goods which in any way form a considerable figure. Among the importing goods needed for the housing sector the major share is allocated to major products of steel and steel mill, which includes more than 63% of total imported intermediate costs of housing sector. The share of goods related to other industrial products in procurement of importing needs of housing sector is about 17 %. After that, there are the wooden products with a share of 5.8 %. Generally speaking, the share of the 4 mentioned sectors in procuring the imported intermediate goods of housing sector is about 91.5 %.

4- The Influential Factors on Investment in Housing

Different factors have impact on investment in housing. It goes without saying that there is no way to include all these factors, but factors such as price of housing, general level of prices, income, population and credits can play main

role. In order to study the impact of these variables, the following regressions have been estimated.

$$IHP_t = -80.017\frac{PH_t}{P_t} + 0.02296GDP_t + 39.70Z_t + 0.03003\Delta MR_t + 0.59856IHP_{t-1}$$

$$(-1.31) \qquad (3.37) \qquad (1.59) \qquad (2.1) \qquad (5.03)$$

$$R^2 = 0.914 \qquad D-W = 2.01 \qquad (4\text{-}1)$$

In this equation, IHPt is the investment of private sector in construction, PH, index of housing cost which has been used as a proxy for housing price GDP, gross domestic products, Z_t , rate of population growth and ΔMR_t changes in the balance of the granted credits to private sectors. Equation (4-1) shows that the regression is acceptable at a significant level and the explanatory power of the model is high (91 percent) It also shows that the cost (price) of housing has negative impact on housing investment The above function is in fact a demand function which means that investment in housing indicates the purchase of housing as an investment goods whose services are used. In the other side, as it was mentioned, the index of housing cost has been used instead of housing price. The high coefficient of this index means that with the high rental price it reduces saving needed for purchase. There is a positive relation between the gross domestic or national income and investment in housing. Since the equation (4-1) is linear, so the elasticity of investment in housing in relation to gross domestic product is not constant. As it was expected, there is a positive relationship between the rate of population growth and investment in housing. The change in the balance of credits granted by banking system to private sector has also considerable impact on housing.

The equations (4-2) and (4-3) is estimated in per capita and logarithmic forms:

$$\left(\frac{IHP}{POP}\right)_t = 0.005775PH_t + 0.02074\left(\frac{GDP}{POP}\right)_t + 0.01824\left(\frac{MR}{POP}\right)_t + 0.3886\left(\frac{IHP}{POP}\right)_{t-1}$$

$$(-1.36) \qquad (3.82) \qquad (2.91) \qquad (3.87)$$

$$R^2 = 0.893 \qquad D-W = 1.89 \qquad (4-2)$$

$$\text{Log}\left(\frac{\text{IHP}}{\text{POP}}\right)_t = -1.1538 - 0.0279\,\text{Log}(\text{PH})_t + 0.3311\,\text{Log}\left(\frac{\text{GDP}}{\text{POP}}\right)_t + 0.1186\left(\frac{\text{MR}}{\text{POP}}\right)_t$$

$$(-2.04) \quad (-1.36) \quad (1.87) \quad (1.0)$$

$$+ 0.5474\,\text{Log}\left(\frac{\text{IHP}}{\text{POP}}\right)_{t-1}$$

(4.7)

$$R^2 = 0.916 \qquad D - W = 1.93 \qquad (4-3)$$

Equation (4-3) shows that one percent increase in the per capita of gross domestic product will increase 0.3311 percent in per capita investment in housing and one percent change in the per capita credits granted by banking system to private sector will cause 0.119 percent change in per capita investment in housing. In estimation, the share of investment in housing has been considered from total investment as dependent variable. The obtained result is as follow:

$$\left(\frac{\text{IHP}}{\text{I}}\right)_t = 32.336 + 2.7171\left(\frac{\text{VAAH}}{\text{GDP}}\right)_{t-3} - 10.5146\left(\frac{\text{PH}}{\text{P}}\right)_t + 2.4298\,\text{U}_{t-2}$$

$$(6.81) \quad (4.76) \quad (-2.72) \quad (1.16)$$

$$R^2 = 0.613 \qquad D - W = 1.55 \qquad (4-4)$$

VAAH is the added value of construction sector, $\frac{\text{PH}}{\text{P}}$ the relative price of housing and Ut is the rate of growth of share of urban population to the total population of country. The obtained results indicate that the share of housing sector from added value of the country, with a 3-year lag, have an impact on the share of housing of the total investment.

In other words, if the share of housing sector of the total added value to be increased one unit, in that case, the share of housing sector of total investment will be increased by 2.72 percent. Also if the share of urban population to total population of the country to be increased, with a two year lag, that will increase the share of investment in housing.

5- Summary and Conclusion

Even though housing sector has a share of about 4 percent of the total added value but it enjoys special position among the producing sectors. At the time, when the share of agriculture and industry sectors in value are 15 and 17

percent respectively. But the importance of housing sector from the standpoint of investing is informant since it allocate over 20 percent of the costs of investment in the country to themselves. On the other side the share of housing cost in the consumption basket of the household is also considerable.

In the housing sector, the ratio of intermediate costs to added value is equal to 0.8611, In other words, to produce one thousand Rials added value in the housing sector, 861 Rials intermediate goods, such as constructional materials, have been spent. While the ratio for agriculture sector and industry sector are about 0.526 and 1.645 respectively. While to produce, one thousand Rials of housing about 0.577 Rials intermediate goods are spent. Therefore, the consumption of intermediate goods in housing sector is more than the average of the country but in the sector of agriculture is less than medium.

Many of the needs of housing sector are procured by domestic products. Amid them, the share of non-metal mineral products amounts to 23 percent. The main reason is that these goods are mainly procured inside the country. The housing sector has used about 127 Rials of imported intermediate goods to produce one thousand Rials of Its products. But among the importing goods, the share of main products of steel and steel mill is over 63 % of imported intermediate costs in the housing sector .Generally, the housing sector has procured about 72.6 percent of its needs from domestic productions and 27.4 percent from imports.

The issue of investment in housing was considered from two dimensions. One is the investment in housing which indicates demand for housing as an investment good and the other is investment in producing housing which indicates the demand for constructional materials by housing sector or intermediate costs of housing sector.

In the framework of a macro model, there is a possibility to study the impact of price of constructional materials, wages of labour force, credits for housing sector and other factors.

The investment of private sector in the housing sector is among the variables which is very sensitive to the prices of constructional materials. The results of the model shows that the sensitivity of investment in this sector is directed toward constructional materials, change in the balance of credits of housing sector and finally the growth rate of wages respectively.

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