CHANGING THE ROLE OF THE STATE IN SUBSIDIZED HOUSING: THE CASE OF A DEVELOPING ENVIRONMENT

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CHANGING THE ROLE OF THE STATE IN SUBSIDIZED HOUSING : THE CASE OF A DEVELOPING ENVIRONMENT*

by

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Abstract

The study discusses the changing role of the state in subsidized housing with the aim of suggesting new alternative methods of financing housing projects in developing environments. The study argues the need for state interference in financing housing projects on condition that these projects be financially evaluated, and suggests several self-continuing means and institutions which may be used in this regard. Experience of subsidized housing programs in the Occupied Palestinian Territories were summarized. The theoretical investment formulas and bases were presented in order to fulfill the social and economic objectives of the subsidized housing sector. The study concluded that a fiscal year basis formula is relevant to financial institutions which are subsidized by public funds. A project basis formula using present value of cash flows is a relevant technique to be used by local and international construction firms, while a life project basis is a relevant technique to be considered by public construction firms.

ملخص

تناقش هذه الورقة الدور المتغير للدولة فى مسألة الاسكان المدعم، بحيث تقترح طرقا بديلة جديدة لتمويل مشروعات الاسكان فى أوساط البلدن النامية. كما تناقش الورقة الحاجة الى تدخل الدولة، فى تمويل مشروعات الاسكان، بشرط تقييم هذه المشروعات ماليا، وتقترح عدة وسائل للاستمرار الذاتى، كما تقترح عدة نظم مؤسسية يمكن استخدامها فى هذا الصدد. وثمة عرض موجز لتجربة برنامج الاسكان المدعم فى الاراضى الفلسطينية المحتلة. وقد جرى طرح الصيغ والاسس النظرية للاستثمار، بغية تحقيق الاهداف الاقتصادية والاجتماعية لقطاع الاسكان المدعم. وخلصت الدراسة الى ان الصيغة التى تقوم على اساس السنة المالية، هى الصيغة الانسب للمؤسسات المالية التى تدعمها الصناديق العامة. اما الصيغة التى تقوم على اساس كل مشروع على حدة باستخدام القيمة الحالية للتدفقات النقدية، فهى الاسلوب الفنى المناسب، لاستخدام شركات الانشاء المحلية والعالمية، بينما الصيغة التى تقوم على اساس عمر المشروع، هى الاسلوب الفنى المناسب الذى يتعين ان تأخذه بعين الاعتبار شركات الانشاء العامة.

Introduction

The housing sector is one of the most important sectors in an economy, whether in developed or developing countries. Housing is a major concern of individuals and families. In addition, the housing sector has several economic advantages, namely, offering job opportunities, serving related industries, and fulfilling social functions within society, and it witnesses periods of prosperity and retrenchment according to the political and economic trends of the country concerned. The housing sector may be categorized as follows: private versus public housing; single-family versus multi-family housing; and owner-occupied versus tenant-occupied housing.

Private housing units attract the most concern, because they are intimately associated with finding a shelter - a dwelling unit - in which to live. The demand for private housing units comes from several parties, such as newly-formed families, families and individuals seeking to improve their current dwelling conditions, and those waiting to replace their dilapidated units. As the world's ratio of urban population increased from 35 percent in 1970 to 42 percent in 1992 (World Development Report 1994: 223), demand for modern housing has increased sharply. The supply for the housing sector comes from the following sources: households which arrange for the construction of their own family housing units; speculative builders and/or developers of both single-family and multi-family units; and government projects. A house is supposed to be valued at a fair price based upon supply and demand. However, in Occupied Palestine (OP) as well as in many countries, the price may be unaffordable for many buyers in spite of their wishes and urgent needs. Hence, this paper will discuss the housing issue in the case of developing countries in general and, in particular, that of Occupied Palestine.

The financing of housing in Occupied Palestine

The housing sector in Occupied Palestine

Occupied Palestine refers to the West Bank and the Gaza Strip. The housing sector is considered OP's third most important economic sector, accounting for about 16 percent of the Gross Domestic Product and 60 percent of fixed capital formation. It also accounts for almost ten percent of OP's total employment. On average, the housing costs incurred by a Palestinian family form about seven percent of total living costs, excluding utilities (Sabri 1992). The supply of OP's housing sector comes from various groups, such as the public sector (represented by central as well as local authorities), non-profit institutions, cooperatives, and the private sector. OP's total number of housing units was estimated at 300,000 in 1993, and it was found that the average housing unit included about six persons. The annual housing supply in OP ranged from 700 housing units in 1968 to 9,900 in 1987 to 12,000 in 1993, with an average of 120 square meters per housing unit. The demand for residential housing units accounts for about 95 percent of total housing demand, and it comes from newly-established families as well as others seeking to improve their current housing conditions. In addition, the commercial and industrial sectors account for three percent of total demand, while the demand for housing for public purposes corresponds to about two percent.

The issue of OP's housing shortages was not so clear in the beginning, either because most newly-established families chose to live with their parents or because of the temporary emigration of many Palestinian families working outside OP (Sabri 1978 and 1991). Nevertheless, the housing sector in OP faces several problems, such as the inexistence of laws or tax policies to encourage and support investments in the housing sector. But most importantly, one should mention the lack of housing supply as a result of occupation and its policies. Occupation limited the area of OP's cities and villages and banned building licenses. Moreover, it posed obstacles to the transfer of ownership as well as to the registration of land. Additional problems were created concerning the registration of apartments within residential buildings. The lack of specialized housing institutions and the restrictions imposed on the

new commercial banks operating in OP further compounded the area's housing problems.

Public versus private housing in OP

The private sector currently provides the major source of investments in OP housing, accounting for about 96 percent of total investments in the housing sector between 1967 and 1993. Annual private investments in the housing sector ranged from $170 million in 1982 to $450 million in 1993. Public contributions to housing sector investment were limited to four percent of total housing investments, in spite of various contributions from Arab and other sources. These were:

a) The Jordanian-Palestinian Committee headquartered in Amman conducted a special project valued at $66 million to support housing in OP between 1979 and 1985 (Joint Committee 1987).

b) The Arab Cities Twin Program transferred about $12.5 million to Palestinian municipalities.

c) The average government budget allocated to public housing was about $3 million a year, including current and capital items.

d) The annual local budget contribution to housing ranged from $1 to $4 million.

e) The UNRWA contributed an average of $250,000 annually to house Palestinian refugees.

f) The Islamic Waqf Department had an annual budget ranging from $1 million to $2 million allocated to housing during the 1968-1992 period (Sabri 1994).

g) In 1993, the European Community granted $50 million to the Palestinian Housing Council to support housing, and now 1,000 multi-family units are under construction in the cities of OP.

Table 1 below summarizes the sources of housing investment in Occupied Palestine:

Table 1. Sources of Housing Investment in Occupied Palestine from 1968 to 1993

Sources of Investment		Purposes
Private 96%	Local savings	Private and commercial
	Palestinian transfers	Private and commercial
Public 4%		
Arab Aid	Joint committees	Private family-cooperative housing
	Twin Arab Cities Programs	Schools and local public buildings
Central government budget		Public buildings
Local councils budgets		Public buildings and commercial
UNRWA investments		Maintenance of camps housing units
EC throughout National Housing Council		Private family housing
Al-Waqf investments		Public, commercial and private

Source: Data collected and compiled by the author

Features of housing financing in Occupied Palestine

The major characteristics of housing sector financing in OP may be summarized as follows: Except during the Intifada period (1988 to 1990), investment in private housing in OP during the 1971-1993 period was large by international standards, in spite of the nonexistence of financing instruments. This may be related to a number of reasons. First and foremost, one must note the contributions from Palestinians working outside OP, such as in the United States or the Arabian Gulf. The majority of investments in private housing and

commercial complexes came mainly from Palestinian transfers. Investments in housing derived from Palestinian transfers accounted for 80 percent of all investments in commercial housing between 1989 and 1993, as estimated by the author. Furthermore, for local residents, building a house is the safest venture during occupation, curfews and sieges. Given the continuous rise in property prices, construction is the best investment opportunity because of the appreciating value of property for most Palestinians, especially for those who have the relevant serviced lands. In addition, with the absence of banks and financial institutions, building a house has become an alternative way of saving. Moreover, taxes imposed by the municipalities on housing - including property and education taxes - are relatively low. All of the above factors have encouraged Palestinians to invest in the housing sector.

Because of the closure of 27 bank branches by the occupation authorities since 1967, there were no financial institutions and/or financial instruments in OP from 1967 to 1986, with the exception of the Bank of Palestine in Gaza. In 1986, the military authorities reopened the Cairo-Amman Bank in the West Bank. In 1994, five other banks were reopened. However, since these are under numerous restrictions imposed by the occupation authorities, their contribution to housing financing are expected to be very limited.

Given the low rate of return in the housing business for either renting or reselling, the contribution of speculative builders has been limited. A major problem in this regard is rising construction costs, as well as the number of idle days in implementing long-term projects due to the political situation.

Most private housing units are built for owner use rather than for rent. Owner occupancy in OP is estimated at 69 percent in the West Bank and 98 percent in the Gaza Strip, as compared to 63 percent in ten similar countries, including Jordan, Turkey, Chile, Poland, Mexico, Malaysia, Tunisia and Algeria (World Bank, *Developing the Occupied Territories*, 1994: 95). This is mainly a result of the rent control or tenant protection law, which - among other restrictions - prevents owners from increasing the amount of rent regardless of the inflation rate, thereby favoring the tenants rather than the owners.

The present rate of return of rented housing is very low, as compared to other businesses. The rate of return was about 5.1 percent in 1966. Subsequently, it decreased to 2.2 percent due to the occupation, and it never exceeded four percent thereafter, as indicated in Table 2.

A substantial part of housing units in OP are considered luxury units. The average size of a housing unit built in OP has increased from an average of 120 square meters during the 1968-1990 period to 140 square meters in 1992, built on a lot of 500 square meters. This is higher than the median of ten similar countries - 61 square meters on a lot of 96 square meters (World Bank, *Developing the Occupied Territories*, 1994: 96).

The rate of return from renting commercial buildings is higher than that for family houses, which encourages speculative builders to select commercial projects rather than family housing projects. Rates of return from renting commercial buildings ranged from a minimum of seven percent to 15 percent in 1993. This is due to the low construction cost of commercial housing, which requires fewer finishing materials, as well as to the high rents paid by business firms. In addition, a second return in the form of "key money" is paid by the tenant at occupancy, and depending on size and location, this may range from $5,000 to $25,000 for an office, and from $20,000 to $50,000 for a store.

Finally, it should be noted that the above characteristics are applicable to both the West Bank and the Gaza Strip, with some exceptions as indicated below. Moreover, the housing situation in the West Bank is much better than in the Gaza Strip, since 45 percent of the population of the Gaza Strip are living in UNRWA Housing Camps, as compared to only 16 percent of the population in the West Bank .

Table 2. Return on Investments for Tenant Housing in Occupied Palestine, 1966-1993 ($)

Year	Cost @ Apartment	Annual Rent Apartment	ROI @ Apartment*	Annual Cost**	Net ROI per year***
1966	8,200	540	6.6%	124	5.1%
1969	14,200	400	2.8%	92	2.2%
1976	25,000	1,300	5.1	299	4.0%
1987	42,000	1,600	3.8	368	2.9%
1989	50,000	1,700	3.4	391	2.6%
1991	55,000	2,000	3.6	430	2.9%
1993	60,000	2,800	4.7	469	3.9%

*Return on investment (ROI) for tenant-occupied apartment, average size 120 m2.
**Includes property tax rate of 18% of rent value and maintenance cost.
***The net annual ROI does not include the salvage value of the assets.

Source: Data collected and compiled by the author

Statement of the problem

Most developing countries have witnessed significant shortages of housing units built to acceptable standards, a fact which is borne out by comparing the demand for housing units with their supply under normal conditions. This results in large numbers of families with no place to live or living in substandard units. Hence, most governments resort to some form of subsidized housing program to increase the supply of housing units needed. However, the equilibrium in the market for housing units may differ from one environment to another, and consequently the characteristics of the housing sector may also differ.

In a developed environment, such as the United States for example, financial institutions play a critical role in determining the supply of housing units, and in understanding the housing market equilibrium and the high correlation between the cost of financing and housing supply (Gerber 1985). As a result, there is less need for subsidized housing as compared to developing countries. Furthermore, the need for subsidized housing is acute in the latter, because the shortage of housing units is significant. This stems from a number of factors:

a) The lack of organized private financial institutions, especially those related to housing sector financing. For example, the ratio of new mortgage lending through the formal financial sector to total housing investment is about 16 percent in developing countries, as compared to 85 percent in developed ones (Buckley 1994).

b) The low rate of return for construction firms, especially on projects related to low-income families.

c) The increasing cost of housing construction, land and necessary infrastructure projects.

d) The high cost of financing long-term housing loans. This may be due to the high risk associated with weak contract enforcement in developing countries, as well as to the high administrative costs of financing housing programs (reaching up to four percent), which may eventually lead to limited demand for housing financing (Malpezzi and Mayo 1987, and Buckley 1994).

Governments in both developed and developing countries contribute in several ways

to cope with the factors which cause housing shortages and to facilitate the supply of residential housing units, especially to low-income families. These include carrying out specific housing projects, stating relevant policies and regulations, and/or allocating special funds to housing construction. In developed countries such as the United States, the means of subsidizing housing include: supporting financial institutions related to the housing sector through special regulations and control systems; supporting the mortgage system of housing financing by establishing specialized institutions such as the Federal Home Loan Mortgage Corporation and the Federal Home Loan Bank System (Seiders 1982); establishing specialized institutions to finance housing programs benefiting low-income families, such as the Government National Mortgage Association and Neighborhood Reinvestment Corporation; and using income tax laws to direct investment towards special housing programs, such as those related to low-income housing (Segal and Bird 1988).

In developing countries facing continuous increases in both costs of financing and construction, more direct programs are usually carried out, such as the distribution of housing to low-income families; the allocation of funds to build housing units; and granting interest-free housing loans. However, these programs and funds fluctuate according to the availability of public sources of funds and to changes in policies and priorities. Consequently, the question continuously arises as to whether or not to keep subsidized housing programs in operation, and whether to create self-perpetuating channels for subsidized housing units rather than implementing limited programs that eventually become exhausted. In addition, most subsidized housing programs take only demographic elements and social benefits into account. Unlike industrial (UNIDO 1986) and agricultural (Gittinger 1982) projects, they are seldom evaluated as to their financial viability prior to implementation. Nonetheless, a few studies have addressed selected aspects of housing subsidies, notably DuBock (1988), Lewis and David (1986), and Buckley (1992), albeit not as part of financial evaluation techniques. With the cooperation of the United Nations Center for Human Settlements, the World Bank has recently developed housing indicators to evaluate housing policies and programs at the local and national levels (The World Bank Annual Report 1994: 47).

Therefore, there is a need to explore the issue of financing subsidized housing programs, taking into consideration the new understanding of the role played by the state in promoting economic development. This points to the need to privatize most state-owned enterprises if such institutions are not efficient. Indeed, between 1980 and 1992, more than 15,000 state enterprises were privatized worldwide (Kikeri, Nellis, and Shirley 1994). Furthermore, if some state enterprises are to remain public, they must be subjected to specific performance and profitability criteria. Additionally, governments may finance and interfere in some sectors for social returns. However, it should be noted here that a number of studies have criticized the role of the state in the direct financing of specific sectors based on social considerations, such as instances of government intervention in rural credit markets which were rather disappointing (Hoff and Stiglitz 1990). Stiglitz (1993) has also indicated that direct government financing is shifting from real estate to export promotion in some countries.

Given the above-mentioned conditions, it may nevertheless be difficult to leave the housing sector to private business only. There is a need for state interference in financing housing projects on the condition that these projects be financially evaluated. This paper suggests several self-continuing means and institutions which may be useful in this regard.

Purpose of the study

This study discusses the changing role of the state in subsidized housing, suggests new alternative methods of housing financing relevant to developing countries in general and to Occupied Palestine in particular, and explains investment analysis techniques which may be used to evaluate state financing of housing projects. More specifically, this study has the following goals:

- To state possible means and institutions that may be considered in financing

subsidized housing programs in a developing environment.

• To assure the continuity of these specialized institutions without exhausting any part of the principal funds, so that these funds can be rotated.

• To keep the cost of financing at a minimum level and maximize the possible ranges of the subsidized margin.

• To suggest the relevant capital investment formulas that would best evaluate the financial feasibility of subsidized programs.

• To suggest other indirect governmental means of supporting the housing sector, such as stating relevant policies and regulations; supporting financial institutions related to the housing sector; establishing specialized institutions to finance housing programs benefiting low-income families; and using income tax laws to direct investment towards special housing programs.

• Finally, to indicate the relevant conditions for the implementation of subsidized housing in Occupied Palestine.

Methodology

The experience of subsidized housing programs in the Occupied Palestinian Territories will be summarized as an example of a developing environment. Thereafter, investment analysis models of housing program financing will be developed and formulated. Such financial models may be adopted by central and local governments as an alternative to direct subsidized programs. The models will include suggested institutions and financial instruments. The theoretical investment formulas and bases which may be applicable to most developing countries will be presented in order to fulfill the social and economic objectives of subsidizing the housing sector.

The cost of subsidized housing

Subsidizing housing means reducing the cost of purchasing a housing unit below what the market would otherwise dictate. The reduction in the cost may vary in its extent and conditions. Considering its extent, the reduction ranges from 100 percent (in the case of the distribution of free houses) down to just one percent. The subsidy may cover all or a part of the principal amount and/or the interest cost, a deduction in the down payment, or an extension in the number of years for the amortization of the principal amount.

Accordingly, the extent of the subsidy for housing may be defined as the difference between regular prices, market interest rates and housing sale conditions determined by the free market and the stated respective prices, interest rates and sale conditions for subsidized housing units. The difference between the two prices, known as the subsidized margin, is usually financed through public funds. The subsidized margin has a financing cost which is a percentage of the market interest rate and/or the principal amount. Therefore, there is a need to discuss the interest rate factor and its role in financing subsidized housing programs.

Theoretically, market interest rates are based on the intersection between the supply of and demand for capital. However, for practical purposes, the interest rate may be stated based on the following components: a percentage to cover annual general and administrative expenses; a percentage to cover risk and non-performing loans; a percentage to meet the cost of capital and funds; and a percentage to meet the expected inflation rate. Concerning the institutions related to subsidized housing, the four components above may be considered as follows:

a) *To cover administrative expenses.* The greater the efficiency in running the activities of related institutions, the fewer will be the administrative expenses required. In general terms, one to two percent is the average cost of the total funds for administrative expenses. However, the related institutions may need to invest a part of their assets in market securities in order to generate annual returns to cover part of the annual expenses.

b) *To cover risk and non-performing loans.* It is difficult to estimate a fixed rate to cover the risk factor of lending money, in spite of existing financial models which aim at establishing a relationship between the risk premium required by holders of bonds and the actual default experience of such bonds (Fons 1987). However, the risk associated with housing loans may be smaller than the risk borne by other long-term loans if the former are secured by property. Nonetheless, since repayments are due monthly, there is a significant rate of default risk of installments not being paid in due time. Thus, a percentage of the total loans should be deducted to cover possible losses in this regard. It is worth mentioning that other risks, such as future increases in the interest rate, should not be considered in the case of financing subsidized housing.

c) *To meet the expected rate of return of funds.* This may be determined based on the structure of the liabilities and owner equity of the institution. However, in the case of related housing institutions which are owned by the public and financed through free or low-interest long-term loans, the rate is expected to remain at a low level.

d) *To cover the inflation rate.* Currently, most countries are witnessing a continuous increase in the rate of inflation. This situation creates a real problem for the long-term money market, especially with regard to housing loans (Lessard and Modigliani 1975), which have long maturity periods ranging from ten to 25 years. To consider the inflation rate, which normally leads to high nominal interest rates, is not an easy task. However, many studies have suggested several methods to address this issue, such as resorting to inflation indexation, inflation subsidization, or using dual index instruments which may safeguard both parties by indexing payments to prices (Buckley, Lipman, and Persaud 1993). Accordingly, the following methods may be used:

(i) a fixed premium rate may be added to the actual interest rate for all periods;

(ii) a variable rate related to the national price index may be stated and added annually to the monthly repayments;

(iii) an interest rate adjusted to the average market rate which reflects the inflation rate, among other factors.

Nevertheless, it should be noted that the issue of inflation becomes more critical if loans are granted in the local currency. Local currencies in most developing countries witness a high percentage of devaluation in the long run. Thus, in order to protect their assets, many financial institutions in developing countries may peg loans to one or more of the hard currencies.

The subsidized housing margin may cover one or more of the four components above or may be extended to the principal amount according to various subsidized programs, as indicated in Table 3. However, the interest rate may be considered as the discount rate when considering the present value of cash flows of subsidized housing projects.

Table 3 Subsidized Margins of Financing Housing Programs

Subsidized Housing Programs	The Principal	Subsidized Margins				
Program #1: Subsidized E	The Paid Amount					
Program #2: Subsidized E & D	The Paid Amount					
Program #3: Subsidized E, D, & C	The Paid Amount					
Program #4: Subsidized E, D, C & B	The Paid Amount					
Program #5: Subsidized E, D, C, B, & A	The Paid Amount					
		A	B	C	D	E
A: Part of the principal B: Annual expenses C: Cost of non- performing debt D: Cost of capital E: Inflation cost and devaluation of local currency						

Source: Compiled by the author

Investment analysis of subsidized housing channels

Possible means and channels for financing subsidized housing projects differ from one country to another, and from one housing project to another. Many factors should be considered when selecting the services of one institution over another, such as the purposes of the housing program, the economic possibilities and social class of beneficiaries, and the desired extension of the subsidized margin. Traditionally, specialized public institutions are the major channels for financing subsidized housing, either by granting loans to beneficiaries (direct financing), or by undertaking specific building projects for distribution to the beneficiaries.

Various institutions and channels may be used to finance subsidized housing projects in different countries and regions. These institutions may be classified into three groups, namely:-public institutions such as public construction firms and municipalities; cooperative institutions such as cooperative banks, cooperative construction firms and supply cooperatives for building materials; and private business firms such as international and local construction and financial firms.

Examples of the above institutions are selected in this study in order to discuss the relevant capital investment techniques which may be considered in financing subsidized housing programs. Several basic criteria are taken into account, namely: ensuring the continuity of the specialized institutions without exhausting any part of the principal funds, so that these funds can be rotated; keeping the cost of financing subsidized houses at a minimum; and maximizing the possible ranges of the subsidized margin.

Land Development Authority for Housing

In most countries, one of the major obstacles to building more housing units is land. Land accounts for a substantial part of the total cost of a housing unit. For example, in Occupied Palestine the cost of land accounts for about 40 percent of the total cost of houses and 20 percent of the total cost of apartments in major cities, while the cost of land is lower in the villages, as indicated in Table 4. Accordingly, the government may assist the housing sector by implementing specific projects to develop land for housing in the major cities and suburbs so that selling would be based on cost rather than market price.

Various methods and models may be applied in order to develop the land, such as the site assembly model; real estate takeover for renewal; and developing new areas on

government-owned lands. The most appropriate way to increase the area available for housing in developing countries is the development of new lands owned by the government. This may be accomplished by establishing the infrastructure for roads and utilities and by dividing the land into lots based on relevant mapping and then selling these to the beneficiaries in cash or in installments. A "land development authority for housing" may be operated based on the following capital investment formula, using a whole project basis rather than a fiscal year basis:

Formula 1: The present value of cash inflow for a land development project (selling prices of the lots) ≥ present value of cash outflows (nominal price of the government land + cost of infrastructure + administration expenses) discounted at a minimum rate to cover only the expected inflation rate.

Table 4. Average Ratio Between Cost of Land and Building in Private Housing in Occupied Palestine, 1993

	Cost of land	Cost of Building
Cities - house	40%	60%
Cities - apartment	20%	80%
Villages - house	25%	75%

Source: Data collected and compiled by the author

The Public Housing Bank

A "specialized housing bank" is one of the most relevant channels which may be used to finance subsidized housing in developing countries. Such a bank concentrates on granting long-term loans directly to customers who are seeking to build their own houses and/or to finance the purchase of new ones. In this regard, several options may be adopted by a public housing bank.

First option: The bank may hold a portion of its assets to be invested in market securities while the remainder is allocated to housing loans. The strategy of having public grants as owners' equity may be operationalized according to the following:

Formula 2: The annual cash inflow for a fiscal year (collected installments) from previous loans + market security returns ≥ annual cash outflow (newly-granted loans + non-performing loans and administrative expenses).

The above formula uses a fiscal year basis. The present value of cash flows, the cost of capital and inflation rates are ignored as a way of subsidizing the housing sector.

Second option: The bank allocates all its assets to housing loans as low-interest liability loans. A public grant as owners' equity may be operationalized according to the following investment formula:

Formula 3: The annual cash inflow for a fiscal year (collected installments) ≥ the annual cash outflow (newly granted loans + annual cost of loans + non-performing loans + administrative expenses).

The Cooperative Housing Bank

The "cooperative housing bank" is an important channel for financing subsidized housing units. This deals only with cooperative housing societies. In most developing countries the cooperative housing sector represents a significant part of the total housing sector. Cooperative housing societies work and deal with the cooperative housing banks

according to international and national cooperative principles and regulations. Accordingly, a cooperative housing bank holds assets allocated to housing loans, and liabilities which include current accounts for cooperative societies and low-interest long-term loans. Members' capital shares as owners' equity may be operationalized according to the following:

Formula 4: Annual cash inflow for a fiscal year (collected installments) ≥ annual cash outflow (newly-granted loans + non-performing loans + annual expenses + annual interest) + 6% of capital shares value.[1]

The above formula is stated on a fiscal year basis and ignores both the present value of cash flows and the inflation rate. However, if the present value of cash flows is to be considered, the discount rate may be calculated as follows:

Formula 5: Discount rate = a percentage (1%-2%) to cover annual expenses and non-performing loans + a percentage to cover social costs (amount to be allocated to social services) + (interest liability rate x the ratio of long-term liabilities to total assets) + 6% x value of capital shares value ÷ total granted loans value.

The Supply Cooperative for Building Materials

Obtaining the relevant building materials at a fair price is considered a major problem facing the housing sector in developing countries, especially since most housing units are built under the supervision of their owners rather than by specialized construction companies. A family seeking to build a house must hire many small contractors and supervise all processes of building the home. It must also purchase all relevant building materials from scattered markets. The establishment of a "supply cooperative for building materials" is thus considered a significant channel for financing subsidized housing units, and to provide materials at a low price as well as various technical and construction services. The difference between the market price and the cooperative's final price is considered to be the subsidized margin. A supply cooperative may be owned by individuals who already have licenses for building and could remain as owner-members in order to finish the building of their houses. They may then sell their share to new qualified individuals or to the cooperative itself. The supply cooperative may be operated based on the following:

Formula 6: Net cash flow (sales - cost of goods sold - annual expenses) ≥ (6% of capital + 25% of income for reserves + 10% of income for social services) + the recovered price ratio (patronage dividends + annual sales).[2]

The Local Construction Business Firm

A "construction business firm" may be used directly as a means to subsidize the housing sector. This is accomplished by offering the firm special subsidies which will supposedly be passed on to the final beneficiaries. Such special subsidies may be tax exemptions, import privileges for building materials, as well as credit facilities, including direct grants of free or low-interest loans. Granting low-interest loans to specialized construction firms is a common way of subsidizing business firms serving the housing sector. However, governments and public institutions that grant such loans are expected to impose special conditions with regard to prices, costs and conditions of financing, and types of implemented housing units, as well as the qualifications of the beneficiaries. In this case, the construction business firm may be operated according to the following:

Formula 7: Present value of cash inflows for all periods of the subsidized project ≥ present value of cash outflows discounted based on a reduced rate (cost of capital rate - subsidized rate [the average market interest rate - the granted interest rate x percentage of the value of the granted loan to total assets]).

The International Construction Firm

Due to lack of experience in construction as well as lack of needed equipment and building materials in most developing countries, international construction firms may be invited to participate in special housing projects. The question then arises as to the possibility of participation by the company in the implementation of the subsidized housing projects and in dealing directly with the final beneficiaries. In this case, Formula 7 above may be considered with adjustments related to the difference between international and local interest rates. Therefore, an international construction firm who receives subsidized loans may be operated according to the following:

Formula 8: Present value of cash inflows for all periods of a housing project $\geq$ present value of cash outflows discounted on the basis of a reduced rate (expected rate of return from related projects - subsidized interest rate [international market interest rate - interest rate on granted loan] x the ratio of the granted loan to total investments in the project).

The Public Institution

Two groups of public institutions may be involved in subsidizing the housing sector. First, specialized public construction firms may be established as part of the public sector and assigned to build housing units in order to resell or rent them to individuals. Secondly, there may be public institutions such as municipalities and Housing Ministries. In the case of a public construction firm, the investment formula to be used may be as follows:

Formula 9: Present value of cash inflows for the expected life of the firm $\geq$ present value of outflows discounted on the basis of a minimum rate including a percentage to cover expenses and non-performing loans + a percentage to cover the expected inflation rate.

The cost of capital rate as part of the discount rate may be ignored as part of the subsidized margin. In the case of municipalities, the investment valuation formula may be as follows:

Formula 10: Present value of cash inflows for all periods of a project $\geq$ cash outflows discounted on the basis of a minimum rate including a percentage to cover housing project expenses, a part of municipality expenditures and the expected inflation rate.

The Non-Profit Institution

Non-profit institutions such as social charities may be involved in subsidizing the housing sector, especially for low-income families and social welfare beneficiaries. These institutions may build special housing complexes through business construction firms in order to sell them at special prices to qualified beneficiaries under special programs. The subsidized margin, that is, the difference between market and special prices, may include the cost of financing as well as part of the principal amount. In this case, the special programs above may be operated according to the following:

Formula 11: Total cash inflows for a program (collected installments + allocated subsidized funds) $\geq$ total cash outflows for the same program.

Finally, Table 5 summarizes the institutions suggested above and their investment bases for financing subsidized housing programs.

Table 5. Relevant Investment Institutions and Their Investment Bases for Financing Subsidized Housing

Institution	Bases
Land Development Authority for Housing	* a project basis * prices based on cost rather than market
Housing Banks	* a fiscal year basis * subsidized margin includes a part of cost of capital
Cooperative Banks	* a fiscal year basis * subsidized margin includes a part of cost of capital * cooperative principles to be considered
Supply Cooperatives	* a fiscal year basis * the subsidized margin includes recovered price ratio (patronage) * cooperative principles to be considered
Local Construction Firms	* a project basic * the present value to be considered * subsidized margin includes low discount rate
International Construction Firms	* a project basic * present value to be considered * subsidized margin includes low discount rate (international rate - granted rate)
Public Institutions	* a whole life firm project basis * a zero net present value basis * subsidized margin includes cost of capital
Non-Profit Firms	* a project basis * subsidized margin includes cost of capital and a part of the principal * subsidized funds are exhausted

Source: Compiled by the author

Conditions for Implementing Subsidized Housing in Occupied Palestine

The Experience of Subsidized Housing in Occupied Palestine

In order to revitalize the housing sector in OP there was an attempt to subsidize family housing units. Accordingly, a grant of $66 million was distributed by the Jordanian-Palestinian Committee directly to 1,400 cooperative housing members and 2,150 individuals, with an average of $20,000 for each. However, this subsidized program faces many problems and criticisms, which may be summarized as follows:

a) No conditions were stated concerning the size and quality of subsidized housing units. Therefore, the majority of the housing units built through this project were at a very high cost. This researcher analyzed the cost of many completed cooperative housing units built during the 1980-1988 period and found that the cost of 70 percent of the units ranged from $45,000 to $75,000 per unit. Only 15 percent of the total units cost less than $45,000, while 15 percent of total cooperative units cost more than $75,000 (Sabri 1991). This means that the average cost of a subsidized cooperative unit was high, whereas the project intended to subsidize householders who were otherwise unable to build a suitable house for their families.

b) As a result of their high cost, many such luxury cooperative housing units have yet to be completed. Indeed, by 1989 it was estimated that 70 percent of the cooperative units had not been finished. However, completion levels differ from one cooperative to another, and from one house to another within the same cooperative. A few cooperatives have completed their housing units, a situation which created inconveniences for residents living in the cooperative complex while construction work was still going on.

c) No funds were allocated to establish the necessary infrastructure. As a result, many cooperative complexes have no major facilities or utilities.

d) As there were no clear policies concerning the qualifications of beneficiaries, socioeconomic factors were ignored in the assessment of applications. In addition, there was unfair distribution of grants among beneficiaries and regions, since most of the cooperatives which were awarded grants operated in the Ramalah district.

e) It was stipulated that individuals holding serviced land with a building permit could apply for a housing grant. As a result, only high-income individuals were eligible for grants.

f) It was not clear whether these funds were loans or grants. In the absence of a framework for collateral security planning, the loans became grants and the project was terminated, whereas it could have been continued if funds were rotated.

g) There was no national or local institutional framework to oversee subsidized housing programs. Moreover, there were no well-defined procedures to screen, select and implement the process of granting housing subsidies. The beneficiaries would go to Amman in Jordan and apply directly to the Joint Committee without any local recommendations.

Based on the experience of housing in Occupied Palestine, one may conclude that there should be some government interference in the financing of housing. A World Bank report stated that, if subsidized housing programs are to be implemented in OP, they should be viewed as a "last resort, well-targeted, measurable and transparent" (World Bank, *Developing the Occupied Territories*, 1994: 102). Furthermore, such programs must be operated according to specific indicators, using financial and performance measures, so as to ensure their continuous evaluation and improvement.

Suggested implementation plan for subsidized housing in Occupied Palestine

The implementation of subsidized housing programs may be feasible only if the issues and the obstacles in the housing sector have been removed. The following measures are required: adopting new low-cost construction methods, such as using concepts of rationalization processes and repetitive mass production, as well as employing machines and molds that can be manufactured locally (Jabaji 1985); developing an effective property rights regime and strengthening the construction industry (World Bank, *Developing the Occupied Territories*, 1994: 104); implementing a general physical plan at town and village levels in order to expand development areas (Abdul-Hadi 1994: 58); expanding the zoning areas of OP's cities and villages to facilitate the granting of building licenses and the transfer of land ownership, and to permit the registration of an apartment in a house; as well as establishing relevant financial institutions and reforming related taxes and rent laws (Sabri 1994).

Table 6 presents a suggested task chart for financing subsidized housing in OP, in order to identify relevant mechanisms for carrying out subsidized housing projects. This summarizes the strategies, policies and procedures which might be followed so as to improve the current condition of OP's housing sector.

The stating of subsidized housing strategies, policies and alternatives may confront us with the issue of stating the relevant discount rates for the various programs. Stating the discount rate (cost of capital or imputed interest rate) is the core factor in housing financing as a long-term maturity. However, given that OP's housing sector is characterized by an inefficient market with imperfect data, defining the discount rate becomes a difficult task. In addition, processes for estimating local interest rate trends in connection with money supply and credit policies have not yet materialized, and interest rates in Arab banks are stated on the basis of interest rates in the developed countries for foreign currency loans. Stating the interest rate in local currency is more effective in view of local inflation rates, exchange rate fluctuations vis-a-vis foreign currencies, and other political and economic constraints (Sabri

1993). Furthermore, standard financial instruments such as commercial bonds, which may help state the discount rate, are not used. It is recommended that the discount rate for subsidized housing include only administrative expenses, non-performing loans, and the inflation rate, thus excluding the rate of return.

Table 6. Suggested Task Chart for Financing Subsidized Housing in OP

Processes	Task Procedures	Alternatives
Establishing Strategies	Allocate budgets	Free interest loans, interest loans, grants
	State financing instruments	Land development authority, housing banks, cooperative banks, public institutions
	Select bases of financial evaluation	Project basis, fiscal annual basis, whole life Institute basis
Establishing Policies	Allocate funds	Projects, institutions, ministries, private sector
	State qualifications of the beneficiaries	Income-social classes, cities or villages residents, size and types of the housing unit
	State margin of subsidy: Programs (A, B, C, D and E.)	Part of the principal, annual expenses, cost or non-performing debt, cost of capital, inflation cost
Implementation	Primary screening	Meeting conditions-qualifications
	Final selections of beneficiaries	Priorities-lottery
	State conditions of payments and repayments	Unified terms, different terms
	Setting the collateral	Personal, property, postponing the registration, other collateral
	Finalizing the contracts	Unified contracts, different contracts
Following Up	Payments and collections	Specialized institutes, commercial banks
	Follow up projects	Government auditing, private CPAs
	Follow up financial flow	Annual reports, special reports
	Final financial evaluation	Unified council, specialized institutes
	Rotate funds & budgets	New strategies - policies, same ones

Summary and conclusion

The financing of the housing sector has special characteristics, such as a long maturity, monthly repayments of housing loans, and increasing housing unit costs. These characteristics significantly affect the supply of housing, which raises final housing costs to a level beyond the means of many potential buyers. Therefore, countries all over the world attempt to subsidize their housing sector using various channels. Directly allocated funds are one of the most effective and commonly used strategies, especially in subsidizing low-income family houses. However, the funds earmarked for housing in any country fluctuate from one period to another and are spent in most cases without taking into account the financial feasibility of such projects, so long as social targets are met.

Accordingly, and given the new role of government in the economy, this paper intended to present an investment analysis of subsidized housing programs in which several criteria have been considered, namely: assuring the continuity of related specialized institutions; preventing allocated principal funds from being exhausted, so that these funds

may be rotated to other beneficiaries; keeping the cost of financing at a minimum; maximizing the subsidized margin; and using various methods and ranges of subsidized margins to fit all social classes of beneficiaries. The methods may range from subsidizing part of the cost of financing to part of housing unit costs.

Subsidized housing programs may be developed through public firms, cooperatives, as well as local and international business firms. The investment formulas suggested here are relevant to the above institutions according to the purpose of the subsidized programs and the funds available. Overall, a fiscal year basis formula is relevant to financial institutions which are subsidized with public funds. By contrast, a project basis formula using the present value of cash flows is an appropriate technique to be used by local and international construction firms, while a life project basis is a suitable technique to be considered by public construction firms. Finally, it should be noted that the suggested institutions and investment formulas may be applicable to most developing countries in order to fulfill the social and economic objectives of subsidizing the housing sector. However, differences concerning the philosophy, objectives, and related laws and regulations should be considered for each country in each of the above-mentioned institutions.

Notes

1. The maximum interest rate is six percent for the capital as stated in international cooperative principles.
2. The ratios may differ from one country to another.

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